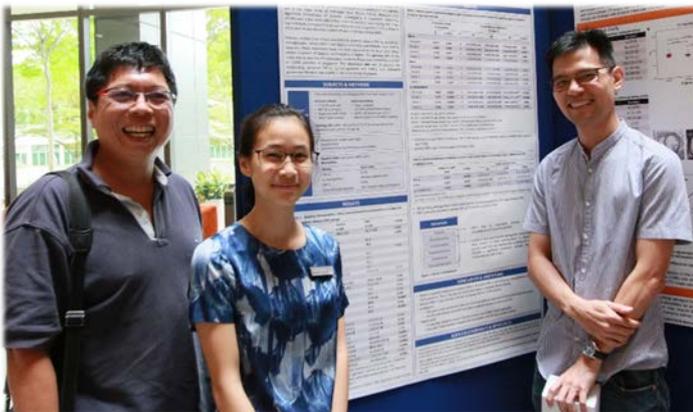


Medical Students' Guide to Research Mentors



- Foreword -

The purpose of this booklet is to provide information on the research opportunities available to Duke-NUS MD students, and to help them identify mentors for their research projects. This booklet includes all research mentors approved by the Duke-NUS Research and Scholarship Committee.

- NUS Personal Data Protection Privacy Statement -

NUS acting through Duke-NUS collects, uses and/or discloses your personal data in any form and to disclose the same to third parties (including any third party located outside of Singapore) in compliance with the Singapore Personal Data Protection Act (PDPA) 2012 and all subsidiary legislation for the purpose of managing the Duke-NUS research mentors and all other actions necessary in relation to them (e.g. the publishing of the Guide to Research Mentors Booklet).

For more information, please see our NUS Personal Data Protection Privacy Statement at this link: <http://www.nus.edu.sg/legal-information-notices#pdpa> on how we handle personal data.

Research Mentors approved by the Research and Scholarship Committee after July 2014 are included in this booklet upon written consent for use of their information.

- Important notes on mentors -

Approved Mentors take primary responsibility of the mentee during his/her research experience.

Newly Approved or First-time Mentors take primary responsibility of the mentee during his/her research experience, but are expected to identify a senior approved mentor who will oversee the mentoring process.

For the most up-to-date list of approved mentors, students may refer to the Duke-NUS Approved Mentors List available on Learner's Wiki. Alternatively, they may contact the Scholarly Development Programme coordinator, Ms. June Lee (june.lee@duke-nus.edu.sg).

BY ALPHABETICAL ORDER

1. Albani, Salvatore
2. Ang, Beng Ti Christopher
3. Ang, Marcus
4. Ang, Seng Bin
5. Augustine, George J.
6. Aung, Tin
7. Barathi, Veluchamy A.
8. Bertoletti, Antonio
9. Beuerman, Roger W.
10. Bian, Jinsong
11. Casey, Patrick J.
12. Chacko, Ann-Marie
13. Chan, Angelique
14. Chan, Derrick Wei-Shih
15. Chan, Jerry Kok Yen
16. Chan, Ling Ling
17. Chay, Oh Moh
18. Cheah, Peh Yean
19. Chee, Michael
20. Chen, William Wei Ning
21. Chen, Yu Helen
22. Cheng, Ching-Yu
23. Cheung, Carol Yim Lui
24. Cheung, Yin Bun
25. Chew, Fook Tim
26. Chew, Kelvin Tai Loon
27. Chew, Min Hoe
28. Chew, Sophia Tsong Huey
29. Chew, Suk Peng Valerie
30. Chia, John Whay Kuang
31. Chia, Shi-Lu
32. Chin, Calvin
33. Chiong, Edmund
34. Choo, Su Pin
35. Chow, Pierce
36. Chow, Wan Cheng
37. Chowbay, Balram
38. Chua, Terrance Siang Jin
39. Chuah, Charles
40. Coffman, Thomas M.
41. Compton, Scott
42. Cook, Stuart A.
43. De Silva, Deidre Anne
44. Devanand, Anantham
45. Dhanasekaran, Vijaykrishna
46. Fenwick, Eva
47. Finkelstein, Eric
48. Fong, Kok Yong
49. Fung, Daniel Shuen Sheng
50. Gan, Yunn Hwen
51. Gandhi, Mihir
52. Goh, Brian Kim Poh
53. Goh, Cynthia
54. Goh, Yeow Tee
55. Gooley, Joshua
56. Halliwell, Barry
57. Hausenloy, Derek
58. Hsieh, Po Jang Brown
59. Hu, Jiancheng
60. Hwang, Nian Chih
61. Hwang, William Ying Khee
62. Iqbal, Jabed
63. Itahana, Koji
64. Iyer, N Gopalakrishna
65. Jafar, Tazeen Hasan
66. Je, Hyunsoo Shawn
67. Kandiah, Nagaendran
68. Koh, Joyce Suang Bee
69. Koh, Siyue Mariko
70. Koh, Tse Hsien
71. Koh, Woon Puay
72. Krishnan, Manoj N.
73. Kuan, Win Sen
74. Kumar, Prakash
75. Lam, Carolyn Su Ping
76. Lamoureux, Ecosse
77. Lee, Caroline Guat Lay
78. Lee, Haur Yueh
79. Lee, Jan Hau
80. Lee, Ser Yee
81. Lee, Shu-Yen
82. Lee, Tih-Shih
83. Lee, Yung Seng
84. Lek, Ngee
85. Leow, Melvin Khee Shing
86. Leung, Katy Ying Ying
87. Li, Jialiang
88. Li, Shang
89. Liao, Ping
90. Lie, Denny Tjiauw Tjoen
91. Lim, Chwee Ming
92. Lim, Darren Wan-Teck
93. Lim, Kah Leong
94. Lim, Kiat Hon Tony
95. Lim, Soon Thye
96. Lim, Swee Han
97. Ling, Khoon Lin
98. Liu, Jin
99. Liu, Nan
100. Lo, Yew Long
101. Loh, Amos
102. Loh, Thomas Kwok Seng
103. Loi, Tien Tau Carol
104. Lok, Shee Mei
105. Low, Hsiu Ling Andrea
106. Low, Jenny Guek Hong
107. Low, Kin Huat
108. Low, Lian Leng
109. Mahadev, Arjandas
110. Malhotra, Chetna
111. Malhotra, Rahul
112. Matchar, David B.
113. Mehta, Jodhbir
114. Narasimhalu, Kaavya
115. Ng, Quan Sing
116. Ng, Wai Hoe
117. Ng, Yee Sien
118. Ngeow, Joanne
119. Ong, Biauwei Chi
120. Ong, Chin-Ann Johnny
121. Ong, Eng Hock Marcus
122. Ong, Sin Tiong
123. Ooi, Eng Eong
124. Østbye, Truls
125. Ozdemir, Semra
126. Pervaiz, Shazib
127. Pettersson, Sven
128. Puar, Hai Kiat Troy
129. Quah, Stella R.
130. Quek, Richard Hong Hui
131. Rajadurai, Victor Samuel
132. Rozen, Steve
133. Sabanayagam, Charumathi
134. Sabapathy, Kanaga
135. Sahlén, Anders Olof
136. Saw, Seang Mei
137. Sia, Alex Tiong Heng
138. Silver, David L.
139. Smith, Gavin J.
140. Sng, Ban Leong
141. Soo, Khee Chee
142. St. John, Ashley L.
143. Sung, Min
144. Sung, Sharon Cohan
145. Tai, Bee Choo
146. Tai, E Shyong
147. Tan, Bien Soo
148. Tan, Chieh Suai
149. Tan, Ene Choo
150. Tan, Eng King
151. Tan, Hiang Khoon
152. Tan, Iain Bee Huat
153. Tan, Kok Hian
154. Tan, Emile John
155. Tan, Louis Chew Seng
156. Tan, Ngiap Chuan
157. Tan, Patrick
158. Tan, Poh Lin
159. Tan, Puay Hoon
160. Tan, Swee Yaw
161. Tan, Thiam Chye
162. Tang, Mark Boon Yang
163. Tang, Phua Hwee
164. Tang, Shenglan
165. Tang, Tjun Yip
166. Tay, Bee Gek Laura
167. Tay, Kiang Hiong
168. Tay, Shian Chao
169. Teh, Bin Tean
170. Tenen, Daniel
171. Teo, Irene
172. Teo, Melissa Ching Ching
173. Tey, Hong Liang
174. Thike, Aye Aye
175. Thumboo, Julian
176. Toh, Han Chong
177. Tong, Louis Hak Tien

- | | | |
|---------------------------|-----------------------------|--------------------------|
| 178. Van Dongen, Antonius | 186. Wong, Tien Yin | 194. Yeo, Khung Keong |
| 179. Vasudevan, Subhash | 187. Wong, Ting Hway | 195. Yeo, Seng Jin |
| 180. Virshup, David | 188. Wong, Tzee Ling Tina | 196. Yeoh, Allen Eng Juh |
| 181. Wang, Hongyan | 189. Yang, Meijuan Grace | 197. Yong, Eu Leong |
| 182. Wang, Jie Jin | 190. Yang, Yong | 198. Yoon, Sungwon |
| 183. Wang, Linfa | 191. Yen, Paul Michael | 199. Zhong, Liang |
| 184. Wang-Casey, Mei | 192. Yeo, Cheo Lian | 200. Zhou, Juan Helen |
| 185. Wong, Hee Kit | 193. Yeo, George Seow Heong | 201. Zhou, Lei |

BY PROGRAMME / AREA OF RESEARCH

Cancer and Stem Cell Biology

Casey, Patrick J.
Chacko, Ann-Marie
Itahana, Koji
Li, Shang

Ong, Sin Tiong
Pervaiz, Shazib
Rozen, Steve
Sabapathy, Kanaga

Tan, Patrick
Tenen, Daniel
Virshup, David
Wang-Casey, Mei

Cardiovascular and Metabolic Disorders

Bian, Jinsong
Coffman, Thomas M.
Cook, Stuart A.
Yen, Paul Michael

Hausenloy, Derek
Lam, Carolyn Su Ping
Silver, David L.

Tai, E Shyong

Emerging Infectious Diseases

Bertoletti, Antonio
Dhanasekaran, Vijaykrishna
Gan, Yunn Hwen
Krishnan, Manoj N.

Lok, Shee Mei
Low, Jenny Guek Hong
Ooi, Eng Eong
Smith, Gavin J.

St. John, Ashley L.
Vasudevan, Subhash
Wang, Linfa

Health Services and Systems Research

Chan, Angelique
Fenwick, Eva
Finkelstein, Eric
Goh, Cynthia
Jafar, Tazeen Hasan

Lamoureux, Ecosse
Malhotra, Chetna
Malhotra, Rahul
Matchar, David B.
Ong, Eng Hock Marcus

Ozdemir, Semra
Quah, Stella R.
Sung, Sharon Cohan
Teo, Irene
Yoon, Sungwon

Neuroscience and Behavioural Disorders

Augustine, George J.
Chee, Michael
Gooley, Joshua
Hsieh, Po Jang Brown

Je, Hyunsoo Shawn
Lee, Tih-Shih
Lim, Kah Leong
Van Dongen, Antonius

Wang, Hongyan
Zhou, Juan Helen

Anaesthesiology and Perioperative Sciences

Chew, Sophia Tsong Huey
Hwang, Nian Chih

Ong, Biau Chi
Sia, Alex Tiong Heng

Sng, Ban Leong

Cardiovascular Sciences

Chin, Calvin
Chua, Terrance Siang Jin

Sahlén, Anders Olof
Tan, Swee Yaw

Yeo, Khung Keong
Zhong, Liang

Emergency Medicine

Kuan, Win Sen

Lim, Swee Han

Liu, Nan

Family Medicine

Ang, Seng Bin

Low, Lian Leng

Tan, Ngiap Chuan

Medicine

Albani, Salvatore
Chew, Suk Peng Valerie
Chow, Wan Cheng
Chuah, Charles
Devanand, Anantham
Fong, Kok Yong
Fung, Daniel Shuen Sheng

Goh, Yeow Tee
Hwang, William Ying Khee
Koh, Siyue Mariko
Lee, Haur Yueh
Leow, Melvin Khee Shing
Leung, Katy Ying Ying
Ling, Khoon Lin

Low, Hsiu Ling Andrea
Ng, Yee Sien
Puar, Hai Kiat Troy
Sung, Min
Tan, Chieh Suai
Tang, Mark Boon Yang
Tay, Bee Gek Laura

Tey, Hong Liang

Thumboo, Julian

Musculoskeletal Sciences

Chew, Kelvin Tai Loon
Chia, Shi-Lu
Koh, Joyce Suang Bee

Lie, Denny Tjiauw Tjoen
Mahadev, Arjandas
Tay, Shian Chao

Wong, Hee Kit
Yeo, Seng Jin

Neuroscience

Ang, Beng Ti Christopher
De Silva, Deidre Anne
Kandiah, Nagaendran
Kumar, Prakash

Liao, Ping
Lo, Yew Long
Narasimhalu, Kaavya
Ng, Wai Hoe

Tan, Eng King
Tan, Louis Chew Seng

Obstetrics and Gynaecology

Chan, Jerry Kok Yen
Chen, Yu Helen
Yong, Eu Leong

Tan, Kok Hian
Tan, Thiam Chye

Yeo, George Seow Heong

Oncology

Chia, John Whay Kuang
Choo, Su Pin
Chow, Pierce
Chowbay, Balram
Hu, Jiancheng
Iyer, N Gopalakrishna
Lee, Caroline Guat Lay

Lim, Darren Wan-Teck
Lim, Soon Thye
Ng, Quan Sing
Ngeow, Joanne
Ong, Chin-Ann Johnny
Pettersson, Sven
Quek, Richard Hong Hui

Soo, Khee Chee
Tan, Hiang Khoon
Tan, Iain Bee Huat
Teh, Bin Tean
Teo, Melissa Ching Ching
Toh, Han Chong
Yang, Meijuan Grace

Ophthalmology and Visual Sciences

Ang, Marcus
Aung, Tin
Barathi, Veluchamy A.
Beuerman, Roger W.
Cheng, Ching-Yu

Cheung, Carol Yim Lui
Lee, Shu-Yen
Mehta, Jodhbir
Sabanayagam, Charumathi
Tong, Louis Hak Tien

Wong, Tien Yin
Wong, Tzee Ling Tina
Zhou, Lei

Paediatrics

Chan, Derrick Wei-Shih
Chay, Oh Moh
Lee, Jan Hau
Lee, Yung Seng

Lek, Ngee
Rajadurai, Victor Samuel
Tan, Ene Choo
Tan, Poh Lin

Yeo, Cheo Lian
Yeoh, Allen Eng Juh

Pathology

Iqbal, Jabed
Koh, Tse Hsien

Lim, Kiat Hon Tony
Tan, Puay Hoon

Thike, Aye Aye

Radiological Sciences

Chan, Ling Ling
Tan, Bien Soo

Tang, Phua Hwee
Tay, Kiang Hiong

Surgery

Cheah, Peh Yean
Chew, Min Hoe
Chiong, Edmund
Goh, Brian Kim Poh

Lee, Ser Yee
Lim, Chwee Ming
Loh, Amos
Loh, Thomas Kwok Seng

Loi, Tien Tau Carol
Tan, Emile John
Tang, Tjun Yip
Wong, Ting Hway

Epidemiology / Quantitative Medicine

Cheung, Yin Bun
Gandhi, Mihir
Koh, Woon Puay

Li, Jialiang
Liu, Jin
Saw, Seang Mei

Wang, Jie Jin
Yang, Yong

Global Health / Public Health

Østbye, Truls

Tai, Bee Choo

Tang, Shenglan

Medical Education

Compton, Scott

Other Basic Sciences / Bio-Engineering

Chen, William Wei Ning
Chew, Fook Tim

Halliwell, Barry
Low, Kin Huat

Albani, Salvatore *MD, PhD*

Professor, Duke-NUS Medical School

Professor, SingHealth Duke-NUS Paediatrics Academic Clinical Programme

Director, SingHealth Translational Immunology and Inflammation Centre

Senior Clinical Scientist, KK Women's and Children's Hospital

Contact: 6576 7131

Email: salvatore.albani@singhealth.com.sg

Website: -



Research Summary

STIIC established as a joint initiative of SingHealth and Duke-NUS aims to catalyse the growth of multidimensional interdisciplinary professionals to prepare them for a wide range of careers focussed on improving human health. We aim to identify and bridge unmet needs of several clinically important conditions, a few wide ranging examples are tumour microenvironment, Rheumatological disease, heart failure etc. The research team and laboratory at STIIC has varied expertise in the field of Immunology, Inflammation and Bioinformatics. We have a workflow (Immunomics) that will be customised to a project's needs and enable high throughput analysis of patient samples. Instruments that lend themselves to these analyses include CyTOF (for mass cytometry analysis) and Nanostring (for pathway analysis). We encourage students who train with us to be able to choose from various projects that are currently being undertaken at STIIC such that it can be aligned with their research interests. One of the potential projects that a student can expect to undertake within a timeframe of up to 10 months could be one that investigates immunological profiles and perturbations in the tissue micro environment. This is based on the premise that the peripheral blood could potentially reflect the immune populations that infiltrate tissue under various conditions. We seek to investigate this by deep immunophenotyping and barcoding cells to identify relevant biosignatures that would have a translational potential. Clinical samples could be from patients with Rheumatological disease, Tumour etc.

Past and Current Duke-NUS MD Research Students

Ang Chieh Hwee (Class of 2016)

Student Publications

NA

Ang, Beng Ti Christopher *MBBS, FRCSEd (Gen Surg), FRCSGlasg(Gen.Surg), FRCSEd (Neurosurgery), FAMS (Neurosurgery)*

Associate Professor, Duke-NUS Medical School

Senior Consultant and Head, Department of Neurosurgery, National Neuroscience Institute

Contact: -

Email: bengti.ang@gmail.com

Website: -



Research Summary

Our group has established a method of cryopreservation that facilitates the establishment of a brain tumor stem cell repository. We have isolated brain tumor stem cells from patient tumor samples, which are capable of re-creating tumor masses in mice. These implanted cells in the mouse brain eventually form tumors with morphology identical to that seen on pathological analysis of patient specimens. These tumor cells-of-origin display genetic profiles totally distinct from the tumor bulk. Importantly, different patients with similar tumor tissue pathology on microscopic examination display very different genetic profiles in their cells-of-origin, the cancer stem cells. This has major implications as current treatment strategies are largely decided based upon classification systems tailored according to morphological characteristics of the tumor. The different genetic profiles of such tumor stem cells might explain variability of treatment response and points to the existence of different genetic brain tumor subtypes which one is unable to discern based on current classification systems. As such, we now have a stable collection of such cells to enable investigative efforts in drug screening. Our lab is also engaged in deciphering chemoresistance mechanisms and in discovery of novel markers for identification of these cells.

Past and Current Duke-NUS MD Research Students

Vincent Tay (Class of 2011)

Student Publications

NA

Ang, Marcus

Associate Professor, Duke-NUS Medical School

Consultant, Cornea and Refractive Service, Singapore National Eye Centre

Hon. Consultant, Moorfields Eye Hospital, London, UK

Contact: 62277255

Email: marcus.ang@singhealth.com.sg

Website:

https://www.researchgate.net/profile/Marcus_Ang2?ev=hdr_xprf&_sg=pzsNf6e34U4uDb4EPXoPTSxLuzFu_eLjLy_vslQ1lds1sNizFqWJ8ZCL1V3EY-hV



Research Summary

Marcus Ang is currently Consultant and Clinician Investigator at SNEC and SERI, with a Masters in Clinical Investigation (NUS). Marcus' research projects have a special emphasis on translational clinical research, searching for a direct clinical impact to improve outcomes in patients. His research areas traverse several aspects in Ophthalmology, namely: Health services research in Ophthalmology, Cornea transplantation, Ocular imaging and Ocular Device Innovation. Marcus has over 80 publications in peer-reviewed journals (including more than 10 in the top impact factor journal Ophthalmology IF = 6.70; and majority first author in journals IF > 3.0 such as BJO, IOVS and AJO). He has also co-authored more than 5 book chapters. He is currently PI of several national grants, most recent from NMRC and NHIC in 2016. He also has several awards from local as well as international organizations, with recognition for his presentations at international meetings.

Past and Current Duke-NUS MD Research Students

Saideep Bose (Class of 2012)

Student Publications

Bose S, Ang M, Mehta JS, Tan DT, Finkelstein E. Cost-effectiveness of Descemet's stripping endothelial keratoplasty versus penetrating keratoplasty. *Ophthalmology*. 2013 Mar;120(3):464-70 (Impact Factor 6.7)

Ang M, Mehta JS, Lim F, **Bose S**, Htoon HM, Tan D. Endothelial cell loss and graft survival after Descemet's stripping automated endothelial keratoplasty and penetrating keratoplasty. *Ophthalmology*. 2012 Nov;119(11):2239-44. (Impact Factor 6.7)

Ang, Seng Bin *MBBS, MMED (Family Medicine)(S'pore), Dip (Family Med)(NUS), Dip OM (S'pore), Dip (Family Practice Dermatology)(NUS), NCMP, MCFP (S), FCFP (S)*



Adjunct Assistant Professor, Duke-NUS Medical School

Head and Consultant, Family Medicine Service, KK Women's and Children's Hospital

Head, Menopause Unit, KK Women's and Children's Hospital

Associate Programme Director, Family Medicine, SingHealth Residency Programme

Clinical Physician Faculty Member, Obstetrics and Gynaecology, SingHealth Residency Programme

Contact: -

Email: ang.seng.bin@singhealth.com.sg

Website: -

Research Summary

My research interest includes devices, clinical as well as health services research. Projects in the coming year includes a specially manufactured garment for use in children with severe eczema, osteoporosis prevalence study in the community, Melasma prevalence and progression in pregnant women, Sexuality issues in the Singapore Woman, etc.

Past and Current Duke-NUS MD Research Students

Angela Frances Yap Hui Wen (Class of 2017)

He Huiling (Class of 2018)

Cai Meijin (Class of 2019)

Student Publications

NA

Augustine, George J. *PhD*

Adjunct Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Professor and Principal Investigator, Synaptic Mechanisms and Circuits Laboratory, Lee Kong Chian School of Medicine, Nanyang Technological University

Research Director, Institute for Molecular and Cell Biology, A*STAR

Contact: 6778 2012

Email: george.augustine@duke-nus.edu.sg

Website: -



Research Summary

One of the most striking features of the brain is the abundant synaptic connections between nerve cells. These connections allow very rapid signalling between nerve cells and serve as the fundamental mechanism for information processing and storage in the brain. Our laboratory is interested in the function of these synaptic connections and we are studying 3 important questions within this general area:

Molecular basis of neurotransmitter release from neurons

The rapid secretion of chemical signals (neurotransmitters) serves as the basis for communication between neurons. We are identifying the proteins that are involved in the synaptic vesicle trafficking reactions underlying neurotransmitter secretion, with particular emphasis on proteins involved in exocytosis and endocytosis. Our current research is largely focussed on the functions of synapsins, a family of proteins whose functions include cross-linking vesicles into a "reserve pool". The questions we are pursuing include: (1) Why are there so many different synapsin isoforms? and (2) What unique functions do these isoforms serve at different types of synapses?

Signal transduction pathways underlying long-lasting synaptic plasticity

Synaptic signaling is "plastic", meaning that communication between neurons can get stronger or weaker depending on the previous history of neuronal activity. Such plastic changes in synaptic transmission are thought to be important for dynamic changes in brain function and, in particular, may serve as the basis for memory. We are studying one such form of synaptic plasticity, termed cerebellar long-term synaptic depression (LTD). The questions we are tackling include: (1) What are the signals that initiate LTD? and (2) How does neuronal gene expression change to make LTD permanent?

Optogenetic mapping of brain circuit

Synaptic circuits between neurons form the "wiring" that allows the brain to process information. Optogenetics has revolutionized our ability to elucidate the function of these circuits: with light-activated ion channels, such as channelrhodopsins, we can photostimulate genetically-defined populations of neurons. Likewise, genetically-encoded fluorescent sensors, such as Clomeleon, allow us to detect the resulting responses in postsynaptic neurons. Together, these optogenetic technologies create tremendous opportunities for understanding how the brain works and for determining how brain circuitry goes awry during various neurological and psychiatric diseases. The questions we are addressing are: (1) What is the function of a specific brain circuit? and (2) What is the spatial organization of this circuit? We currently are focusing on circuits in the cerebellum, somatosensory cortex, claustrum, hippocampus, and thalamus.

In these projects, our lab employs a wide range of techniques including electrophysiology, molecular biology, optical microscopy, computational approaches, and optogenetics.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Aung, Tin *MBBS(S'pore), FRCS(Ed), FRCOphth(UK), MMed(Ophth), FAMS, PhD(Lond)*

Academic Vice Chair (Research), SingHealth-Duke-NUS Ophthalmology and Visual Sciences Academic Clinical Programme

Joint Professor, Duke-NUS Medical School

Executive Director, Singapore Eye Research Institute

Deputy Medical Director (Research), Singapore National Eye Centre

Senior Consultant and Head, Glaucoma Dept, Singapore National Eye Centre

Professor, Dept of Ophthalmology, Yong Loo Lin School of Medicine, National University of Singapore



Contact: -

Email: aung.tin@singhealth.com.sg

Website: -

Research Summary

Professor Aung is Director of the Singapore Eye Research Institute, with his main research interests being angle closure glaucoma and the molecular genetics of eye diseases. With >350 publications, Prof Aung has been awarded >US\$15 million in competitive research grant funding. He has received numerous awards including the Singapore Translational Research (STaR) Investigator Award in 2014, the NMRC-Clinician Scientist Awards in 2005 and 2008, the President's Science Award in 2009, the Nakajima (2007) and De Campo Awards (2013) from the Asia Pacific Academy of Ophthalmology and the Alcon Research Institute Award in 2013.

Prof Aung is a member of the Editorial Boards of *Ophthalmology*, *Journal of Glaucoma*, *Eye*, *Graefe's Archive for Clinical and Experimental Ophthalmology*, and 6 other journals. He also serves as a member of the Board of Governors of the World Glaucoma Association and a Board member of the Asia-Pacific Glaucoma Society and the Asian Angle Closure Glaucoma Club.

Past and Current Duke-NUS MD Research Students

Foo Li Lian (Class of 2012)

He Yingke (Class of 2013)

Wei Xin (Class of 2014)

Png Ziyun Owen (Class of 2016)

Student Publications

1. **Foo LL**, Nongpiur ME, Allen JC, Perera SA, Friedman DS, He M, Cheng CY, Wong TY, Aung T. Determinants of angle width in Chinese Singaporeans. *Ophthalmology*. 2012 Feb;119(2):278-82.
2. **Foo LL**, Perera SA, Cheung CY, Allen JC, Zheng Y, Loon SC, Wong TY, Aung T. Comparison of scanning laser ophthalmoscopy and high-definition optical coherence tomography measurements of optic disc parameters. *Br J Ophthalmol*. 2012 Apr;96(4):576-80.
3. Sng CC, **Foo LL**, Cheng CY, Allen JC Jr, He M, Krishnaswamy G, Nongpiur ME, Friedman DS, Wong TY, Aung T. Determinants of Anterior Chamber Depth: The Singapore Chinese Eye Study. *Ophthalmology*. 2012 Jun;119(6):1143-50.
4. Zheng C, Guzman CP, Cheung CY, **He Y**, Friedman DS, Ong SH, Narayanaswamy AK, Chew PT, Perera SA, Aung T. Analysis of Anterior Segment Dynamics Using Anterior Segment Optical Coherence Tomography Before and After Laser Peripheral Iridotomy. *JAMA Ophthalmol*. 2013 Jan;131(1):44-9.
5. Nongpiur ME, **Wei X**, Xu L, Perera SA, Wu RY, Zheng Y, Li Y, Wang YX, Cheng CY, Jonas JB, Wong TY, Vithana EN, Aung T, Khor CC. Lack of Association Between PACG Susceptibility Loci And the Ocular Biometric Parameters - Anterior Chamber Depth and Axial Length. *Invest Ophthalmol Vis Sci*. 2013 Aug 27;54(8):5824-8.
6. **Wei X**, Nongpiur ME, de Leon MS, Baskaran M, Perera SA, How AC, Vithana EN, Khor CC, Aung T. Genotype-phenotype correlation analysis for three primary angle closure glaucoma-associated genetic polymorphisms. *Invest Ophthalmol Vis Sci*. 2014 Feb 24;55(2):1143-8.
7. **He Y**, Baskaran M, Narayanaswamy AK, Sakata LM, Wu R, Liu D, Nongpiur ME, He M, Friedman DS, Aung T. Changes in anterior segment dimensions over 4 years in a cohort of Singaporean subjects with open angles. *Br J Ophthalmol*. 2015 Feb 13. pii: bjophthalmol-2014-305816. doi: 10.1136/bjophthalmol-2014-305816.
8. Girard MJ, Tun TA, Husain R, Acharyya S, Haaland BA, **Wei X**, Mari JM, Perera SA, Baskaran M, Aung T, Strouthidis NG. Lamina cribrosa visibility using optical coherence tomography: comparison of devices and effects of image enhancement techniques. *Invest Ophthalmol Vis Sci*. 2015 Jan 15;56(2):865-74. doi: 10.1167/iov.14-14903.

Barathi, Veluchamy A. *PhD*

Adjunct Assistant Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Senior Research Scientist and Head, Ocular Disease Model Research Platform, Singapore Eye Research Institute

Adjunct Assistant Professor, Department of Ophthalmology, Yong Loo Lin School of Medicine, National University of Singapore

Contact: -

Email: amutha.b.veluchamy@seri.com.sg

Website: ResearchGate Profile



Research Summary

- Animal models of Ocular Diseases and Eye growth patterns
- Myopia, Glaucoma, Diabetic Retinopathy and AMD
- Retina and scleral biology in biochemistry, molecular and pharmacological aspect
- Molecular characterization of anti-muscarinic therapy for myopia using specific muscarinic receptor knockout mouse model
- The investigation of transglutaminase-2 function in the development of experimental myopia in mouse
- Rabbit model of corneal wound healing

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Bertoletti, Antonio MD

Professor, Programme in Emerging Infectious Diseases, Duke-NUS Medical School

Principal Investigator, Singapore Institute for Clinical Sciences, A*STAR

Contact: 6601 3574

Email: antonio@duke-nus.edu.sg

Website: Bertoletti Lab



Research Summary

Information related to the research and lab composition can be found at www.bertolettilab.com.

Briefly: Hepatitis B virus (HBV) infection is a preferential "Asian affair"; of the 350 million people suffering from chronic HBV infection worldwide, approximately 75% are in Asia. Research in my laboratory focuses on understanding the role of T cells in HBV pathogenesis and on developing immune therapeutic strategies for treating chronic HBV infection and HBV related HCC. Different methodological approaches (high dimensional flow cytometry, gene expression profile, laser microdissection) are utilized to analyze the HBV-specific T cell repertoire and the function of HBV-specific CD8 T cells in different clinical conditions. We are particularly interested to redefine the function of T cells in the liver environment and understand the molecular mechanisms responsible for T cell exhaustion. In addition, the laboratory is actively developing strategies to restore HBV-specific immunity in chronic HBV patients or to increase the bioavailability of cytokines/drugs into infected hepatocytes. Selection of virus-specific CD8 T cells from patients allows isolation of their T cell receptors that are then used to engineer TCR-redirected T cells for T cell immunotherapy.

Past and Current Duke-NUS MD Research Students

Karen Nadua (Class of 2011)

Lin Huixin Sarah (Class of 2013)

Alfonso Tan Garcia (Class of 2014)

Student Publications

1. Rivino L, Kumaran EA, Jovanovic V, **Nadua K**, Teo EW, Pang SW, Teo GH, Gan VC, Lye DC, Leo YS, Hanson BJ, Smith KG, Bertoletti A, Kemeny DM, MacAry PA. Differential targeting of viral components by CD4+ versus CD8+ T lymphocytes in dengue virus infection. *J Virol.* 2013 Mar;87(5):2693-706.
2. Chang CX, Tan AT, Or MY, Toh KY, Lim PY, Chia AS, Froesig TM, **Nadua KD**, Oh HL, Leong HN, Hadrup SR, Gehring AJ, Tan YJ, Bertoletti A, Grotenbreg GM. Conditional ligands for Asian HLA variants facilitate the definition of CD8+ T-cell responses in acute and chronic viral diseases. *Eur J Immunol.* 2013 Apr;43(4):1109-20.
3. Nasirah Banu, Adeline Chia, Zi Zong Ho, **Alfonso Tan Garcia**, Komathi Paravasivam, Gijsbert M. Grotenbreg, Antonio Bertoletti & Adam J. Gehrin Building and optimizing a virus-specific T cell receptor library for targeted immunotherapy in viral infections. *Sci Rep.* 2014;4:4166. doi:10.1038/srep04166.

Beuerman, Roger W. *PhD*

Adjunct Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Senior Scientific Director, Singapore Eye Research Institute

Adjunct Professor, Department of Ophthalmology, Yong Loo Lin School of Medicine, National University of Singapore

Adjunct Professor, School of Chemical and Biomedical Engineering, Nanyang Technological University



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Website: [ResearchGate Profile](#)

Research Summary

Development of novel antimicrobials for use in ophthalmology, proteomic studies revealing biomarkers of eye disease, and myopia.

Past and Current Duke-NUS MD Research Students

Soon Chian Myau (Class of 2012)

Student Publications

NA

Bian, Jinsong *MBBS, PhD*

Associate Professor, Department of Pharmacology, Yong Loo Lin School of Medicine,
National University of Singapore

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Website: -



Research Summary

Dr Bian conducts basic and translational research with a focus on identifying new therapeutic targets for treatment of cardiovascular diseases. His research interests include the biological functions of endogenous biological gases (e.g. H₂S and NO) and molecular regulation of HERG K⁺ channels and Na⁺/K⁺ ATPase. Specifically, he is interested in studying the cell signal transduction pathways responsible for the cardioprotection induced by ischemia or pharmacological pre- or post-conditioning and identifying the involvement of new endogenous mediators, triggers and protein kinases. Regulation of ion channel function plays a pivotal role in cardiac myocyte excitability. Hormones and endogenous mediators are involved in determining channel responses to changing cardiovascular demands. By using state-of-the-art techniques, Dr. Bian also investigate how hormones regulate HERG potassium channel expression, trafficking and function in the physiological and pathological situations. Dr. Bian has received over S\$3 M funding support and published over 40 papers in the leading journals in the past five years.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Casey, Patrick J. *PhD*

Senior Vice Dean, Research, Duke-NUS Medical School

Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

James B. Duke Professor of Pharmacology and Cancer Biology, Duke University Medical Center

Professor of Biochemistry, Duke University Medical Center

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Website: [Google Scholar Profile](#)



Research Summary

My lab focuses on the area of transmembrane signaling mediated through guanine nucleotide-binding regulatory proteins (G proteins). Many of these signaling pathways are involved in control of cell growth. There are two major areas of research ongoing in the lab. The first is the covalent modification of G proteins by isoprenoid lipids via a process termed prenylation, and in particular the impact of the processing on Ras family G proteins. Most of this work is now done in collaboration with the laboratory of Asst. Professor Mei Wang.

The second general area of research involves identification of the signaling pathways controlled by specific types of G proteins. We have linked members of one subfamily of G proteins, termed G12 proteins, to cellular processes of adhesion and migration via cell-surface cadherins and the Rho GTPase, and have obtained evidence that upregulation of expression of G12 proteins is important in metastatic progression of several types of cancer. Our current research focuses on determining the mechanism of this upregulation of G12 expression during cancer progression and in identify the signaling pathways that contribute to the ability of these proteins to drive aberrant cell growth and metastatic invasion.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Chacko, Ann-Marie *PhD*

Assistant Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Head, Laboratory for Translational and Molecular Imaging (LTMI) (a Duke-NUS core facility)

Adjunct Assistant Professor, School of Materials Science and Engineering, Nanyang Technological University

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Website:

<https://www.duke-nus.edu.sg/cscb/content/ann-marie-chacko>

<https://www.duke-nus.edu.sg/research/research-facilities/ltmi>

<https://scholar.google.com/citations?user=r8GwC00AAAAJ&hl=en>



Research Summary

As an Assistant Professor in the Duke-NUS Programme in Cancer and Stem Cell Biology, and Head of the Duke-NUS Laboratory for Translational and Molecular Imaging (LTMI), Prof. Chacko's goals are to advance state-of-the-art small animal imaging platforms for translational applications. A major thrust of LTMI is to develop new, and apply existing in vivo molecular imaging agents to study cancer biology, infectious disease, and brain and immune function, with an Asian disease-centric focus. LTMI offers PET/SPECT and ultra-high resolution CT, bioluminescence, and fluorescence imaging modalities, complemented with in vitro/ex vivo services including cell-based assays, biodistribution, and dosimetry. Dr. Chacko also guides companion radiochemistry and radiolabeling services made available in-house and in nearby GMP facilities. LTMI functions both as a core facility for Duke-NUS researchers and as a hub for emerging imaging research and technology development across Singapore, accessible to the broader research community including other academic institutes and industry groups through contract work and collaborations.

Prof. Chacko has more than 15 years of experience in translational imaging research. Her independent research program at Duke-NUS is dedicated to the development and preclinical characterization of molecularly-targeted systems as diagnostics and/or therapeutics. These systems include small molecules, peptides, proteins, and nanomaterials, with a particular focus in cancer, inflammation, and infectious disease. She is the author of 24 scientific publications including original research and review articles, with an additional 20 peer-reviewed publications in conference proceedings. Asst. Prof. Chacko is committed to educating a new generation of translational scientists through mentorship of graduate and medical students. She also currently supervises clinician-scientists from SGH Medical Oncology, Infectious Disease, and Nuclear Medicine Departments. Asst. Prof. Chacko has experience teaching undergraduate and graduate level coursework, as well as residency fellows on subjects ranging from Organic and General Chemistry, Biochemistry Metabolism to CNS Drug Delivery and Nuclear and Optical Molecular Imaging. She will continue to contribute to the educational and research development of junior scientists wherever possible.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

Chacko AM*, Watanabe S, Herr KJ, Kalimuddin S, Serrano RMF, Ong, J, Tham JY, Reolo M, Chenug YB, Low, JGH, Vasudevan SG. ¹⁸F-FDG as an Inflammation Biomarker for Imaging Dengue Virus Infection and Treatment Response. *JCI Insight* **2017** (*Corresponding author)

Chan, Angelique *PhD*

Associate Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

Associate Professor, Department of Sociology, Faculty of Arts and Social Sciences, National University of Singapore

Director, Tsao Foundation Ageing Research Initiative, Department of Sociology, Faculty of Arts and Social Sciences, National University of Singapore

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Website: [ResearchGate Profile](#)



Research Summary

- Aging and Demography
- Program impact evaluation
- Health of older persons

Past and Current Duke-NUS MD Research Students

Pakiam Jillian Ann (Class of 2015)

Jeffrey Siow Yong Ming (Class of 2017; Co-mentor)

Student Publications

NA

Chan, Derrick Wei-Shih *BMBS (UK), B Med Sci (UK), MRCPCH (UK), MCI, CSCN*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant and Head, Department of Paediatrics (Neurology Service), KK Women's and Children's Hospital

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Website: -



Research Summary

Dr Chan conducts clinical research on children with epilepsy with a focus on epidemiology, clinical presentation and semiology, neurophysiology and therapeutics. He also has an interest in biomechanics and the role of technology in seizure monitoring. His recent work extends the epidemiological data on paediatric epilepsy in Singapore and computer vision in seizure detection. He is working to develop the role of computer vision in epilepsy, anticonvulsant dosing regimens and developing educational materials in teaching of caregivers of children with epilepsy.

Past and Current Duke-NUS MD Research Students

Huang Junjie Chester (Class of 2015)

Maya Nakamura (Class of 2016)

Sanbhnani Sheru (Class of 2018)

Aditya SUBRAMANIAM (Class of 2020; Co-mentor)

Student Publications

NA

Chan, Jerry Kok Yen *MB, BCh, BaO (Hons), MA, MRCOG(UK), FRCOG(UK), PhD, FAMS*



Associate Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Senior Consultant, Department of Reproductive Medicine, KK Women's and Children's Hospital

Research Director, KK Research Centre

Adjunct Associate Professor, Principal Investigator - Experimental Fetal Medicine Group, Yong Loo Lin School of Medicine, National University of Singapore

Honorary Associate Professor, University of Queensland Centre for Clinical Research, University of Queensland

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Website: [Google Scholar Profile](#)

Research Summary

Dr Chan is a Clinician-Scientist working in the field of Reproductive Medicine encompassing a broad area of research. His laboratory focuses on the discovery and characterization of perinatal stem cells, and developing them for both fetal and post-natal transplantation strategies. His lab is also developing a stem cell model for the study of endometriosis in the field of reproductive medicine. He is currently the Research Director at KK Women's and Children's Hospital, and have mentored 15 PhD students, 5 post-doctoral fellows, 16 other bachelor degree and research attachment students, amassing a total of 102 peer reviewed journal papers, 9 book chapters, 64 awards, 38 published abstracts and 5 patents.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Chan, Ling Ling *MBBS, FRCR, FAMS*

Adjunct Associate Professor, Programme in Neuroscience and Behavioural Disorders,
Duke-NUS Medical School

Senior Consultant, Department of Diagnostic Radiology, Singapore General Hospital

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Website: -



Research Summary

The main thrust of Dr Chan's research involves the application of advanced MRI and CT techniques, including MR spectroscopy and MRI diffusion tensor imaging to evaluate neurological diseases and their clinical progression. Two of her key projects include the use of MRI diffusion tensor imaging (DTI) and MR tractography to evaluate white matter tracts in patients with gait problems, and long term case control prospective DTI study to identify potential radiologic marker of clinical progression in Parkinson's disease.

Her group has previously demonstrated in a large, prospective, case control study that the FA value in the substantia nigra on DTI was lower in PD compared with healthy controls, and correlated inversely with the clinical severity of PD. They are currently conducting longitudinal studies to assess the clinical utility of serial FA measurements of the substantia nigra in objective quantification of disease progression and monitoring of the therapeutic response.

Past and Current Duke-NUS MD Research Students

Ng Kia Min (Class of 2014)

Tan Wen Qi (Class of 2015)

Samantha Tan Ying Ying (Class of 2019)

LUM Xian Jun, Nathaniel (Class of 2020; Co-mentor)

YONG Jun Jie Arthur (Class of 2020)

Student Publications

- Chan LL, **Ng KM**, Rumpel H, Fook-Chong S, Li HH, Tan EK. Transcallosal diffusion tensor abnormalities in predominant gait disorder parkinsonism. *Parkinsonism Relat Disord*. 2014 Jan;20(1):53-9.

Chay, Oh Moh *MBBS, M Med (Paeds), FAMS, FRCPCH (UK), FAMS*

Senior Consultant, Department of Paediatrics (Respiratory Medicine Service), KK Women's and Children's Hospital

Campus Director, Education, KK Women's and Children's Hospital

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Website: -



Research Summary

Research focus on respiratory disorder particularly on Childhood Asthma. Past research include clinical trials, respiratory infection and obstructive sleep apnoea.

Current has oversight of a database on Bronchial Asthma with about 4000 patients. My focus will be to leverage on the outcome of these patients to further enhance the care of children with high disease burden asthma and to better utilise limited resources.

Other research interest include environmental health issues and impact of post natal depression on wheezing .

Will be also focusing on educational research especially in area of inter professional education, interpersonal skill and communications

Past and Current Duke-NUS MD Research Students

Wang Hao (Class of 2014; Co-Mentor)

Ser Ping Han (Class of 2017)

Angela Frances Yap Hui Wen (Class of 2017; Co-mentor)

Ong Shu Zhen Alicia (Class of 2018)

Student Publications

NA

Cheah, Peh Yeap *PhD*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Scientist and Co- Director, Colorectal Cancer Research Laboratory, Department of Colorectal Surgery, Singapore General Hospital

Adjunct Associate Professor, Saw Swee Hock School of Public Health, National University of Singapore

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Website: Google Scholar Profile



Research Summary

Dr Cheah conducts translational research on colorectal cancer (CRC) with a focus on genomics. Her recent work has entailed the discovery of new tumor suppressors for *APC* mutation-negative familial CRC syndromes via high-density genotyping arrays; potential biomarkers for early-onset non-syndromic CRC patients as well as early stage CRC via genome-wide expression profiling. Her laboratory completed a genome-wide association study (GWAS) to search for susceptibility loci associated with differential response to environmental insults in Chinese sporadic colorectal carcinomas. Dr. Cheah has been a PI on over 10 NMRC//BMRC, SingHealth and Singapore Cancer Society grants, and she has authored over 40 papers and 3 book chapters.

Past and Current Duke-NUS MD Research Students

Tan Si Yun Melinda (Class of 2012)

Student Publications

NA

Chee, Michael *MBBS (S'pore), FRCP(UK), FAMS*

Director, Centre for Cognitive Neuroscience, Duke-NUS Medical School

Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

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Website: Google Scholar Profile / Cogneuro Lab



Research Summary

My team and I study human cognition in the context of sleep restriction and cognitive aging. We seek to further human cognitive performance and improve public health through understanding the neural and psychological basis of performance degradation in these settings. We exploit our knowledge of these mechanisms in meso-scale intervention studies. In the coming year we will have two limbs of research, one working with high school adolescents to improve their sleep habits and another on healthy elderly, characterizing sleep fragmentation and its contribution to accelerated cognitive decline. In both these age groups we will test specific interventions. These include creative ways of reallocating time use in the young and acoustic stimulation to boost slow wave sleep in the old. You will be part of a team with research skills ranging from sleep science to cognitive aging, functional brain imaging, EEG and statistical analysis of longitudinal epidemiological data.

Past and Current Duke-NUS MD Research Students

Ong Shi Wei (Class of 2014)

Student Publications

NA

Chen, William Wei Ning *PhD*

Professor, School of Chemical and Biomedical Engineering, Nanyang Technological University

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Website: -



Research Summary

Professor Chen's research is highly inter-disciplinary with a strong focus on cellular bioengineering platforms for pharmaceutical and environmental applications. His current research is in the area of metabolic and microbial engineering toward production of valuable chemicals including biofuels, as well as environmental engineering for resource recovery and sustainable food production. His research in converting food waste to high value food ingredients using microbial engineering was covered in an episode of Future Forward by Channel News Asia (Jan 2015), in which he also shared his views on sustainable food supply.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Chen, Yu Helen *M.D., MBBS, M Med (Psychiatry), Grad Dip (Dynamic Psychotherapy), FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant, Head, Department of Psychological Medicine, KK Women's and Children's Hospital

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Website: -



Research Summary

Dr Chen has a special interest in perinatal psychiatry and women's mental health. She conducts clinical research on peripartum patients with a focus on screening and epidemiology, as well as intervention outcomes. She has also collaborated with neuroscientists and obstetricians in examining the impact of maternal mental health on pregnancy outcomes, fetal and child development.

Past and Current Duke-NUS MD Research Students

Pavaani Thiagayson (Class of 2011; co-mentor)

Lim Muhammad Haikel Asyraf (Class of 2019)

Student Publications

1. **Thiagayson P**, Krishnasamy G, Sung S, Fung D, Allen J, Chen H. Prevalence of depression and anxiety in high-risk pregnancies. *Gen Hospital Psychiatry* 2012; 35(2):112-116

Cheng, Ching-Yu *MD, MPH, PhD*

Professor, SingHealth-Duke-NUS Ophthalmology and Visual Sciences Academic Clinical Programme (EYE ACP)

Senior Clinician Scientist, Singapore Eye Research Institute

Head, Ocular Epidemiology Research Group and Statistics Unit, Singapore Eye Research Institute

Clinician Scientist, Singapore National Eye Centre

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Website: [Google Scholar Profile](#)



Research Summary

A/Prof Cheng directs the Singapore Epidemiology of Eye Diseases (SEED) Program, a large multi-disciplinary research program focusing on epidemiology, imaging and genetics on eye diseases. The SEED Program has built up one of the largest epidemiological and genetic databases (n>10,000) for eye diseases in the world. He takes the leading role in several major international eye genetics consortia, such as the Genetics of AMD in Asians (GAMA) Consortium, International Glaucoma Genetics (IGGC) Consortium, Consortium for Refractive Error And Myopia (CREAM), and Cohorts for Heart and Aging Research in Genomic Epidemiology (CHARGE) - Eye Consortium. The collaborative work has led to several high-impact publications in leading genetic journals, including Nature Genetics and American Journal of Human Genetics. He is the PI of more than \$2.5 million in grant funding from the NMRC and A*STAR in Singapore and has authored >200 papers. He is an awardee of the prestigious NMRC Clinician Scientist Award.

Past and Current Duke-NUS MD Research Students

Chong Yong He (Class of 2017; Co-mentor)

YU Zijun (Class of 2020)

Low Kok Yao (Class of 2019; Co-mentor)

Student Publications

NA

Cheung, Carol Yim Lui *PhD*

Assistant Professor, Department of Ophthalmology & Visual Sciences, Faculty of Medicine, The Chinese University of Hong Kong

Research Scientist, Singapore Advanced Imaging Lab on Ocular Research (SAILOR), Singapore Eye Research Institute

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Website: ResearchGate Profile



Research Summary

Dr. Cheung is currently a Research Scientist with a focus on ocular imaging as a biological approach to study human diseases and population-based studies on eye diseases at the Singapore Eye Research Institute (SERI). Her main research interest is the development and application of advanced ocular imaging analysis which can impact on important translational clinical outcomes. Her recent work entails developing and validating new diagnostic modalities for prediction of eye and cardio-metabolic diseases using novel imaging techniques. Her research on ocular imaging may improve the understanding of early disease changes, and may allow the prediction, early detection and diagnosis of eye, cardiovascular and metabolic diseases via ocular imaging, leading to a better targeted and more effective screening, independent of conventional risk factors and current diagnostic modalities.

Past and Current Duke-NUS MD Research Students

James Goh Kang Hao (Class of 2016; Co-mentor)

Student Publications

NA

Cheung, Yin Bun *PhD*

Professor, Centre for Quantitative Medicine, Duke-NUS Medical School
Adjunct Professor of International Health, University of Tampere, Finland

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Website: blog.nus.edu.sg/cheungyb



Research Summary

Prof Cheung is a paediatric epidemiologist and biostatistician. He studies maternal and child health, statistical methodology in nutrition and infection research, and patient-reported outcomes. His recent work includes the studies of child growth and child development in Asian and African populations, statistical models for estimation of vaccine efficacy and immunogenicity, and quality of life in cancer patients. Prof Cheung has been a principal investigator on 5 NMRC grants, and has authored over 200 scientific publications.

Past and Current Duke-NUS MD Research Students

Swati Jain (Class of 2014)

Quek Jia Ling Jovina (Class of 2016)

Ho Xin Yi Cassandra (Class of 2017)

NG Chang Zhi Adrian (Class of 2020; Co-mentor)

Student Publications

1. Kuan WS, Ibrahim I, Leong BSH, **Jain S**, Lu Q, Cheung YB, Mahadevan M. Emergency department management of sepsis patients: A randomized Goal Oriented Non-Invasive Sepsis Trial (AGONIST). *Annals of Emergency Medicine*, 2015 Epub-ahead-of-print.

Chew, Fook Tim *PhD*

Associate Professor, Department of Biological Sciences, National University of Singapore
Vice Dean, Undergraduate Studies and Student Life, Faculty of Science, National University of Singapore

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Website: -



Research Summary

Our group is interested in understanding the underlying basis of allergic diseases. We are currently taking a large scale genetic epidemiological approach to uncover the potential pathways and interactions influencing the pathogenesis and development of these complex diseases. This includes large-scale genome wide association studies, functional candidate gene evaluations, gene-gene (epistasis) and gene-environment studies.

Candidates involved in this work will be exposed to large scale cross sectional epidemiological studies, followed by clinical and laboratory based evaluation of some of the underlying candidate genes in relation to disease phenotypes and presentations. The current focus is to further characterize the potential influence of gene-splicing, large scale methylation, miRNA influence as well as differential expression of the candidate genes as influenced by the allele specific backgrounds of individuals affected by the disease of interest.

Past and Current Duke-NUS MD Research Students

Rachel Fok Yu Ting (Class of 2012)

Student Publications

NA

Chew, Kelvin Tai Loon *MBBCh (Ireland), MSpMed (Australia)*

Director and Senior Consultant, Changi Sports Medicine Centre, Changi General Hospital
Senior Consultant, Singapore Sports Medicine Centre, Novena Medical Centre
Clinical Lecturer, Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore
Specialist Physician Faculty, SingHealth Family Medicine Residency



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Website: -

Research Summary

Dr Chew's areas of research specialization in Sports Medicine are: sports injury biomechanics, musculoskeletal diagnostics with special interest in ultrasound diagnostics, and efficacy of clinical therapeutics in musculoskeletal medicine. Current research projects at Changi Sports Medicine Centre that medical students can be involved in relate to the ultrasound evaluation of tendon disorders in athletes as well as research on event medical coverage such as Formula 1 or mixed martial arts international competition injury prevention and injury rates.

Past and Current Duke-NUS MD Research Students

Tao Chan Eric (Class of 2016)
Muhamad Zulhakim Bin Aman (Class of 2018)

Student Publications

NA

Chew, Min Hoe

Adjunct Associate Professor, Duke-NUS Medical School

Head and Senior Consultant, Department of Surgery, Sengkang General Hospital

Director, Operating Theatre Management Unit, Sengkang General Hospital

Senior Consultant, Colorectal Surgery, Singapore General Hospital

Adjunct Assistant Professor, Yong Loo Lin School of Medicine, National University of Singapore

Contact: 6930 5333

Email: chew.min.hoe@singhealth.com.sg

Website: https://scholar.google.com.sg/citation?hl=en&user=_tQc6VkAAAJ



Research Summary

Dr Chew has published over 70 articles in peer-reviewed journals and book chapters. He is currently leading and co-investigating various projects such as Programme for Enhanced Elderly Recovery at Sengkang Hospital, Efficacy and Safety of a Preoperative, Single-Dose Intravenous Iron Formulation to Reduce Perioperative Blood Transfusion Requirement and Postsurgical Complications in Patients with Anaemia, Predicting Postoperative Morbidity in adult elective surgical patients using CARES surgical risk prediction model, Evaluation of Quality of Life (QOL) Outcomes in management of Advanced Pelvic Cancer –a prospective study and Synergistic genetic lesions in diffuse large B-cell lymphoma tumour tissue and peripheral blood.

Dr Chew interests of research are Colorectal Cancer Surgical Advances and Techniques, Advanced Pelvic Surgery and Hereditary Colorectal Cancer. He does laparoscopic colorectal surgery, pelvic exenterations and is currently a Co-director of Molecular Lab involved in various germline and somatic mutation studies for colorectal cancer. He continues to be active in clinical and translational research projects.

Dr Chew had recently received the Distinguished Young Leader and Star Quality Service awards under SingHealth and Singapore Health Quality Service Awards 2018 (Silver) Category under Sengkang Health.

Past and Current Duke-NUS MD Research Students

Tan Si Yun Melinda (Class of 2012)

Student Publications

Chew MH; Koh PK; **Tan M**; Lim KH; C Loi; Tang CL. Mismatch repair deficiency screening via immunohistochemical staining in young Asians with colorectal cancers. World Journal of Surgery 2013; 37(10):2468-2757 (Article; Published in Print)

Chew, Sophia Tsong Huey *MBBS, MMed (Anaes), FANZCA, FAMS*

Adjunct Associate Professor, Programme in Cardiovascular and Metabolic Disorders, Duke-NUS Medical School

Senior Consultant, Department of Anaesthesiology, Singapore General Hospital

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Website: ResearchGate Profile



Research Summary

Ethnicity and acute kidney injury after cardiac surgery in the Asian population, genetic and biochemical markers of injury and long term risk of ESRD.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Chew, Suk Peng Valerie *PhD*

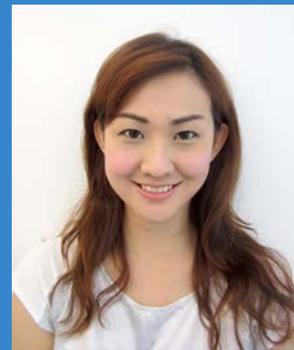
Assistant Professor, Duke-NUS Medical School

Senior Research Scientist, SingHealth Translational Immunology and Inflammation Centre (STIIC)

Contact: 6576 7183

Email: valerie.chew.s.p@singhealth.com.sg

Website: [ResearchGate Profile](#)



Research Summary

Dr Chew is the key researcher leading the project on understanding the impact of tumor immune-microenvironment on clinical outcome in patients with hepatocellular carcinoma (HCC). She led the discovery of a unique 14-immune genes signature in HCC which could accurately predict patient survival (Chew et.al. *Gut* 2012). The work has also been extended to testing the key immune modulators: toll like receptor-3 in preclinical HCC models (Chew et.al. *JNCI* 2012, Ho et.al. *Oncotarget* 2015). Her current work in STIIC extended to multidimensional deep immunophenotyping and immunomonitoring of HCC microenvironment using several cutting edge multiplex technologies such as Time of Flight Mass Cytometry (CyTOF) and next-generation sequencing. This powerful approach led to the identification of multiple immune subsets with clinical relevance.

Her work has gained recognition with multiple grant awards and publications in high impact journals including *Gut*, *JNCI* and *Nature Genetics*.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Chia, John Whay Kuang *MBBS, MRCP (UK), FAMS* *(Medical Oncology)*

Senior Consultant, Department of Medical Oncology, National Cancer Centre Singapore
Adjunct Associate Professor, Department of Medicine, National University of Singapore

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Email: john.chia.w.k@singhealth.com.sg

Website: -



Research Summary

Dr Chia's major interest has been to advance the field of cancer therapeutics through clinical trials and he is actively involved in numerous Phase I, II and III investigator-initiated clinical studies. He holds several clinical research grants and has published research papers in the fields of inflammation, immunotherapy and gynecological cancers.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Chia, Shi-Lu *MBBS, DFDC (CAW), FRCS (Surg), FRCS (Ortho & Trauma), DIC, PhD*

Adjunct Associate Professor, Duke-NUS Medical School

Deputy Head (Research) and Senior Consultant, Department of Orthopaedic Surgery, Singapore General Hospital

Clinical Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

Contact: -

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Website: -



Research Summary

His current research interests include arthritis, cartilage biology, cartilage tissue engineering and artificial joint design.

Past and Current Duke-NUS MD Research Students

Zhou Zhihong (Class of 2013)

Zhu Meng (Class of 2015)

Cheng Sheng Da, Jowell (Class of 2019)

Student Publications

1. Chen JY, Rikhranj IS, **Zhou Z**, Tay DK, Chin PL, Chia SL, Lo NN, Yeo SJ. Can tranexamic acid and hydrogen peroxide reduce blood loss in cemented total knee arthroplasty? *Arch Orthop Trauma Surg*. 2014 Jul;134(7):997-1002.
2. **Zhou Z**, Yew KS, Arul E, Chin PL, Tay KJ, Lo NN, Chia SL, Yeo SJ. Recovery in knee range of motion reaches a plateau by 12 months after total knee arthroplasty. *Knee Surg Sports Traumatol Arthrosc*. 2014 Sep 2. [Epub ahead of print]

Chin, Calvin *MD, MCI, PhD*

Assistant Professor, Duke-NUS Medical School
Consultant, National Heart Centre Singapore

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Website: -



Research Summary

My research focuses on understanding the mechanisms driving left ventricular hypertrophy and myocardial fibrosis. This involves the use of cardiovascular imaging techniques, biochemical markers and genetic profiling. Recently, we had examined the mechanistic and prognostic roles of high sensitivity plasma cardiac troponin I and 12-lead electrocardiograms in patients with calcific aortic stenosis. My current work focuses on patients with hypertensive heart disease. The ultimate goal is to identify novel biomarkers of cardiac decompensation for targeted therapies, before heart failure ensues. Students involved in my research will be exposed to cutting-edge imaging and analysis techniques.

Past and Current Duke-NUS MD Research Students

Cai Jiashen (Class of 2017; Co-Mentor)

Kwan Woo Paik (Class of 2018)

Tan Jun Jie, Aaron (Class of 2019)

Vanessa Lim Zi Kun (Class of 2019; Co-mentor)

Student Publications

NA

Chiong, Edmund

Associate Professor, Yong Loo Lin School of Medicine, National University of Singapore

Senior Consultant, National University Health System

Associate Chairman, Medical Board (Research), National University Hospital

Contact: 6772 5642

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Website: https://www.researchgate.net/researcher/11708814_Edmund_Chiong



Research Summary

My principal research activities are in the field of bladder cancer, a disease that is the 10th most common cancer in men in Singapore and the 5th most common worldwide, affecting more than 800,000 people. Intravesical therapies (especially BCG) for superficial bladder cancer represent one of the most successful achievements in the treatment of cancer and are at the forefront of research in immunotherapy for solid organ cancers. I am one of the investigators in the Bladder Cancer Workgroup, Dept of Surgery, NUS, which studies the mechanisms of action of Bacillus Calmette-Guérin (BCG) therapy, gene therapy and other therapies for bladder cancer. I am particularly interested in investigating the genetic factors that influence clinical response to BCG therapy.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Choo, Su Pin *MBBS, MRCP(UK), FAMS*

Senior Consultant and Chief of Gastrointestinal Oncology, Division of Medical Oncology, National Cancer Centre Singapore

Deputy Head, Clinical Trials and Epidemiological Sciences, National Cancer Centre Singapore

Adjunct Principal Investigator, SingHealth Investigational Medicine Unit

Adjunct Associate Professor, Yong Loo Lin School of Medicine, National University of Singapore



Contact: 6436 8197

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Website: [ResearchGate Profile](#)

Research Summary

My main area of clinical specialization is in gastrointestinal cancers which span solid tumours from the oesophagus, stomach, intestines to anus and from the hepatobiliary system. I am actively involved in running clinical trials for these cancers with particular interest in hepatocellular carcinoma and gastric cancers. Some of my trials are investigator-initiated studies that were borne from pre-clinical work done by my collaborators. I also have a special interest in Phase I trials combining novel therapies in all cancers and I run the Early Clinical Research Unit in National Cancer Centre Singapore (NCCS). I also oversee the gastrointestinal clinical database which collects data on colorectal, gastric and pancreatic cancer patients seen in NCCS.

Past and Current Duke-NUS MD Research Students

Ng Rui Xin (Class of 2019)

Student Publications

NA

Chow, Pierce *MBBS, MMed (Surg), FRCSE, FAMS (Gen Surg), PhD*

Professor, Duke-NUS Medical School

Senior Consultant Surgeon, Surgical Oncology, National Cancer Centre Singapore

Senior Consultant Surgeon, HPB and Transplant Surgery, Singapore General Hospital

Senior Clinician Scientist, National Medical Research Council, Singapore

Associate Faculty, Genome Institute of Singapore



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Website: ResearchGate Profile

Research Summary

Prof Chow leads the **Program in Clinical and Translational Liver Research** at the National Cancer Center Centre and is Protocol Chair of the **Asia-Pacific Hepatocellular Carcinoma Trials Group**. His research interests are in hepatocellular carcinoma, steato-hepatitis and novel therapeutic platforms.

1. Clinical Trials and outcomes research in hepato-pancreato-biliary cancers
2. The genomics and immunology of hepatocellular carcinoma and applications to personalized medicine
3. Brachytherapy and novel delivery platforms in solid organ cancers.
4. Patient tumour-explant xenografts and novel models in experimental oncology.
5. Metabolic liver disease and the microbiome

Past and Current Duke-NUS MD Research Students

Chia Ghim Song (Class of 2011)

Lim Miao Shan (Class of 2011)

Lim Kheng Choon (Class of 2011)

Andrew Khor Yu Keat (Class of 2014)

Zhu Guili (Class of 2014)

Chia Yun Ling Caroline (Class of 2016)

Chin Fu Wen, Kenneth (Class of 2016; Co-Mentor)

Yang Jiajing Edwin (Class of 2016; Co-Mentor)

Goh Kian Leong (Class of 2018; Co-mentor)

Eshani Nastassia Mathew (Class of 2018)

Student Publications

1. **Lim KC**, Chow PK, Allen JC, **Chia GS**, **Lim M**, Cheow PC, Chung AY, Ooi LL, Tan SB. Microvascular invasion is a better predictor of tumor recurrence and overall survival following surgical resection for hepatocellular carcinoma compared to the Milan criteria. *Ann Surg*. 2011 Jul;254(1):108-13.
2. **Lim, K. C.**, Chow, P. K., Allen, J. C., Siddiqui, F. J., Chan, E. S., and Tan, S. B. (2012) Systematic review of outcomes of liver resection for early hepatocellular carcinoma within the Milan criteria, *British Journal of Surgery* 99, 1622-1629.
3. **Lim KC**, Wang VW, Siddiqui FJ, Shi L, Chan ES, Oh HC, Tan SB, Chow PK. Cost-effectiveness analysis of liver resection versus transplantation for early hepatocellular carcinoma within the Milan criteria. *Hepatology*. 2015 Jan;61(1):227-37.
4. **Khor, A.-K.**, Toh, Y., Allen, J., Ng, D.-E., Kao, Y.-H., **Zhu, G.**, Choo, S.-P., Lo, R.-G., Tay, K.-H., Teo, J.-Y., Goh, B.-P., Burgmans, M., Irani, F., Goh, A.-W., and Chow, P.-H. (2014) Survival and pattern of tumor progression with yttrium-90 microsphere radioembolization in predominantly hepatitis B Asian patients with hepatocellular carcinoma, *Hepatology International* 8, 395-404.
5. Teo JY, Goh BK, Cheah FK, Allen JC, Lo RH, Ng DC, Goh AS, **Khor AY**, Sim HS, Ng JJ, Chow PK. Underlying liver disease influences volumetric changes in the spared hemiliver after selective internal radiation therapy with 90Y in patients with hepatocellular carcinoma. *J Dig Dis*. 2014 Aug;15(8):444-50.
6. Tong AK, Kao YS, Too CW, **Chin KF**, Ng DC, Chow PK. Yttrium-90 hepatic radioembolization: Clinical review and current techniques in interventional radiology and personalized dosimetry. *British Journal of Radiology* (in press).

Chow, Wan Cheng

Senior Consultant, Department of Gastroenterology and Hepatology, Singapore General Hospital

Chairman, Division of Medicine, Singapore General Hospital

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Website: -



Research Summary

Various clinical trials in treatment of chronic hepatitis B and C, including phase 1 trials in therapeutic vaccines.

Past and Current Duke-NUS MD Research Students

Lin Huixin Sarah (Class of 2013; Co-Mentor)
Soh Yi Min, Benjy (Class of 2017)

CHOOI Jing Yew (Class of 2020; Co-mentor)

Student Publications

NA

Chowbay, Balram *PhD*

Adjunct Professor, Duke-NUS Medical School

Director, SingHealth Clinical Pharmacology Laboratory, Academia

Principal Clinical Pharmacologist, Laboratory of Clinical Pharmacology, National Cancer Centre Singapore

Adjunct Professor, School of Chemical and Biological Engineering, Nanyang Technological University



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Website: [Google Scholar Profile](#)

Research Summary

My research areas are in the applications of pharmacokinetics (PK) and pharmacodynamics (PD) principles in the optimisation of drug dosages as well as application of pharmacogenetic tools to explain variabilities in the PK/PD of therapeutic agents. I have a special interest in studying the pharmacogenetics of genes involved in expressions of drug metabolising enzymes, drug transporters and drug targets in different Asian ethnic groups.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Chua, Terrance Siang Jin *MBBS, MRCP(UK), M Med (Int Med), FRCP(Lond), FAMS, FRCPE, FACC(USA)*

Adjunct Professor, Duke-NUS Medical School

Academic Chair, SingHealth Duke-NUS Cardiovascular Sciences Academic Clinical Programme

Medical Director and Senior Consultant, Department of Cardiology, National Heart Centre Singapore

Deputy Group Director, Medical, SingHealth



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Website: -

Research Summary

Dr Chua's main interests are in cardiac imaging, (particularly nuclear cardiology and cardiac CT), and the epidemiology of myocardial infarction and coronary artery disease. He is involved in supporting the work of the Singapore Cardiac Data Bank, a national database of major cardiac procedures and conditions (such as coronary angioplasty, bypass surgery, heart failure) in all public hospitals that has been collecting data since 2000.

Past and Current Duke-NUS MD Research Students

Ignasius Aditya Jappar (Class of 2012)

Rachel Ng Qiao Ming (Class of 2013)

Tay Yu Ling (Class of 2014)

Apurva Thanju (Class of 2014)

Tan Xian-li Olivia (Class of 2015)

Goh Jian Min, Jasmine (Class of 2016)

Tan Shih Jia, Janice (Class of 2016; Co-Mentor)

Francine Tan Chiu Lan (Class of 2017)

Student Publications

1. **Jappar IA**, Chua T, Htoo MM, Cheah FK, Allen JC, Tan SY. Diagnosis of anomalous origin and course of coronary arteries using non-contrast cardiac CT scan and detection features. *J Cardiovasc Comput Tomogr*. 2012 Sep-Oct;6(5):335-45.

Chuah, Charles *MB, ChB (UK), FRCP (Edin), MMed (Int Med), M.D. (London)*

Associate Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Senior Consultant, Department of Haematology, Singapore General Hospital

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

Director, Molecular Laboratory, Department of Haematology, SGH

Director, Myeloproliferative Disorders/Chronic Myeloid Leukaemia Programme, Department of Haematology, SGH

Director, Department of Clinical Research, Singapore General Hospital

Director, Junior Clinician-Scientist/Clinician Researcher Programme, SingHealth-Duke-NUS Medicine Academic Clinical Programme



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Website: -

Research Summary

Dr Chuah was awarded the National Medical Research Council Clinician Scientist Award in 2007 and 2010. He is currently holding research grants from A*STAR/BMRC and SingHealth Foundation and is a principal investigator in nineteen multi-centre clinical trials. He has authored or co-authored more than thirty six publications in peer-reviewed scientific journals including Nature, Nature Medicine, Nature Genetics, New England Journal of Medicine, PNAS, Blood, Leukemia and Journal of Clinical Oncology. Dr Chuah is a member of the Scientific Review Panel of the NMRC. He is in the editorial board for Annals Academy of Medicine, Singapore and is a reviewer for the Singapore Medical Journal, Cancer Letters, International Journal of Hematology, Leukemia, Leukemia Research and Annals of the Academy of Medicine, Singapore. His research interests include mechanisms of resistance and targeted therapy in chronic myeloid leukaemia.

Past and Current Duke-NUS MD Research Students

Cao Jinyi (Class of 2016)

Student Publications

NA

Coffman, Thomas M. *MD*

Dean, Duke-NUS Medical School

Professor, Programme in Cardiovascular and Metabolic Disorders, Duke-NUS Medical School

James R. Clapp Professor of Medicine, Duke University Medical Center

Director, Cardiovascular Research Center, Duke School of Medicine

Contact: 6601 1069

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Website: -



Research Summary

Diabetic nephropathy, the role of the kidney in hypertension, prostanoids as mediators of hypertension and kidney injury.

Past and Current Duke-NUS MD Research Students

Maeda Momoe (Class of 2014)

Student Publications

NA

Compton, Scott *PhD*

Associate Professor and Associate Dean, Office of Education, Duke-NUS Medical School

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Website: [Google Scholar Profile](#)



Research Summary

The overarching goal of my educational research agenda is to better understand how people learn, and to best apply what we know about learning in the context of medical education programs. I conduct studies that translate efficacious learning strategies identified by the psychological and cognitive neurosciences to the real-world classroom. I aim to dissect, probe, and test educational theories and assumptions to ensure that our fundamental educational frameworks are valid.

Some current or recent projects:

- Improving Sleep Behavior and Wellbeing in Medical Students
- The Learner as Question Writer
- Medical Student Wellbeing: Impact of Tolerance for Ambiguity

Past and Current Duke-NUS MD Research Students

Sanchez Daniel John Gutierrez (Class of 2016)

Wu Jiawei Sean (Class of 2017)

Student Publications

1. **Sanchez D**, Strauman TJ, Compton S. Impact of Student Perceptions of the Educational Program on Burnout in Medical School. Association of Medical Educators Europe annual meeting. (2017).
2. **Wu S**, Farquhar J, Compton S. Why do team-based learning educators use TBL? The Asia Pacific Scholar. In-Press. 2017.

Cook, Stuart A. *MBBS, MRCP, PhD*

Professor, Programme in Cardiovascular and Metabolic Disorders, Duke-NUS Medical School

Senior Consultant, National Heart Centre Singapore

Professor of Clinical and Molecular Cardiology, Imperial College

Associate Director and Genetics Theme Lead, Brompton and Harefield Biomedical Research Unit



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Website: -

Research Summary

My group, in collaboration with world-leading laboratories, has developed and applied unbiased, integrated systems genetics and genomics approaches combined with high-resolution cardiovascular phenotyping to identify new genes and mechanisms for cardiac hypertrophy and dysfunction. To date, my discovery-based research has been largely carried out in genetically tractable rat and mouse systems with translational to human tissues and cohorts as a central dogma, which has proved highly successful. In addition, the group has used genome-wide association (GWAS) in humans to identify new loci and genes for dilated cardiomyopathy (DCM), the commonest indication for heart transplantation.

With the maturation of next generation sequencing technologies I have developed dedicated informatics, databases and statistical genetics to uncover new insights into heart failure biology. These advances are enabling a greater emphasis on discovery and diagnostics-based research in humans that can now be performed in cohorts of patients with inherited cardiac diseases and ischemic heart failure and control subjects phenotyped using cardiac MRI that I have assembled. These cohorts will be interrogated using targeted resequencing, whole exome sequencing and whole genome sequencing in combination with conventional GWAS with bedside-to-bench translation for mechanistic studies. While these approaches are in their early stages we have already identified Titin as the commonest genetic cause of DCM, which increases the clinical diagnostic yield of DCM by up to 100%.

Past and Current Duke-NUS MD Research Students

Mervin Goh Feng Ji (Class of 2015)

Dypti Lulla (Class of 2016)

Cai Jiashen (Class of 2017)

Vanessa Lim Zi Kun (Class of 2019)

Student Publications

NA

De Silva, Deidre Anne *MBBS, MRCP(UK), FAMS* (Neurology)

Associate Professor, Duke-NUS Medical School

Director (Clinical Research/SGH), SingHealth Duke-NUS Neuroscience Academic Clinical Programme

Senior Consultant, Department of Neurology, National Neuroscience Institute

Clinical Tutor, National University of Singapore

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Website: -



Research Summary

Dr De Silva is a neurologist who conducts clinical and translational research in stroke. Her areas of research interests include the Asian pattern of stroke, intracranial large artery disease, small cerebral artery disease, acute reperfusion treatment, advanced stroke imaging, novel vascular risk factors such as aortic stiffening, and retinal microvascular changes in stroke. Dr De Silva has been awarded the 4 National Medical Research Council administered grants as Principal Investigator. She has first authored more than 60 peer-reviewed publications. She has supervised junior and associate consultants, clinical stroke fellows, neurology senior residents, internal medicine junior residents and medical students for research.

Past and Current Duke-NUS MD Research Students

Eunizar Omar (Class of 2011)

Chua Jia Hui (Class of 2013)

Melissa Tan Si Hui (Class of 2014)

Lim Shu Han (Class of 2017)

Ian Wang Huang (Class of 2017)

Tang Jing Ying, Kendra (Class of 2019)

G Shankari (Class of 2020)

Student Publications

1. Manzano JJ, **Omar E**, Wong MC, De Silva DA. Arterial stiffness and ischemic stroke subtypes. *Atherosclerosis*. 2011 Jul;217(1):72-3.
2. De Silva DA, Manzano JJ, Toh A, Woon FP, Liu EY, **Omar E**, Wong WX, Wong TY, Chen CP, Chang HM, Wong MC. Lower incidence of vascular events following small artery ischemic stroke. *Int J Stroke*. 2012 Jun;7(4):361-2.
3. De Silva DA, **Omar E**, Manzano JJ, Christensen S, Allen JC Jr, Bath PM, Chang HM, Wong MC, Chen CP. Comparison of small volume infarcts of lacunar and non-lacunar etiologies. *Int J Stroke*. 2013 Jul;8(5):E24-5.
4. **Tan MSh**, Ang ES, Ho SS, Ng SC, Talabucon L, Woon FP, De Silva DA. Wake-up Stroke and Onset-to-door Duration Delays: Potential Future Indications for Reperfusion Therapy. *Ann Acad Med Singapore*. 2014 Jan;43(1):11-4.

Devanand, Anantham *MBBS, MRCP (UK), AKC (Lond), FAMS*

Assistant Professor, Duke-NUS Medical School

Senior Consultant, Department of Respiratory and Critical Care Medicine, Singapore General Hospital

Associate Programme Director, SingHealth Internal Medicine Residency

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Website: -



Research Summary

Dr Devanand's main research interest is in diagnostic thoracic endoscopy. There are three major projects that are currently underway. An endoscopy database captures comprehensive data on all procedures to facilitate evaluation of diagnostic yield, complication rates, technical issues and patient satisfaction. Navigational bronchoscopy has been acquired through a HSDP grant to provide a 'GPS' system to help endoscopists locate peripheral lung lesions that are not visible in the bronchi. We hope to define the sensitivity of this technology. Duke-NUS has also provided support for a fibred confocal microscopy project. This technology provides in vivo cellular level imaging of the lung parenchyma and is being evaluated in a pilot project to map an atlas of interstitial lung disease. In addition, Dr Devanand is working with Allergy Center and the SGH COPD service on the acquisition of bronchial thermoplasty and bronchoscopic lung volume reduction respectively.

Past and Current Duke-NUS MD Research Students

Meng Peng (Class of 2016)

Liu Xiang (Class of 2017)

Cao Qi (Class of 2017; Co-mentor)

Lau Pui Kheng, Priscilla (Class of 2018; Co-mentor)

Choo Wen Rong, Randall (Class of 2019)

QUEK You Xing, Jonathan Caleb (Class of 2020)

Student Publications

NA

Dhanasekaran, Vijaykrishna *PhD*

Associate Professor, Programme in Emerging Infectious Diseases, Duke-NUS Medical School

Visiting Scientist, Department of Pathology, Singapore General Hospital, SingHealth

Visiting Scientist, World Health Organization Collaborating Centre for Reference and Research on Influenza, Melbourne, Australia



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Website: [Google Scholar Profile](#)

Research Summary

Our research lies in the intersection of biomedicine, epidemiology and evolutionary molecular sequence analysis to understand the factors that regulate the evolution and diversity of pathogens and pathogen communities. We especially focus on the integration of pathogen sequence data with clinical, epidemiological and immunological data that are routinely generated through large-scale disease surveillance of infectious pathogens using phylogeny (evolutionary tree)-based methods in order to improve disease control.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Fenwick, Eva *PhD*

Assistant Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

Assistant Professor, Singapore Eye Research Institute

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Website: <https://www.linkedin.com/in/eva-fenwick-9557b5111>



Research Summary

Dr Fenwick's research interests lie in health services research, epidemiology, and patient-centred outcomes in vision and diabetes; development of outcome measures using modern psychometric theory (Rasch analysis, item banking and computer adaptive testing); health literacy in diabetes and eyes; and vision and quality of life outcomes in aged care; qualitative methodology (focus groups, semi-structured interviews and cognitive interviewing); diet and physical activity in diabetes and diabetic eye diseases. Dr Fenwick is currently developing a series of item banks and computer adaptive testing systems for the major blinding eye conditions in Singapore. Dr Fenwick has been PI on several small grants in Australia and Singapore and Co-I on 4 large NMRC grants, and she has authored nearly 80 papers and 5 book chapters.

Past and Current Duke-NUS MD Research Students

LEE Jun Jie (Class of 2020)

Student Publications

NA

Finkelstein, Eric A. *PhD, MHA*

Executive Director, Lien Centre for Palliative Care, Duke-NUS Medical School

Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

Director, NIHA Research Programme, National University of Singapore

Contact: 6516 2338

Email: eric.finkelstein@duke-nus.edu.sg

Website: Google Scholar Profile



Research Summary

Eric A. Finkelstein, Ph.D., M.H.A. is the Professor of Health Services and Systems Research at the Duke-NUS Medical School and the Executive Center Director of the Lien Centre for Palliative Care. He also holds appointments at NUS School of Public Health and Duke University Global Health Institute. His research focuses on the economic causes and consequences of health behaviors, with a primary emphasis on the use of traditional and behavioral economic incentives to influence those behaviors in ways to improve the public's health. Recent research also focuses on studies to better understand the complicated decisions that revolve around end of life care. He has published over 150 manuscripts and 2 books in these areas, and also successfully commercialized an Obesity Cost Calculator for employers and insurers. Based on Google Scholar, he has an h-index of 45 and his publications have been cited over 13,000 times, including in the landmark Supreme Court decision upholding the U.S. Affordable Care Act (aka Obamacare). In 2015, he was selected by Thomson Reuters as one of the World's Most Influential Scientific Minds.

Past and Current Duke-NUS MD Research Students

Saideep Bose (Class of 2012)

Wang Hao (Class of 2014)

Chen Pin Yu, Petty (Class of 2015; Co-Mentor)

Andalib Hossain (Class of 2016)

Wu Hong King (Class of 2017)

CHIA May Fen, Yvonne (Class of 2017; Co-mentor)

Tan Gui Fang, Edlyn (Class of 2018; Co-mentor)

NG Guan Yee Dave (Class of 2020; Co-mentor)

Student Publications

1. Rahman F, **Bose S**, Linnan M, Rahman A, Mashreky S, Haaland B, Finkelstein E. Cost-effectiveness of an injury and drowning prevention program in low-and-middle-income countries. *Pediatrics*. 2012 Dec;130(6):e1621-8.
2. **Bose S**, Ang M, Mehta JS, Tan DT, Finkelstein E. Cost-effectiveness of Descemet's stripping endothelial keratoplasty versus penetrating keratoplasty. *Ophthalmology*. 2013 Mar;120(3):464-70.
3. **Chen P.Y.**, Finkelstein E.A., Ng M.J., Yap F., Yeo S.H., Rajadurai V.S., Chong Y.S., Gluckman, P.D., Saw S.M., Kwek Y.C., Tan K.H. Incremental Cost-effectiveness Analysis of Gestational Diabetes Mellitus Screening Strategies in Singapore. *Asia-Pacific Journal of Public Health*. 2015 [Epub ahead of print].

Fong, Kok Yong *MBBS (S'pore), M Med (Int Med), FAMS (Rheumatology), FRCP (Edin)*

Professor, Duke-NUS Medical School

Chairman, Medical Board, Singapore General Hospital

Senior Consultant, Department of Rheumatology and Immunology, Singapore General Hospital

Adjunct Professor, Yong Loo Lin School of Medicine, National University of Singapore



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Website: -

Research Summary

NA

Past and Current Duke-NUS MD Research Students

Tan Tze Chin (Class of 2011)

Huang Youyi (Class of 2016)

Student Publications

NA

Fung, Daniel Shuen Sheng *MBBS, MMed* (*Psychiatry*), *FAMS*

Adjunct Associate Professor, Programme in Neuroscience and Behavioural Disorders,
Duke NUS Medical School

Chairman, Medical Board, Institute of Mental Health

Senior Consultant, Department of Child and Adolescent Psychiatry, Institute of Mental Health

Adjunct Associate Professor, Yong Loo Lin School of Medicine, National University of Singapore

Adjunct Associate Professor, Lee Kong Chian School of Medicine, Nanyang Technological University



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Website: Google Scholar Profile

Research Summary

Dr Fung conducts clinical research on disruptive behaviour disorders (E.g. Attention Deficit Hyperactivity Disorder) and emotional disorders (E.g. Anxiety disorders). His recent work involves a randomized controlled trial of fatty acids supplementation and social skills training for children and adolescents with disruptive behaviour disorders. His current interests include serious games and new media interventions for psychiatric disorders in children and adolescents.

Past and Current Duke-NUS MD Research Students

Lim Wei Shyan (Class of 2012)

Pavaani Thiagayson (Class of 2013)

Kwok Li Ping Sharon (Class of 2015)

Lau Tsz Wing (Class of 2018)

Sim Xue Li, Samantha (Class of 2019)

Thanita Pilunthanakul (Class of 2019; Co-mentor)

Student Publications

1. **Thiagayson P**, Krishnaswamy G, Lim ML, Sung SC, Haley CL, Fung DS, Allen JC Jr, Chen H. Depression and anxiety in Singaporean high-risk pregnancies - prevalence and screening. *Gen Hosp Psychiatry*. 2013 Mar-Apr;35(2):112-6.

Gan, Yunn Hwen *PhD*

Associate Professor, Department of Biochemistry, Yong Loo Lin School of Medicine, National University of Singapore

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Website: ResearchGate Profile



Research Summary

Research in Dr Gan's laboratory focuses on host pathogen interactions, host susceptibility factors to infectious diseases and the immune responses to bacterial pathogens. The main pathogen under study is *Burkholderia pseudomallei*, a Gram-negative bacterium endemic in Singapore, rest of Southeast Asia and Northern Australia. The team is internationally recognized as one of the leaders in melioidosis research, having discovered various virulence pathways in the bacteria and established the susceptibility factors which predispose diabetics to the disease. The team is also examining mechanisms underlying diabetic susceptibility to *Klebsiella pneumoniae* in causing liver abscesses and the design of novel immunotherapeutics against multi-drug resistant bacterium *Acinetobacter baumannii*.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Gandhi, Mihir

Manager, Quantitative Services and Collaborations, Centre for Quantitative Medicine,
Duke-NUS Medical School

Head of Biostatistics, Singapore Clinical Research Institute

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Email: mihir.gandhi@scri.edu.sg

Website: <https://scholar.google.com/citations?user=9MvdXdEAAAAJ>



Research Summary

Mihir Gandhi's research specialization is applied statistics in clinical research related oncology, child growth and development, and health-related quality of life. He has been the trial statistician for several hepatocellular carcinoma trials (AHCC03, AHCC05, AHCC06, and AHCC07) from Asia-Pacific Hepatocellular Carcinoma Trials Group. These are phase II and phase III multi-country trials. He was also involved in providing statistical support for two phase II child nutritional trials conducted in Singapore and a large-scale cohort study on assessing child growth and development in Malawi. He is an active researcher in area of health-related quality of life in several patient populations such as cancer, heart diseases, rheumatoid arthritis, and stroke. He has published more than 35 research papers in peer-reviewed local and international journals.

Past and Current Duke-NUS MD Research Students

Goh Kian Leong (Class of 2018)

Student Publications

NA

Goh, Brian Kim Poh *MBBS, MRCSEd, MMed (Surg), MSc, FRCSEd, FAMS*

Adjunct Professor, Duke-NUS Medical School

Senior Consultant, Department of HPB and Transplant Surgery, Singapore General Hospital

Contact: -

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Website: -



Research Summary

Presently, my research is focused mainly on clinical outcomes after pancreatic and liver resections and oncological outcomes of liver and pancreatic malignancies. I have published extensively in this field and have numerous on-going (> 10) projects. I perform mainly clinical cohort studies and systematic reviews in this field and have mentored several surgical trainees and medical students in the past.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Goh, Cynthia *MBBS, PhD, FAMS, FRCP*

Associate Professor, SingHealth Duke-NUS Oncology Academic Clinical Programme
Deputy Chairperson, Lien Centre for Palliative Care, Duke-NUS Medical School
Senior Consultant, Division of Palliative Medicine, National Cancer Centre Singapore

Contact: 6436 8183

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Website: -



Research Summary

Dr Cynthia Goh conducts clinical research into treatments for pain, other symptoms and quality of life of patients near the end of their lives at the Division of Palliative Medicine, National Cancer Centre Singapore. She also leads a team that does health services research, looking into how Singaporeans wish to be cared for at the end of their lives, and the influence ethnicity and religion has on this.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Goh, Yeow Tee *MMed (Int Med)*

Adjunct Associate Professor, Duke-NUS Medical School
 Senior Consultant, Department of Haematology, Singapore General Hospital
 Acting Chairman, Division of Research, Singapore General Hospital
 Director, Clinical Trials and Research Centre, Singapore General Hospital
 Director, Research Quality Management, SingHealth
 Clinical Senior Lecturer, National University of Singapore



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Website: -

Research Summary

A/Prof Goh's specializes in translational research involving hematologic malignancies (notably in Chronic Myeloid Leukemia, Multiple Myeloma and Lymphoma), with focus on the use of novel agents, anti-infectives and supporting therapies. His research interest also includes conditioning regimens, immuno-reconstitution and cell processing in hematopoietic stem cell transplantation. In recent years, A/Prof Goh has also ventured into immunotherapy research for hematologic malignancies, focusing primarily in the role of memory and regulatory T cells and augmentation of cytotoxic T-cell response. A/Prof Goh is a prolific clinical researcher, who is the PI and Co-I in over 63 clinical trials to date. Among which, he is the overall PI in an investigator-initiated regional phase 2 trial involving a novel combination of 2 drugs for the treatment of Peripheral or NK/T cell Lymphoma. A/Prof Goh is also the PI and recipients of grants from NMRC (Overall-Lead PI; Centre Grant), A*Star and SCS.

Past and Current Duke-NUS MD Research Students

Yap Kok Chong Bernard (Class of 2016)
 See Kee Yon Lionel (Class of 2016; Co-Mentor)
 Loo Jiawei, Aloysius (Class of 2018)

Student Publications

1. In vitro generation of cytotoxic CD4 Lymphocyte Response against Autologous Acute Myeloid Leukemia. 2014 September 28, Journal of Science and Technology, 2(9). **Yap Bernard**, Ho LP, Yit, PS Goh YT

Gooley, Joshua J. *PhD*

Associate Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Adjunct Associate Professor, Department of Physiology, National University of Singapore

Adjunct Senior Lecturer, School of Psychological Sciences, Monash University

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Research Summary

Our laboratory focuses on understanding the role of circadian rhythms and sleep in regulating human physiology and performance. We study the effects of light on circadian, endocrine, and alerting responses. In other studies, my team is examining the interaction of circadian rhythms and homeostatic sleep pressure on cognition and metabolism. The long-term goal of this research is to develop countermeasures for fatigue, and to develop new approaches for treating or diagnosing circadian rhythm sleep disorders.

Past and Current Duke-NUS MD Research Students

Tan Shu Hui Sara (Class of 2013)

Zhou Yi (Class of 2015; Co-Mentor)

Student Publications

1. Ho Mien I, Chua EC, Lau P, Tan LC, Lee IT, Yeo SC, **Tan SS**, Gooley JJ. Effects of exposure to intermittent versus continuous red light on human circadian rhythms, melatonin suppression, and pupillary constriction. *PLoS One*. 2014;9(5):e96532.
2. Chua EC, Yeo SC, Lee IT, Tan LC, Lau P, **Tan SS**, Ho Mien I, Gooley JJ. Individual differences in physiologic measures are stable across repeated exposures to total sleep deprivation. *Physiol Rep*. 2014;2(9):e12129.
3. **Zhou Y**, Aris IM, **Tan SS**, Cai S, Tint MT, Krishnaswamy G, Meaney MJ, Godfrey KM, Kwek K, Gluckman PD, Chong YS, Yap F, Lek N, Gooley JJ, Lee YS. Sleep duration and growth outcomes across the first two years of life in the GUSTO study. *Sleep Med*. 2015; 16(10):1281-6.

Halliwell, Barry *BA, D.Phil., D.Sc*

Tan Chin Tuan Centennial Professor, Department of Biochemistry, Yong Loo Lin School of Medicine, National University Singapore.

Senior Advisor to the President, National University Singapore

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Research Summary

Prof Barry Halliwell is known especially for his seminal work on the role of free radicals and antioxidants in biological systems. Current research projects include the use of a *C. elegans* model to study ageing and age-related diseases, studying the role of free radicals in neurodegeneration, developing markers of oxidative injury in stroke and the study of the physiological role of ergothioneine, a putative fungal-derived dietary antioxidant.

The Thomson Reuters lists Prof Halliwell as one of the world's most highly-cited researchers in Agricultural Sciences, Biology & Biochemistry and Pharmacology. His book *Free Radicals in Biology and Medicine* published by Oxford University Press, and now in its fifth edition, is regarded worldwide as an authoritative text in the field. His laboratory is also ranked number 1 worldwide by highest citation score in Free Radical Research.

Past and Current Duke-NUS MD Research Students

Fong Sheng (Class of 2015)

Student Publications

1. Gruber J, Ng LF, **Fong S**, Wong YT, Koh SA, Chen CB, Shui G, Cheong WF, Schaffer S, Wenk MR, Halliwell B. Mitochondrial changes in ageing *Caenorhabditis elegans*--what do we learn from superoxide dismutase knockouts? *PLoS One*. 2011;6(5):e19444.
2. Schaffer S, Gruber J, Ng LF, **Fong S**, Wong YT, Tang SY, Halliwell B. The effect of dichloroacetate on health- and lifespan in *C. elegans*. *Biogerontology*. 2011 Jun;12(3):195-209.
3. Gruber J, **Fong S**, Chen CB, Yoong S, Pastorin G, Schaffer S, Cheah I, Halliwell B. Mitochondria-targeted antioxidants and metabolic modulators as pharmacological interventions to slow ageing. *Biotechnol Adv*. 2013 Sep-Oct;31(5):563-92.
4. Gruber J, Chen CB, **Fong S**, Ng LF, Teo JW, Halliwell B. *Caenorhabditis elegans*, what we can and cannot learn from ageing worms? *Antioxid Redox Signal*. 2015 June.

Hausenloy, Derek *MChB, PhD, FRCP, FESC, FACC*

Professor, Programme in Cardiovascular and Metabolic Disorders, Duke-NUS Medical School

Senior Consultant Cardiologist and Clinician Scientist, National Heart Research Institute Singapore, National Heart Research Centre Singapore

Professor, Cardiovascular Medicine, University College London

Consultant Cardiologist, New Barts Heart Centre



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Website: [Google Scholar Profile](#)

Research Summary

Prof Hausenloy conducts both basic and clinical research in the area of ischaemic heart disease and heart failure, the leading cause of death and disability in Singapore and worldwide. His research focus is on discovering novel therapies for protecting the heart against the detrimental effects of acute ischemia/reperfusion injury (IRI) in order to prevent the onset of heart failure. He uses a translational approach to cardioprotection ranging from cellular and animal models of acute IRI to proof-of-concept clinical studies in acute myocardial infarction patients, and finally to large multicenter randomized clinical trials focused on clinical outcomes. He is also interested in both small animal and clinical cardiac PET and MRI imaging in the context of acute myocardial infarction and cardioprotection. Prof Hausenloy has been PI on over 30 research grants, and he has authored over 140 papers.

Past and Current Duke-NUS MD Research Students

Lim Mei Xing (Class of 2018)

Nazia Naser Chowdhury (Class of 2019)

Student Publications

NA

Hsieh, Po-Jang Brown *PhD*

Assistant Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

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Website: -



Research Summary

I am interested in understanding how the human brain is able to perceive and experience the world. In particular, our lab studies the human neural bases of perception, attention, and consciousness with functional brain imaging (fMRI), neural decoding methods, and psychophysical techniques.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Hu, Jiancheng *PhD*

Assistant Professor, Duke-NUS Medical School

Principal Investigator, Division of Cellular and Molecular Research, National Cancer Centre Singapore

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Website: www.scholar.google.com.sg/citation?user=icfG4hwAAAAJ&hl=en&oi=ao



Research Summary

Dr Hu's research focuses on: (1) how oncogenic protein kinases, particularly Raf family kinases, drive cancer development; (2) the molecular basis that underlie Intrinsic and acquired resistance of kinase inhibitors in clinic treatment of cancers; (3) the development of novel kinase inhibitors. His major contributions to the research community in last 5 years include: (1) Unraveled molecular mechanism underlying dimerization-mediated transactivation of Raf kinases; (2) Created effective mutagenesis methods to separate the allosteric/scaffold function from the catalytic function of protein kinases, which are being widely used to dissect the function of other protein kinases.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

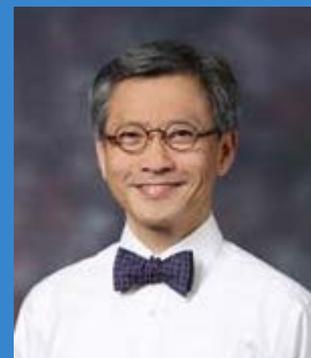
Hwang, Nian Chih *MBBS, FFARCSI, FAMS*

Professor, Duke-NUS Medical School

Senior Consultant and Director of Cardiothoracic Anaesthesia Service, Department of Anaesthesiology, Singapore General Hospital

Head, Department of Cardiothoracic Anaesthesia, National Heart Centre Singapore

Associate Professor, Department of Anaesthesia, Yong Loo Lin School of Medicine, National University of Singapore



Contact: 6321 4220

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Website: -

Research Summary

1. This is a prospective study to evaluate long term morbidity and mortality outcomes of patients after abdominal surgery (CIRB: 2015/2468).
2. The main objective of which is to derive and recommend a stratified risk prediction model for patients who undergo abdominal surgery in SGH.
 - a. Currently, we apply established risk prediction models when counselling the patient about perioperative risks, morbidity and mortality. Depending on the risk prediction, our whole system of healthcare professionals put in different levels of effort in ensuring best patient outcome. This is in addition to the infrastructure and policies that are part of our healthcare provision (laminar flow, antibiotics before incision and repeated doses to ensure minimal inhibitory concentrations, aseptic procedures, glycaemic control throughout hospital stay, and other best practices in OT, ICU, HD, and general wards).
 - b. Through this CIRB-approved prospective observational project, we will
 - i. Track the (observed) outcome of patients at 3 months, 6 months and one year after abdominal surgery,
 - ii. Compare the observed outcome against the calculated (expected) risks, and
 - iii. Derive and validate risk prediction model(s), for patients undergoing surgery in SGH over 3- to 4-year period.
3. As an observational prospective study looking at M and M outcomes and no interventions are required, consent from the patient has been waived by CIRB.
4. The following are included in this study:
 - a. All patients who undergo abdominal surgery: Hepatobiliary, upper and lower GI track, urology and gynaecology,
 - b. Laparotomy, minimally invasive surgery (laparoscopic and robotic assisted) abdominal surgery, obstetrics, gynaecology and urology operations
 - c. Elective, urgent and emergency, abdominal surgery.
5. John C. Allen, Assistant Professor in Office of Clinical Sciences - Centre for Quantitative Medicine at Duke NUS Medical School will assist me in deriving the risk prediction models.

Past and Current Duke-NUS MD Research Students

Choo Wei Tak (Class of 2018)

CHEN Yoong Wend (Class of 2020)

Student Publications

NA

Hwang, William Ying Khee *MBBS, M Med (Int Med), MRCP (UK), FAMS, FRCP (London)*

Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School
 Head and Senior Consultant, Department of Haematology, Singapore General Hospital
 Medical and Laboratory Director, Singapore Cord Blood Bank
 Director, Hematopoietic Stem Cell Transplant Programme, Singapore General Hospital
 Director, SingHealth Transplant
 President, Singapore Society of Haematology
 President, World Marrow Donor Association



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Website: -

Research Summary

Dr Hwang conducts clinical and laboratory research on hematopoietic stem cells and their use in clinical transplantation. He is Director of the Hematopoietic Stem Cell Transplant Programme in the Singapore General Hospital and also runs the Hematopoietic Stem Cell laboratory at Duke-NUS. He has been actively publishing on the outcomes of hematopoietic stem cell transplantation from the perspective of the transplant centre as well as donor registries as cord blood banks. Together with two post-doctoral research scientists in his laboratory, he has been exploring ways to effectively expand hematopoietic stem cells for clinical transplantation. Dr Hwang has secured over \$2 million in funding and authored over 70 papers in journals like *Cell Stem Cell*, *Journal of Clinical Oncology*, *Leukemia*, *Cytotherapy*, *Biology of Blood and Marrow Transplantation*, *Bone Marrow Transplantation*, *Methods*, *American Journal of Hematology* and many more.

Past and Current Duke-NUS MD Research Students

Ong Li Ming (Class of 2011)

Anne Wong Ann May (Class of 2011)

Meredith TAN Wei-Yuan (Class of 2020)

Student Publications

1. **Wong AM**, Allen JC, Goh YT, Linn YC, Loh SM, Diong CP, Chowbay B, Hwang WY. Single center retrospective analysis of BU-based conditioning regimens in allogeneic transplantation. *Bone Marrow Transplant*. 2012 Feb;47(2):181-9.
2. Chowdhury M, Baskar R, **Ong LM**, Hwang WY. Uses of Umbilical Cord Blood Stem Cells. In: Bongso S & Lee EH, eds. *Stem Cells: from bench to bedside*. 2nd ed. Singapore, World Scientific Publishing; 2010: 253-302.

Iqbal, Javed MD, AM.BD.

Assistant Professor, Duke-NUS Medical School

Senior Consultant, Department of Anatomical Pathology, Singapore General Hospital

Associate Programme Director, Pathology Residency Programme, SingHealth

Director of Research, SingHealth Duke-NUS Pathology Academic Clinical Programme (PATH ACP)

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Website: Google Scholar / SGH / PATH ACP / Breast Research Programme in PATH ACP



Research Summary

Dr Iqbal has been studying cellular immune response in triple negative breast cancers (TNBC) an aggressive subtype of breast cancer which are known to be strongly immunogenic. His research interest is in studying the integral immune response biomarkers and their interaction with tumor hypoxia which is intimately associated with cancer progression. He is studying the role of hypoxia-induced proteins and related proteins regulating the immune response pathway in TNBC. Dr Iqbal also studies immune checkpoint molecules (eg PD1, PDL1) in different subtypes of breast cancer using both human tumor samples and cancer cell lines. The objective is to identify optimal immune checkpoint biomarkers predictive of effective immunotherapy in TNBC. His other interests include regulation of gene expression and viral-induced (HPV) breast neoplasms.

Dr Iqbal is recipient of the NMRC transition award (TA) and co-investigator in multiple breast cancer research projects. He has authored more than 35 research papers.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Itahana, Koji *PhD*

Associate Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

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Research Summary

Dr. Itahana conducts extensive research on apoptotic cell death and cancer metabolism to understand the underlying mechanisms of resistance of cancer cells against chemotherapy and radiotherapy. Using proteomics approach and gene expression array approach, his group has identified several key molecules involved in the regulation of apoptosis and metabolism by ARF and p53, both of which are critical tumor suppressors and mutated or deleted in a half of cancers. These include novel binding partners of either p53 or ARF, and transcriptional targets of p53. Third-year medical students will study one of these proteins and investigate whether these proteins are involved in apoptosis and cancer metabolism. If the results from these in vitro studies are promising, using cancer patient samples, the student will study the expression levels and mutation status of these proteins and their relationship with prognosis of patients by collaborating with clinicians at SGH, NCC, and NUH.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Iyer, N Gopalakrishna *MBBS (Hons), PhD* (Cambridge), *FRCSEd, FAMS*

Adjunct Associate Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Senior Consultant, Department of Surgical Oncology, National Cancer Centre, Singapore

Principal Investigator, Cancer Therapeutics Research Laboratory, National Cancer Centre, Singapore



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Research Summary

Dr Iyer conducts clinical and translational research on individualizing treatment in patients with head and neck cancers. His current work involves the use of high-throughput technology including expression microarray and next-generation sequencing to identify potential biomarkers that correlate with prognosis and outcome in patients with head and neck squamous cell cancers. He is also interested in the identification of novel pathways and compounds to target cancer cells in various in vitro models including cancer stem cells. He is also involved in several clinical projects including coordinating the translational science efforts of an international phase 3 trial which determines the role of EGFR inhibitors in head and neck cancer.

Past and Current Duke-NUS MD Research Students

Chen Sixian (Class of 2014)

Nguyen Thien Khanh (Class of 2014)

Student Publications

1. **Nguyen TK** and Iyer NG. Genetic alterations in head and neck squamous cell carcinoma: the next-gen sequencing era. *World J Med Genet.* 2013; 3(4): 22-33.

Jafar, Tazeen Hasan *MBBS, MPH, FNKF*

Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

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Website: -



Research Summary

Dr Jafar conducts epidemiological research and population based trials on chronic non-communicable disease (NCD) with a focus on hypertension, kidney disease and associated risk factors. Dr Jafar has led and participated in several NIH funded studies including meta-analysis of individual patient data on ACE inhibitors in non-diabetic kidney disease, and analysis of national survey data. Her recent work has entailed the evaluation of strategies for control of hypertension in low income communities with home health education and physician training, as well as risk factors associated with NCDs. She will be working with physicians in the polyclinics on strategies to enhance cardiovascular health among patients with hypertension and additional risk factors in Singapore. She also has an extensive global health research agenda. She has published in high impact journals and serves on many editorial boards.

Past and Current Duke-NUS MD Research Students

Seow Yuan Bin Dominique (Class of 2015)

Eui Whan Moon (Class of 2018)

Qian Lian (Class of 2019; Co-mentor)

Student Publications

1. **Dominique Y.B. Seow**, Benjamin Haaland and Tazeen H. Jafar. The Association of Prehypertension With Meals Eaten Away. *Am J Hypertens* (2015): hpv027.

Je, Hyunsoo Shawn *PhD*

Associate Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

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Website: Google Scholar Profile



Research Summary

Synapses are fundamental units of neuronal connectivity in the brain. Our laboratory investigates synapse for principles of learning and memory, for processes underlying animal behaviours, and for pathological mechanisms of various neurological and psychiatric disorders including autism, schizophrenia, and Alzheimer's disease. There are three major aspects of research in our laboratory – 1) the role of BDNF/TrkB signalling in animal behavior, 2) the molecular and cellular mechanisms underlying autism and schizophrenia, and 3) cutting-edge molecular and genetic tools for neuroscience research.

Selected publications since 2010:

1. Mabb, A.M. *, **Je, H.S.** *, Wall, M.J., Robinson, C.G., Larsen, R.S., Qiang, Y., Correa, S.A., and Ehlers, M.D. (2014) Triad3A Regulates Synaptic Strength by Ubiquitination of Arc. **Neuron**, 82, 1299-316. *: co-first authors. *Highlighted in: Faculty of 1000 Biology, 12 Sep 2014.* <http://f1000.com/prime/718457238>
2. **Je, H.S.**#, Yang, F., Potluri, S., Ji, Y., Nagappan, G., Hempstead, B., Son, Y.J.#, and Lu, B.# (2013) proBDNF and Mature BDNF as Punishment and Reward Signals for Synapse Elimination at Mouse Neuromuscular Junctions. **J. Neurosci.** 33, 9957-62. #: co-corresponding authors.
3. Lee, K., Kim, Y., Lee, S.J., Qiang, Y., Lee, D., Lee, H.W., Kim, H., **Je, H.S.**, Sudhof, T.C., and Ko, J. (2013) MDGAs selectively interact with neuroligin-2 but not other neuroligins to regulate inhibitory synapse development. **PNAS**, 110, 336-41.
4. **Je, H.S.**, Yang, F., Potluri, S., Ji, Y., Nagappan, G., Hempstead, B., Son, Y.J., and Lu, B. (2012) Role of proBDNF to Mature BDNF Conversion in Activity-dependent Competition at Developing Neuromuscular Synapses. **PNAS**, 109, 15924-9. *Highlighted in: Faculty of 1000 Biology, 18 Dec 2012.* <http://f1000.com/prime/717967152>
5. Rossi, M.A., Maimon, B., Mak, K., **Je, H.S.**, Yin, H.H. (2012) Prefrontal Cortical Mechanisms Underlying Delayed Alternation in Mice. **J. Neurophysiology**. 108, 1211-22
6. Wang, X., McCoy, P.A., Rodriguiz, R.M., Pan, Y., **Je, H.S.**, Roberts, A.C., Kim, C., Berrios, J., Colvin, J.S., Bousquet-Moore, D., Lorenzo, I., Wu, G., Weinberg, R.J., Ehlers, M.D., Philpot, B.D., Beaudet, A.L., Wetsel, W.C., and Jiang, Y. (2011) Synaptic dysfunction and abnormal behaviors in mice lacking the major isoforms of Shank3. **Human Molecular Genetics**, 20, 3093-108.
7. **Je, H.S.** *, Ji, Y. *, Wang, Y., Yang, F., Wu, W., and Lu, B. (2011) Presynaptic protein synthesis required for NT-3-induced long-term synaptic modulation. **Molecular Brain**, 4:1. *: co-first authors.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Kandiah, Nagaendran *MBBS, MRCP (UK), FAMS* (Neurology)

Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Neurology, National Neuroscience Institute

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Website: -



Research Summary

Dr Kandiah is actively involved in cognitive neurology research. His main research interests include mild cognitive impairment, vascular dementia and Parkinson's Disease dementia. His research projects involve cognitive psychometrics, neuroimaging, genetics and other biomarkers for dementia. He currently holds 3 national grants from NMRC and Singhealth Foundation. Ongoing projects include a study investigating the longitudinal correlation of MRI to cognitive performance among patients with early Parkinson's disease and another evaluating the longitudinal cognitive and neuroimaging evolution of acute cerebral infarcts. He has numerous publications in this field and is a reviewer for several peer reviewed journals.

Past and Current Duke-NUS MD Research Students

Poh Yen Yeong (Class of 2015)

Zhang Yuan Helen (Class of 2015; Co-Mentor)

Student Publications

NA

Koh, Joyce Suang Bee *MBBS, FRCS (Edin), FRCSEd (Orth), FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Orthopaedic Surgery, Singapore General Hospital

Clinical Teacher, Yong Loo Lin School of Medicine, National University Singapore

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Research Summary

My research specialization is in the field of orthopaedic trauma. I am involved in a wide range of projects from biomechanical and anatomical research (with a special interest in implant design and analysis) to multinational clinical trials involving current and novel treatments in my area of clinical specialization.

Past and Current Duke-NUS MD Research Students

Andrew Chou Chia Chen (Class of 2015)

Muhamad Zulhakim Bin Aman (Class of 2018; Co-mentor)

Student Publications

NA

Koh, Siyue Mariko *MBBS, MRCP (UK), FCCP*

Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Respiratory and Critical Care Medicine. Singapore General Hospital

Director of Allergy Clinic, Singapore General Hospital

Senior Clinical Lecturer, Yong Loo Lin School of Medicine, Singapore

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Website: SGH Webpage



Research Summary

Dr Koh has a database of > 400 subjects with Severe asthma and Difficult- to- treat asthma and conducts clinical research with a focus on severe asthma phenotypes (clinical and inflammatory) and new therapeutics (medications and novel bronchoscopic technique i.e. Bronchial Thermoplasty). Her recent work has entailed the evaluation of airway inflammation and potential biomarkers for different phenotypes of severe asthma (with collaborators from POLARIS, A*STAR and NUS). She is currently exploring potential international collaboration with members of ASAN (Australasian Severe Asthma Network). She has obtained competitive grants of over S\$2.3 million as PI, has authored over 30 papers, 1 book chapter and is in the Editorial Board of several journals and an Associate Editor of BMC Pulmonary Medicine.

Past and Current Duke-NUS MD Research Students

Cao Qi (Class of 2017)

Lau Pui Kheng, Priscilla (Class of 2018)

Ong Shao Qiang, Alvin (Class of 2019)

Karina Ruth SOENJOYO (Class of 2020)

Student Publications

NA

Koh, Tse Hsien *MBCChB, MSc, DTM&H, FRCPA, FRCPath, D(ABMM), PhD, MD*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant and Head, Department of Microbiology, Singapore General Hospital

Academic Vice Chair, Research, SingHealth Duke-NUS Pathology Academic Clinical Programme

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

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Website: SGH/ PATH ACP/ Diagnostic Bacteriology Research Programme in PATH ACP/ Microcosm (Blog)/ Diagnostic Bacteriology Twitter/ SGH Department of Microbiology Facebook



Research Summary

A/Prof Koh's undergraduate medical training was at the University of Aberdeen in Scotland. He completed his specialist microbiology training at the Singapore General Hospital and the Royal London Hospital. In 2006, he did a research fellowship at the Toho University Medical School in Tokyo to study the characterization of beta-lactamases. In 2008 he did an attachment at Leiden University Medical Centre to study the molecular epidemiology of *Acinetobacter* spp. He obtained his PhD in 2013 from the National University of Singapore, and his research MD from the University of Aberdeen in 2014. His PhD thesis was about "Acquired Carbapenemases in Gram-Negative Bacilli in Singapore".

His research interests are:

1. The molecular epidemiology of bacterial pathogens and resistance determinants of multidrug resistant bacteria
2. The characterization of antibiotic resistant bacteria
3. Community *Klebsiella pneumoniae* infections
4. Food, environmental and animal sources of bacteria that impact human health
5. Zoonotic bacterial infections

Past and Current Duke-NUS MD Research Students

Dixon Grant (Class of 2011)

Student Publications

Grant D, Koh TH, Tan YE, Hsu LY, Kurup A, Donahue SK, Mann J, Fisher D. An Outbreak of Community Associated Methicillin Resistant *Staphylococcus aureus* Subtype USA300 at an International School in Singapore. *Ann Acad Med Singapore*. 2013 Nov;42(11):575-8. PubMed PMID: 24356653. *JIF* (2013): 1.221

Koh, Woon Puay *MBBS, PhD*

Professor, Duke-NUS Medical School

Professor, Saw Swee Hock School of Public Health, National University of Singapore

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Research Summary

Koh Woon-Puay is an epidemiologist and the site-principal investigator in the Singapore Chinese Health Study, an NIH-funded, 63,000-strong cohort of middle-aged and elderly Chinese Singaporeans established for the long-term study of dietary and other environmental determinants of chronic diseases common among Singaporeans. For the past few years, together with local and overseas co-investigators, Dr Koh has examined potential disease-protective dietary factors that are consumed especially among Chinese in Singapore, and has co-authored over 180 scientific papers in peer-reviewed international journals, including several noteworthy and novel scientific contributions of reports on diet, lifestyle and genes in relation to cancer risk in leading international conferences and top cancer journals. Dr Koh is also a co-investigator in population-based studies that investigate diet, lifestyle and genetic factors as determinants of mammographic densities and in the etiology of cardiovascular disease, diabetes mellitus and osteoporotic hip fractures.

Past and Current Duke-NUS MD Research Students

See Kee Yon, Lionel (Class of 2016)

Tan Bobby (Class of 2018; Co-mentor)

Ng Heng Ngee, Raphael (Class of 2019)

Student Publications

NA

Krishnan, Manoj *PhD*

Assistant Professor, Programme in Emerging Infectious Diseases, Duke-NUS Medical School

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Website: -



Research Summary

My laboratory broadly studies virus-host interactions, and the regulation of innate immunity and inflammatory signaling pathways. A particular focus of our research is to define the role of ubiquitin ligases in host response to viral infection, and inflammation. We are also actively engaged in discovering small molecule modulators of the ubiquitin ligases regulating immune and inflammatory pathways as potential drug candidates to control infection, inflammation and autoimmune diseases.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Kuan, Win Sen *MBBS, MRCSEd (A&E), MCI, FAMS*

Consultant, Emergency Medicine Department, National University Hospital, National University Health System, Singapore

Assistant Professor, Department of Surgery, Yong Loo Lin School of Medicine, National University of Singapore

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Research Summary

- Sepsis
- Respiratory diseases
- Cardiovascular biomarkers

Past and Current Duke-NUS MD Research Students

Swati Jain (Class of 2014; Co-Mentor)

Koh Yiwen (Class of 2016)

Tan Jung Hiong (Class of 2019)

Student Publications

1. Kuan WS, Ibrahim I, Leong BS, **Jain S**, Lu Q, Cheung YB, Mahadevan M. Emergency Department Management of Sepsis Patients: A Randomized, Goal-Oriented, Noninvasive Sepsis Trial. *Ann Emerg Med*. 2015 Oct 13. pii: S0196-0644(15)01273-1. doi: 10.1016/j.annemergmed. 2015.09.010. [Epub ahead of print]

Kumar, Prakash *MBBS (Malaysia), M Med (Int Med) (Malaysia), MRCP (UK), FAMS (Neurology), FRCP (Edin), FRCP (Glasg)*

Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Neurology, National Neuroscience Institute

Programme Director, Neurology Senior Residency, SingHealth

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University Singapore



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Website: -

Research Summary

Assoc Prof Kumar's areas of clinical and research interest include motor and non-motor problems in Parkinson's disease and other movement disorders, Deep Brain Stimulation programming as well as Clinical Neurophysiology. He has published extensively in these areas.

Past and Current Duke-NUS MD Research Students

Lim Jing Wei (Class of 2012; Co-Mentor)

VOON Siew Lian (Class of 2020; Co-mentor)

Mark Tan Min Jian (Class of 2017)

Jonathan Wu (Class of 2019)

Student Publications

NA

Lam, Carolyn Su Ping *MBBS, MRCP, MS, FACC, FESC*

Professor, Programme in Cardiovascular and Metabolic Disorders, Duke-NUS Medical School

Senior Consultant, Department of Cardiology, National Heart Centre Singapore

Chairperson of Asia Pacific Association of Women's Cardiovascular Diseases

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Website: -



Research Summary

Dr Lam's research is focused on heart failure, especially the syndrome of heart failure with preserved ejection fraction, as well as sex differences in cardiovascular disease, hemodynamics, echocardiography, biomarkers and clinical trials.

Past and Current Duke-NUS MD Research Students

Michelle Chan Mei-Yi (Class of 2014)

Yvonne Chia May Fen (Class of 2017)

Student Publications

1. **Chan MM**, Lam CS. How do patients with heart failure with preserved ejection fraction die? *Eur J Heart Fail.* 2013 Jun;15(6):604-13.
2. Wong LL, Armugam A, Sepramaniam S, Karolina DS, Lim KY, Lim JY, Chong JP, Ng JY, Chen YT, **Chan MM**, Chen Z, Yeo PS, Ng TP, Ling LH, Sim D, Leong KT, Ong HY, Jaufeerally F, Wong R, Chai P, Low AF, Lam CS, Jeyaseelan K, Richards AM. Circulating microRNAs in heart failure with reduced and preserved left ventricular ejection fraction. *Eur J Heart Fail.* 2015 Jan 23. [Epub ahead of print]

Lamoureux, Ecosse *MSc, PhD*

Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

Professor, Department of Ophthalmology, National University of Singapore

Director, Population Health, Senior Principal Clinician Scientist, Singapore Eye Research Institute

Professorial Fellow (Adjunct), Department of Surgery and Medicine, University of Melbourne, Australia

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Website: <https://scholar.google.com.sg/citations?hl=en&user=mKTcIE8AAAAJ>



Research Summary

Professor Lamoureux is recognized internationally for his work in population and health services research; epidemiology (with a focus on the old and very old); patient-centred outcomes; development of patient-reported outcome measures using modern psychometric theory, item banking, and computer adaptive testing; quality of life outcomes; diet; and physical activity in the elderly and underprivileged community groups. His population-based cohort is a contemporary patient-centric study of the old and very old in Singapore with a specific focus on sensory impairment, sarcopenia, osteoporosis, frailty (physical and cognitive) and multimorbidity. He is also currently developing several item banks and computer adaptive testing systems for the major blinding eye conditions. Professor Lamoureux is a current NMRC senior clinician-scientist fellowship awardee and a PI on several grants in Australia and Singapore. To date, his overall research activities have attracted over SG\$40 million in competitive grant funding, and over 350 peer-reviewed papers and 4 book chapters.

Past and Current Duke-NUS MD Research Students

Koh Shu Qing (Class of 2018; Co-mentor)

Lee Jun Jie (Class of 2020, Co-Mentor)

Student Publications

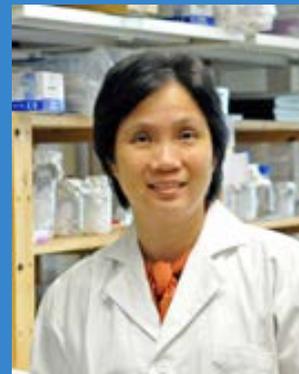
SQ Koh, R Sultana, M Rangabashyam, NC Tan, KC Soo, NG Iyer, EK Fenwick, EL Lamoureux; HK Tan. Factors Associated with Returning to Work in Head & Neck Cancer Survivors in Singapore: A Mixed Methods Approach. *Oral Oncology*. (Under review)

Lee, Caroline Guat Lay *PhD*

Associate Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Associate Professor, Department of Biochemistry, Yong Loo Lin School of Medicine, National University of Singapore

Principal Investigator, Laboratory of Liver Cancer Functional Genomics, National Cancer Centre



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Website: -

Research Summary

Our laboratory focus on utilizing computational, genetical, molecular and cellular biological tools to elucidate the molecular and cellular pathways that may lead to the carcinogenesis process as well as to understand genetic variations that may account for differences in our response to drugs as well as susceptibility to complex diseases including cancer. Current ongoing projects include:

- 1) Cancer Functional Genomics
- 2) Population Genetics / Pharmacogenetics

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Lee, Haur Yueh *MBBS, MRCP(UK), MMed (Int Med), FAMS (Dermatology)*

Adjunct Associate Professor, Duke-NUS Medical School

Consultant and Head, Department of Dermatology, Singapore General Hospital

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University Singapore

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Email: lee.haur.yueh@singhealth.com.sg

Website: -



Research Summary

Dr Lee has an interest in severe cutaneous adverse drug reactions, autoimmune blistering conditions and medical dermatology. His main research focuses on the epidemiology, biomarkers and interventional studies for severe adverse reactions such as Stevens-Johnson syndrome/Toxic epidermal necrolysis and DRESS syndromes (Drug reaction, eosinophilia, systemic signs). There are active collaborations with other research partners in A*Star and our unit is part of a regional study group (SEA-SCAR; South-east Asian Severe cutaneous adverse reactions). Other research interests include the characterization and prognostication of neutrophilic dermatoses, autoimmune blistering conditions and cutaneous vasculitis.

Past and Current Duke-NUS MD Research Students

Chua Shunjie (Class of 2015)

He Huiling (Class of 2018; Co-Mentor)

Chan Chong En, Linus (Class of 2019)

ZHANG Fuquan (Class of 2020)

Student Publications

NA

Lee, Jan Hau *MBBS, MRCPCH (UK), MCI*

Adjunct Assistant Professor, Duke-NUS Medical School

Consultant, Children's Intensive Care Unit, KK Women's and Children's Hospital

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Website: Google Scholar Profile



Research Summary

Clinical research in pediatric critical care. Research interest mainly in acute respiratory distress syndrome, utilization of database and systematic reviews involving clinical outcomes in the pediatric intensive care unit.

Past and Current Duke-NUS MD Research Students

Tan Bobby (Class of 2018)

YAO Wen Jie, Dominic (Class of 2020)

Stephanie Senna (Class of 2019)

Ng Heng Ngee, Raphael (Class of 2019; Co-mentor)

Student Publications

NA

Lee, Ser Yee

MBBS, M.Med(Surgery), M.Sc, FAMS, FRCSED

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Hepatopancreatobiliary and Transplant Surgery, Singapore General Hospital

Senior Clinical Lecturer, Yong Loo Lin School of Medicine, National University of Singapore



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Website: https://www.researchgate.net/profile/Ser_Lee

Research Summary

Dr. Lee Ser Yee's subspecialty is in Hepatopancreatobiliary surgery (HPB surgery), Liver transplantation, Minimally-Invasive Surgery (Laparoscopic and Robotic surgery) and Surgical Oncology. He has also mentored many juniors in various clinical and translational research projects, from undergraduate to postgraduate levels. He has authored more than 90 scientific publications including top international journals such as Annals of Surgery, Nature, Annals of Surgical Oncology, HPB, Hepatology, Gastroenterology and JACS. His scientific work is well cited and he has delivered more than 110 scientific presentations at medical conferences worldwide, many as an invited speaker. He has written and edited 2 surgical books and 70 book chapters. He also sits on the Editorial Board and is a Reviewer for more than 30 international peer-review medical journals. His clinical interest lies in minimally-invasive HPB surgery and research interests revolves around the clinical and translational aspects of HPB cancers and diseases. He also works in close collaboration with the scientists in National Cancer Centre Singapore and Duke-NUS Medical School. He also collaborates on projects with renowned international centers such as Memorial Sloan Kettering Cancer Center, Mayo Clinic and Amsterdam Medical Centre, Netherlands.

Past and Current Duke-NUS MD Research Students

NG Ho Man (Class of 2020)

Student Publications

NA

Lee, Shu Yen *MBBS, MMed(Ophth), FRCS(Ed), FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant, Vitreo-Retinal Service, Singapore National Eye Centre

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Website: -



Research Summary

Adj Assoc Prof Lee has research interests in vitreoretinal diseases. She has been involved in clinical studies on retinal detachment, retinal complications of myopia and anti-VEGF therapies. She has also participated in collaborative research in animal work on gene therapy.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Lee, Tih Shih MD, PhD, FRCP(C)

Associate Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Associate Professor, Psychiatry and Behavioural Sciences, Duke University

Senior Consultant, Department of Psychiatry, Singapore General Hospital

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Website: -



Research Summary

Genomic and proteomic characterization of the human hippocampus in temporal lobe epilepsy. Genome-wide expression analysis and molecular characterization of dementia and other neuropsychiatric disorders. Brain-Computer Interface treatment of Attention Deficit and Hyperactivity Disorder.

Past and Current Duke-NUS MD Research Students

Cheryl Ann Teh (Class of 2012)

Student Publications

1. **Teh CA**, Lee TS, Kuchibhatla M, Ashley-Koch A, Macfall J, Krishnan R, Beyer J. Bipolar Disorder, Brain-Derived Neurotrophic Factor (BDNF) Val66Met Polymorphism and Brain Morphology. *PLoS One*. 2012;7(7):e38469.

Lee, Yung Seng *MBBS, MMed(Paeds)(S'pore), PhD, MRCP(UK), FRCPCH, FAMS*

Professor, Department of Paediatrics, Yong Loo Lin School of Medicine, NUS

Senior Consultant, Department of Paediatrics, Khoo Teck Puat-National University Children's Medical Institute

Principal Investigator, Singapore Institute for Clinical Sciences, A*STAR

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Website: ResearchGate Profile



Research Summary

His current research interests are appetite regulation, obesity, metabolic disorders, and growth. He is a theme Principal investigator of the birth cohort study (GUSTO) of the Translational Clinical Research programme on developmental pathways to metabolic diseases, and his current research activities revolve around these projects.

GUSTO is Singapore's largest and most comprehensive birth cohort study which provided unique opportunities to study developmental plasticity and the role of epigenetics. A/P Lee research focus is on the impact of maternal and prenatal factors on the subsequent growth of the offspring, and developmental origins of taste and food preference, and appetite regulation.

Past and Current Duke-NUS MD Research Students

Zhou Yi (Class of 2015)

LIM Ying Yan (Class of 2020; Co-mentor)

Student Publications

NA

Lek, Ngee *FRCPCH, MBBS (Hons), MSc, BSc (Hons)*

Adjunct Assistant Professor, Duke-NUS Medical School

Senior Consultant, Paediatric Endocrinology and Diabetes, KK Women's and Children's Hospital

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Website: -



Research Summary

Paediatrics, child health, growth and development; paediatric endocrinology and diabetes; developmental origins of health and disease.

Past and Current Duke-NUS MD Research Students

Zhou Yi (Class of 2015; Co-Mentor)

LIM Ying Yan (Class of 2020)

Quek Jia Ling Jovina (Class of 2016; Co-Mentor)

Cassandra Ho Xin Yi (Class of 2017; Co-Mentor)

Student Publications

NA

Leow, Melvin Khee Shing *MBBS, MMed (Int Med), FACP, FACE (USA), FAMS, FRCP (Edin)*



Adjunct Associate Professor, Duke-NUS Medical School

Associate Professor, Lee Kong Chian School of Medicine, Nanyang Technological University

Clinical Associate Professor, Yong Loo Lin School of Medicine, National University Singapore

Clinical Investigator, Singapore Institute for Clinical Sciences, A*STAR

Senior Consultant Endocrinologist, Department of Endocrinology, Tan Tock Seng Hospital

Deputy Director, Singapore Clinical Nutrition Research Centre

Associate Staff (Consultant), Department of Medicine, National University Health System

Contact: -

Email: melvin_leow@ttsh.com.sg

Website: ResearchGate Profile

Research Summary

The Clinical Metabolic Physiology laboratory and the Clinical Nutrition Research Centre where A/Prof Leow works are devoted to translational and clinical research to elucidate the pathophysiological basis of metabolic disorders. The major focus of his research group is to understand the control over energy balance, neuroendocrine function and metabolism that is exerted through critical brain centers and feedback loops between key metabolic tissues and organ systems. This research group undertakes studies that encompass metabolic / endocrine physiology, clinical nutrition, food science and clinical trials which have the collective goal of understanding better the contribution of developmental and environmental factors to the emergent pattern of metabolic disease in Singapore. A/Prof Leow's research interests include adipocyte biology, epigenetic programming in metabolic disorders, thyroid disorders, endocrine manifestations and complications of systemic disorders, mathematical modeling of endocrine physiology and molecular endocrinology.

Past and Current Duke-NUS MD Research Students

Li Enlin (Class of 2019)

Student Publications

NA

Leung, Katy Ying Ying *MB.ChB, FHKAM (MED)*

Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Rheumatology and Immunology, Singapore General Hospital

Clinical Senior Lecturer, Yong Loo Lin Medical School, National University Singapore

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Website: [Google Scholar Profile](#)



Research Summary

Currently we diagnose knee OA late when they develop XR changes. There is no drug that is capable of delaying the progression of OA knee. The current management of OA knee is palliative, we give patients pain killers until their cartilages are all gone and we offer joint replacement surgery. There is a huge unmet need in the management of care in these patients.

We use biochemical, inflammatory biomarkers to identify subjects with knee pain who has MRI cartilage defects and see what factors that predict progression over 2 year period. This may help discovery of biomarkers that assist an early diagnosis of OA knees. This group of patients with early OA knee may be more responsive to treatment.

We test drug that has potential of delaying the progression of OA knee and try to understand the mechanism via blood, urine and synovial fluid biomarkers.

Past and Current Duke-NUS MD Research Students

Maria Noviani (Class of 2015) (*Not for Research Year project*)

Cheryl Ann Ma Pei Wen (Class of 2018)

Student Publications

1. Leung YY, Allen JC Jr, Noviani M, Ang LW, Wang R, Yuan JM, KOH WP. Association between body mass index and risk of total knee replacement, the Singapore Chinese Health Study. *Osteoarthritis Cartilage*. 2015 Jan;23(1):41-7. Doi: 10.1016/j.joca.2014.10.011. Epub 2014 Oct 29.

Li, Jialiang *PhD*

Associate Professor, Centre for Quantitative Medicine, Duke-NUS Medical School

Associate Professor, Department of Statistics and Applied Probability, National University of Singapore

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Website: [Google Scholar Profile](#)



Research Summary

Dr Li conducts methodology development research in various fields in biostatistics, including diagnostic medicine, survival analysis and longitudinal data analysis. Dr. Li is also interested in collaborative research and has been working on genetics, nutritional sciences, ophthalmology, heart disease, kidney disease, diabetes, psychiatry, etc. He is the PI of two NMRC grants and has been PI or Co-I on various grants. Dr. Li has authored over 90 peer-reviewed papers and is currently on the editorial board of *Biometrics* and *Lifetime Data Analysis*. He received 2011 Young Scientist Award from NUS.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

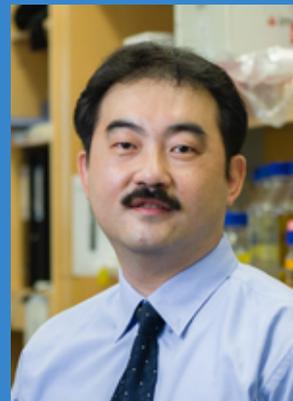
Li, Shang *MD, PhD*

Associate Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

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Website: -



Research Summary

The continued proliferation of human cells depends on the proper maintenance of the genomic information encoded in the 46 linear human chromosomes. The stability of these linear chromosomes depends on telomeres, which are maintained by telomerase.

Up-regulation of telomerase is found in more than 85% of human cancers, while telomerase insufficiency can cause early onset of human aging, highlighting the crucial role of telomerase regulation in both cancer therapy and human aging. On the one hand, we would like to inhibit overexpressed telomerase in tumor cells; on the other hand, we need to maintain the telomerase activity of normal stem cells to prevent early onset of aging.

My research goal is to elucidate mechanisms underlying the regulation of telomerase activity in cancer cells and normal stem cells, and to develop novel approaches for therapeutic intervention of human cancer and early onset of aging. Using both yeast and mammalian systems, I will focus on both (1) the regulation of telomerase activity by post-translational modification of telomerase and telomerase-related factors, and (2) the transcriptional regulation of human telomerase reverse transcriptase.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Liao, Ping *PhD*

Adjunct Assistant Professor, Duke-NUS Medical School

Principal Investigator and Head, Calcium Signalling Laboratory, National Neuroscience Institute (TTSH Campus)

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Website: -



Research Summary

My lab is working on TRP channels in ischemic stroke. A lot of animal work is required in the study for operating on rodents to create stroke model. The operation is done under microscopy which is a good training process for medical students. Furthermore, other techniques are needed in the study, including RT-PCR, immunostaining, western blot, and animal behavior study etc. Our lab is properly funded to carry out relevant studies.

Past and Current Duke-NUS MD Research Students

Lee Rui Zhi (Class of 2018)

Loh Kep Yong (Class of 2019)

LAZATIN Patrisha Campos (Class of 2020)

Student Publications

NA

Lie, Denny Tjiauw Tjoen *MBBS, FRCS (Edin), FAMS*

Senior Consultant, Department of Orthopaedic Surgery, Singapore General Hospital

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Website: -



Research Summary

- Clinical Outcome studies of the surgeries of the knees, shoulders and ankles
- Shoulder kinematics, to map out kinematics in daily activities and thus achieve a better understanding what is normal arc of motion and what constitutes abnormal motion. This has led to a patent designed rig.
- Shoulder tendon research to understand strain in the tendons and how surgery can restore this strain pattern
- Knee kinematics to measure rotation in-vivo, which I believe is the instability the sports patients experience. This would lead to better understanding of knee instability, improved knee surgeries and a new scoring system.
- Gap formation in tendon repair, to validate the strength of current repair techniques

Past and Current Duke-NUS MD Research Students

Rahul Jawa (Class of 2016)

Hang Guanqi (Class of 2017)

Brandon Yew Bao Sheng (Class of 2019)

Cheng Sheng Da, Jowell (Class of 2019; Co-mentor)

Student Publications

NA

Lim, Chwee Ming *MBBS (Singapore), MRCS (Edin), M Med (Otorhinolaryngology) (Singapore)*

Assistant Professor , Yong Loo Lin School of Medicine, National University of Singapore
Consultant Head and Neck Surgeon, Department of Otolaryngology-Head and Neck Surgery, National University Hospital Singapore

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Website: [ResearchGate Profile](#)



Research Summary

Dr Lim is a clinician investigator at the National University of Singapore. His main research focus is on immunology and immunotherapy in head and neck cancer. He runs a lab working on enhancing immune effects and understanding these mechanisms in virally driven head and neck cancer. His other area of research is on robotic and medical device research in optimizing surgical and post treatment care for head and neck cancer patients. He has published around 20 papers, 2 book chapters and holds 3 existing grants to fund his research.

Past and Current Duke-NUS MD Research Students

Xiong Jiaqing (Class of 2015; Co-Mentor)

Hu Chunyan (Class of 2017)

Chong Wei Kin (Class of 2018)

Student Publications

NA

Lim, Darren Wan-Teck *MBBS, MRCP (UK)*

Associate Professor, SingHealth Duke-NUS Oncology Academic Clinical Programme
Senior Consultant, Department of Medical Oncology, National Cancer Centre Singapore
Director, Investigational Medicine Unit, SingHealth

Contact: 6436 8200

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Website: -



Research Summary

My research interests lie in head, neck and lung cancer. I am also actively involved in the development of biomarker correlative clinical trials. As such current projects include developing tissue and imaging biomarkers, biomarker allocated clinical trials and novel technologies to study biomarkers in cancer.

Past and Current Duke-NUS MD Research Students

Ang Siok Hoon (Class of 2013)
Szymon Mikulski (Class of 2013)
Zeng Wanling (Class of 2015)

Student Publications

NA

Lim, Kah Leong *PhD*

Associate Professor, Department of Physiology, National University of Singapore

Associate Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Principal Research Scientist, Neurodegeneration Research Laboratory, National Neuroscience Institute (TTSH Campus)

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Website: ResearchGate Profile



Research Summary

The long term primary goal of my lab is to elucidate the molecular events underlying Parkinson's disease (PD), with the view to develop novel therapies aimed at effectively treating the disease. To realize this goal progressively, our research work focuses on achieving the following inter-related objectives.

1. **MECHANISMS** – To identify and characterize key players/events that contribute to PD pathogenesis
2. **MODELS** – To generate reliable preclinical models of PD that would facilitate drug discovery efforts
3. **MEDICINE** – To develop therapeutic strategies based on the knowledge gleaned from our research work

Our other interest is to explore the relatively poorly characterized but intriguing relationship between PD and cancer. This is a novel angle that we have taken, which we believe might shed important insights into the (paradoxically) shared mechanism that underlies the opposite cellular fates of the two seemingly disparate diseases. We are collaborating with A/Prof Ang Beng Ti and Dr Carol Tang from the Neuro-oncology Program to address this.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Lim, Kiat Hon Tony *MBBS, FRCPath, FRCPA*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant and Head, Department of Anatomical Pathology, Division of Pathology, Singapore General Hospital

Head of Section, Translational Pathology Centre Section, Department of Molecular Pathology, Division of Pathology, Singapore General Hospital

Vice Chair, Strategic Programmes, Pathology Academic Clinical Programme

Clinical Director, Personalised OMIC Lattice for Advanced Research and Improving Stratification (POLARIS)@SingHealth and POLARIS@GIS



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Website: SGH/ PATH ACP/ Gastrointestinal and Hepatobiliary Research Programme/
PubMed

Research Summary

Dr Tony Lim's research interests revolve about the use of latest technologies in the field of molecular genetics and various omics platforms to characterise poorly understood diseases, especially those with higher prevalence among Asians. The aim of this is to develop advanced diagnostic capabilities which can guide therapy. In particular, he is interested in the study of gastrointestinal and liver pathology, biliary tract diseases like pancreatobiliary cancers and lung cancer.

He is the Clinical Director of Personalised OMIC Lattice for Advanced Research and Improving Stratification (POLARIS)@SingHealth, a SingHealth Research Core Platform which utilises Next Generation Sequencing (NGS) technology to conduct tests and aims to translate novel scientific discoveries into clinically validated assays.

Past and Current Duke-NUS MD Research Students

NG Ho Man (Class of 2020; Co-mentor)

Student Publications

NA

Lim, Soon Thye *MBBS, MRCP (UK), FAMS*

Professor, Duke-NUS Medical School

Senior Consultant and Head, Department of Medical Oncology, National Cancer Centre Singapore

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Website: -



Research Summary

We have built a strong lymphoma research team at the National Cancer Centre, with collaborators from DUKE-NUS and various institutions from Singapore. We strongly believe that in lymphoma, especially in T-cell lymphoma which is most prevalent among Asians and not common in Western countries, we can make a significant impact by discovering and developing novel biomarkers to detect, diagnose and follow-up the cases. Equally important, we are keen to identify potential novel therapeutic targets that can be further studied and developed into novel therapy for the patients. In our group, students participate in the many ongoing projects ranging from retrospective dataset analysis, prospective epidemiological study and translational research. Some examples include

1. Examine the clinical and pathological profile of lymphoid malignancies in Singapore with respect to mode of presentation, clinical features, histologic and immunophenotypic distribution. We also prospectively follow-up this patient series to describe and compare cumulative survival, rate of remission, minimal residual disease. We have a database of more than 2000 lymphoid malignancies.
2. Participate in an ongoing prospective epidemiological lymphoma study.
3. Participate in studies that interrogate B cell lymphomas using interphase FISH for genetic alterations and correlating to clinical outcomes
4. Participate in studies that seek to characterize the genomic profile of lymphoma in Asian patients by a) examining mutation landscape of using high-throughput exome sequencing and paired-end tag sequencing technologies, b) gene expression as well as copy number profiling using Affimetrix microarray technology.
5. Participate in studies that validate biomarkers identified against a large number of archival patient material and a clinical database to identify those of particular clinical significance for diagnosis, prognostication or stratification for clinical management.
6. Participate in functional studies and pre-clinical studies that test potential therapeutic targets identified from (4) and (5).

Past and Current Duke-NUS MD Research Students

Jang Jia Hui Isabelle (Class of 2014; Co-mentor)

Sharon Harvinder Kaur Dhillon (Class of 2016)

Koh Jiemin, Jasmin (Class of 2019)

Student Publications

NA

Lim, Swee Han *MBBS, FRCSEd (A&E), FRCP Edin, FAMS (Emergency Med)*

Adjunct Professor, Duke-NUS Medical School

Senior Consultant, Department of Emergency Medicine, Singapore General Hospital

Clinical Professor, Yong Loo Ling School of Medicine, National University of Singapore

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Website: ResearchGate Profile



Research Summary

NA

Past and Current Duke-NUS MD Research Students

Tan Chong Yew (Class of 2016)

Lian Wanxi Tracy (Class of 2017)

Ting Chu En (Class of 2019)

Student Publications

NA

Ling, Khoon Lin *MBBS (Spore), MRCP (UK), MMed (Int Med), DPhil (Oxon), FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

Adjunct Associate Professor, Yong Loo Lin School of Medicine, National University of Singapore

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Website: -



Research Summary

Dr Ling is a gastroenterologist with an interest in the immunology of chronic inflammatory diseases in the gastrointestinal tract. His current research evaluates the immune response in *Helicobacter pylori* gastritis and inflammatory bowel disease and how this may predispose patients to gastrointestinal cancers. Dr Ling is a recipient of the NMRC Clinician Scientist award and receives grant funding from NMRC and BMRC.

Past and Current Duke-NUS MD Research Students

Esther Chang Wei Yin (Class of 2012)

Tay Wei Lin (Class of 2012)

Jan Chng Xue Ren (Class of 2013)

Zhang Zewen (Class of 2013)

Valerie tan Hui Fen (Class of 2013)

Anuradha Pandey (Class of 2015)

Soh Yi Min, Benjy (Class of 2017; Co-mentor)

Student Publications

NA

Liu, Jin *PhD*

Assistant Professor, Centre for Quantitative Medicine, and Programme in Health Services and Systems Research, Duke-NUS Medical School

Contact: 6576 7376

Email: jin.liu@duke-nus.edu.sg

Website: <http://blog.nus.edu.sg/jinliu/>



Research Summary

Dr Liu's main research interest lies in data-driven statistical methods for the analysis of large-scale genetic/genomic studies. His recent works include prognostic studies in cancer genomics, dissection of genetic contributions to complex traits by leveraging regulatory information, and exploration of genetic architecture in multiple tissues. As a quantitative researcher, he has developed various methods, e.g. a collaborative mixed model (CoMM) that efficiently takes into account uncertainty in dissecting genetic contributions by leveraging regulatory information. Dr Liu has been PI, Co-I, collaborator from eight national-level peer-reviewed grants, and he has authored over 30 papers and 2 book chapters.

Past and Current Duke-NUS MD Research Students

Yu Dawen (Class of 2016)

Cheryl Ann Ma Pei Wen (Class of 2018)

Student Publications

Ma, C. A., Liu, J., Wong, S. B., Rajandran, S. N., Xiong, S., & Leung, Y. (2018). The association of plasma IL-1Ra and related cytokines with the severity of osteoarthritis in early knee osteoarthritis. *Osteoarthritis and Cartilage*, 26, S175.

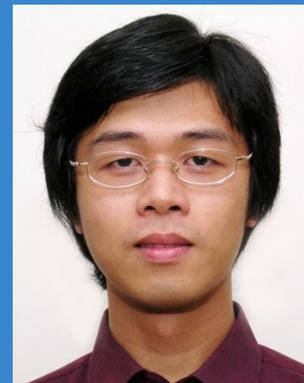
Liu, Nan *PhD*

Adjunct Assistant Professor, Centre for Quantitative Medicine, Duke-NUS Medical School
Principal Research Scientist, Department of Emergency Medicine, Singapore General Hospital
Principal Research Scientist, SingHealth Health Services Research Centre

Contact: 6576 7148

Email: liu.nan@singhealth.com.sg

Website: <https://scholar.google.com.sg/citations?user=ceF698kAAAAJ&hl=en>



Research Summary

Dr Liu is actively working on studies related to emergency care, medical devices, and health services research. He has been developing novel risk stratification tools for emergency department chest pain patients by incorporating heart rate variability, clinical vital signs and 12-lead ECG measures. These new tools could risk stratify patients more accurately in a shorter time, allowing discharge of low-risk chest pain patients in approximately a few minutes instead of the current a few hours, thus saving time and cost while reducing ED overcrowding. Dr Liu has been the Principal Investigator on several national and institutional grants, and he has invented a US patent and published more than 50 peer-reviewed research papers. Dr Liu won the 2015 SingHealth Publish! Award. He also received 2015 Meritorious Paper Award (top 2% in 1200 submissions) from Computers in Biology and Medicine (An Elsevier Journal).

Past and Current Duke-NUS MD Research Students

Ting Boon Ping (Class of 2013; Co-mentor)

Jeremy PONG Zhenwen (Class of 2020)

Marcus Lee Aik Beng (Class of 2015; Co-mentor)

Mas'Uud Ibnu Samsudin (Class of 2018)

Stella Wu Xinzi (Class of 2019)

Student Publications

1. Liu N, Koh ZX, Goh J, Lin Z, Haaland B, **Ting BP**, Ong MEH. Prediction of adverse cardiac events in emergency department patients with chest pain using machine learning for variable selection. *BMC Medical Informatics and Decision Making* 2014; 14(1): 75.
2. Liu N, Goh J, Lin Z, Koh ZX, Fook-Chong S, Haaland B, Wai KL, **Ting BP**, Shahidah N, Ong MEH. Validation of a risk scoring model for prediction of acute cardiac complications in chest pain patients presenting to the emergency department. *International Journal of Cardiology* 2014; 176(3): 1091-1093.
3. Liu N, **Lee MAB**, Ho AFW, Fook-Chong S, Haaland B, Koh ZX, Pek PP, Chua EC, **Ting BP**, Lin Z, Ong MEH. Risk stratification for prediction of adverse coronary events in emergency department chest pain patients with a machine learning score compared with TIMI score. *International Journal of Cardiology* 2014; 177(3): 1095-1097.

Lo, Yew Long *MBBS, M Med (Int Med), Cert. Clin Neurophysiology, FAMS (Neurology)*

Professor, Duke-NUS Medical School

Senior Consultant and Head, Department of Neurology, National Neuroscience Institute

Adjunct Professor, Yong Loo Lin Medical School, National University of Singapore

Contact: 6325 5003

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Website: -



Research Summary

- Functional neurophysiology of cord compression
- Mechanisms of cervical whiplash
- Cortical plasticity changes in spinal cord dysfunction
- Transcranial magnetic stimulation in motor control Neuromuscular transmission in demyelinating neuropathies
- Optical imaging of cortical and cerebellar activity.

Past and Current Duke-NUS MD Research Students

Andrew Green (Class of 2012)

Student Publications

1. Lo YL, **Green A**, Cheong PWT, Fook-Chong S, Guo CM, Yue WM, Tow B, Chen J, Tiruchelvarayan R. Modulation of cortical plasticity by decompression surgery for cervical spondylotic myelopathy. *Clin Neurophysiol* 2014; 125: S(244).

Loh, Amos *MBBS, MRCSEd, MMed (Surgery), FAMS (Paed Surgery)*

Adjunct Assistant Professor, Duke-NUS Medical School

Consultant, Department of Paediatric Surgery, KK Women's and Children's Hospital

Deputy Director, Clinician-Scientist Development Unit, Surgery ACP

Chair, VIVA-KKH Paediatric Brain and Solid Tumour Programme



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Website: Google Scholar Profile

Research Summary

Dr Loh's areas of interest are clinical and translational research in paediatric solid tumours. In particular, his lab focuses on the development of models of paediatric solid tumors for the conduct of preclinical trials of novel potential treatment strategies. He also interested in the discovery of biomarkers for prognostication and therapeutic stratification of paediatric solid tumours, particularly neuroblastoma, osteosarcoma, and paediatric renal tumours, using 'omics and next-generation sequencing platforms.

Dr Loh leads the VIVA-KKH Paediatric Brain and Solid Tumour Programme, a collaboration between KK Hospital, St Jude Children's Research Hospital, and the VIVA Foundation for Children with Cancer. This programme brings together clinicians and scientists with particular interests in this area to cooperate on advancing the care and research of paediatric brain and solid tumours in Singapore.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Loh, Thomas Kwok Seng *MBBS (S'pore), FRCS (Glasg)*

Senior Consultant and Head, Department of Otolaryngology - Head and Neck Surgery, National University Hospital

Associate Professor, Department of Otolaryngology, Yong Loo Lin School of Medicine, National University of Singapore

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Website: -



Research Summary

His main research is in the area of early diagnosis on nasopharyngeal carcinoma (NPC).

Past and Current Duke-NUS MD Research Students

Xiong Jiaqing (Class of 2015)

Student Publications

NA

Loi, Tien Tau Carol *PhD*

Genetic Counsellor, Singapore Health Services Pte Ltd

Associate Faculty, Health and Social Sciences Cluster, Singapore Institute of Technology

Patient Education and Support Advisor, Ostomy Association of Singapore

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Website: <https://scholar.google.com/citations?hl=en&user=jatR4H8AAAAJ>



Research Summary

Dr Carol Loi conducts clinical research focusing on psychosocial and psychological interventions (mindfulness, self-efficacy, self-regulation, and self-compassion), complementary and alternative interventions, and innovative research approaches to address the emotional and mental health needs, particularly among people with chronic illness, cancer and caregivers.

Her recent work has entailed the developing and testing the effects of a psychological intervention using emerging technology (virtual reality) on patients with colorectal cancer, patient and family experiences of enhanced recovery after colorectal surgery (ERAS): a qualitative study, and acupuncture for bowel dysfunction in patients after colorectal surgery: a randomised controlled trial.

Dr Carol Loi has been a PI since 2011 and involved in mentoring honours student's thesis since 2017.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

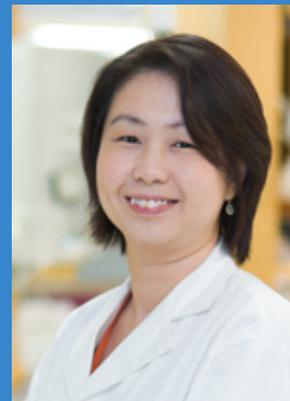
Lok, Shee Mei *PhD*

Professor, Programme in Emerging Infectious Diseases, Duke-NUS Medical School

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Website: ResearchGate Profile



Research Summary

Assistant Professor Lok is one of the recipients for the prestigious National Research Foundation fellowship. Dengue Virus (DENV) infects approximately 100 million people each year. Increased travel, together with global climate change will result in further geographical expansion of the territory of the dengue mosquito vector, *Aedes aegypti*. There is an urgent need to develop safe and effective dengue therapeutics and vaccine.

In vitro experiments have shown that non-neutralizing antibodies can enhance DENV infection of Fc receptor bearing macrophages, one of the natural host cells for the virus. This suggested that the presence of non-neutralizing epitopes in a vaccine could potentially increase the chances that a person who had received the vaccine would develop the severe form of the disease, dengue hemorrhagic fever. For this reason, a more promising approach for engineering an effective DENV vaccine is to focus on including neutralizing epitopes. Thus, mapping of neutralizing epitopes is a necessary component of DENV vaccine research. Furthermore, understanding the neutralization mechanism of antibodies and the entry of DENV into the host cells also could aid in the design of targeted therapeutics.

The research in her laboratory therefore, focuses on the understanding of the pathology of dengue virus infection and the mechanism of neutralization by antibodies and other molecules so as to facilitate the development of suitable vaccines and therapeutics. A combination of molecular, immunological, biochemical and structural techniques (x ray crystallography and cryoEM image reconstruction techniques) will be used to achieve these aims.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Low, Hsiu Ling Andrea

Assistant Professor, Duke-NUS Medical School

Senior Consultant and Head, Dept of Rheumatology and Immunology, Singapore General Hospital

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

Contact: 6326 5904

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Website: https://www.sgh.com.sg/Others/Pages/DoctorDetails.aspx?_id=3885034E-F8BF-4BED-8687-1FE2536C5B2D&name=Dr+Low+Hsiu+Ling,+Andrea&institute=SingaporeGeneralHospital



Research Summary

Dr Andrea Low spearheaded the national systemic sclerosis (SSc) research workgroup comprising Rheumatologists from SGH, Tan Tock Seng Hospital (TTSH) and National University Health System (NUHS), with a focus on the early diagnosis and treatment of SSc, cardiopulmonary and gastrointestinal outcomes. The SSc workgroup has an ongoing prospective SSc database since 2008, including bio-specimen samples. There are ongoing multi-centre investigator-initiated therapeutic trials in SSc (probiotics and autologous haematopoietic stem cell transplant in SSc in collaboration with the SSc workgroup, Haematology department, SGH and USA). She has established collaborations with STIIC, Duke-NUS, NTU and GIS on clinical translational work to discover novel biomarkers and drug targets, and the role of the micro-biome in SSc.

Past and Current Duke-NUS MD Research Students

Tan Tze Chin (Class of 2011; Co-mentor)

Student Publications

1. **Tan, T.C.**, Fang, H., Magder L.S., Petri M.A. Differences between male and female systemic lupus erythematosus in a multiethnic population, *The Journal of rheumatology*, 39(4):759-69, 2012.
2. Tay, P.N., Tan, P., Lan, Y., Leung., C.H., Laban, M., **Tan, T.C.**, Ni, H., Manikandan, J., Rashid S.B., Yan, B., Yap, C.T., Lim, L.H., Lim, Y.C., Hooi, S.C. Palladin, an actin-associated protein, is required for adherens junction formation and intercellular adhesion in HCT116 colorectal cancer cells, *International Journal of Oncology*, 37(4):909-26, 2010.

Low, Jenny Guek Hong *MBBS, MRCP (UK), MPH*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Infectious Diseases, Singapore General Hospital

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Website: -



Research Summary

Dr Jenny Low is a Board Certified senior consultant with the department of Infectious Diseases in Singapore General Hospital. She also has a Master of Public Health from Johns Hopkins University and has been active in dengue clinical research for more ten years. Concurrently, she is also the co-director of the Health Services Research Unit in the Division of Research in SGH. She led the early dengue infection and outcome (EDEN) study that detailed, in several publications, clinical dengue in adults. She was the lead clinical investigator in the first proof-of-concept clinical trial on the use of celgosivir as an anti-dengue drug (CELADEN) in Singapore. She is also the lead clinical investigator for the open-label proof-of-concept trial of Japanese encephalitis and yellow fever vaccinations to test the role of pre-existing cross-reactive antibodies in influencing vaccine efficacy.

Past and Current Duke-NUS MD Research Students

Tan Boon Hian (Class of 2014; Co-mentor)

YIP Lijing, Samantha (Class of 2020)

Toh Liying (Class of 2014; Co-mentor)

Wang Xiaohui (Class of 2016)

Rene Gatsinga (Class of 2018; Co-mentor)

Student Publications

1. Low JG, Sung C, Wijaya L, Wei Y, Rathore AP, Watanabe S, **Tan BH**, Toh L, Chua LT, Hou Y, Chow A, Howe S, Chan WK, Tan KH, Chung JS, Cherng BP, Lye DC, Tambayah PA, Ng LC, Connolly J, Hibberd ML, Leo YS, Cheung YB, Ooi EE, Vasudevan SG. Efficacy and safety of celgosivir in patients with dengue fever (CELADEN): a phase 1b, randomised, double-blind, placebo-controlled, proof-of-concept trial. *Lancet Infect Dis*. 2014 Aug;14(8):706-15.

Low, Kin Huat *PhD*

Professor, Division of Mechatronics and Design, School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore

Contact: 6790 5755

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Website: -



Research Summary

Prof Low's recent research projects relevant to bio-engineering include the following topics:

- Design and development of dispensers for retort tray meal automation
- Motion Planning for Task Manipulation and Handling
- Perching Aircraft Research and Development (DSOCL09292)
- Programme on Aviatin System Block Upgrade and Air Traffic Management modernisation
- Programme on Aviation System Block Upgrade and Air Traffic Management modernisation
- Project CRANEV
- Prototype Development of Assistive Leg Device for Partial-Paralysis Patients
- Task-based Cooperative UAVs in Specified Environments

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Low, Lian Leng *MBBS, MMed(FM), MCFP(S), FCFP(S), MCI(NUS)*

Director, Health Services and Outcomes Research, SingHealth Duke-NUS Family Medicine Academic Clinical Programme

Consultant, Family Medicine and Continuing Care, Singapore General Hospital

Consultant, SingHealth Community Hospital

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Website: <https://scholar.google.com.sg/citations?user=jATpkNwAAAAJ&hl=en>



Research Summary

Dr. Low Lian Leng completed his Master of Clinical Investigation at the National University of Singapore and has a deep interest in health services research, especially in the areas of population health, innovative integrated care delivery models and data analytics. In addition to his appointment as Director, Health Services and Outcomes Research, Family Medicine Academic Clinical Program, he is currently the principal investigator of the Singapore Health Services Regional Health System Population Database project and is co-lead and core lead of the population segmentation and data analytics core respectively in the SingHealth Regional Health System centre grant. To date, Dr. Low had authored more than 30 publications, and published his work on readmission prediction and integrated care delivery models in local and international peer reviewed journals and conferences. He is actively involved in the SingHealth Health Services Research Centre “Health Engagement and Action Laboratories” (HEALs) project that aims to develop integrated communities of care to improve population health in alignment with the quadruple aim.

Past and Current Duke-NUS MD Research Students

Michael Yan Shi (Class of 2019)

NG Choon Wee, Shawn (Class of 2020)

Student Publications

NA

Mahadev, Arjandas *MBBS(S'pore), FRCS (Ed), FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

Adjunct Associate Professor, Department of Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore

Clinical Teacher, Lee Kong Chian School of Medicine, Nanyang Technological University

Associate Programme Director, SingHealth Residency Programme (Orthopaedic Surgery)

Academic Vice Chair, Education, Musculoskeletal Sciences Academic Clinical Programme (MSKSC ACP)



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Research Summary

A/Prof Arjandas's main areas of interest include:

- The understanding of the biomechanics of paediatric trauma and how best to treat to them.
- The biomechanics of the foot and how derangements to its anatomy can affect gait.
- The management and screening of dysplastic hips in the hope of completely removing the need to operate on these conditions.
- Paediatric bone and joint infections and their management to avoid the devastating long term effects.
- Community based projects such the safety of playgrounds equipment and effective screening programmes for common conditions.
- The early recognition of Non Accidental injuries (NAI) and prevention of morbidity arising from it.

There are several on-going projects related to the above subjects that students can contribute at every stage leading to publication. This a great opportunity for clinical research work as there are still many questions regarding the management of conditions within Paediatric Orthopaedics that remain unanswered.

Past and Current Duke-NUS MD Research Students

Andrew Chou Chia Chen (Class of 2015)

TAN Chin Chuen (Class of 2020)

Student Publications

1. **Chou, A. C. C., & Mahadev, A.** (2016). Acute bacterial osteomyelitis in children. *Journal of Orthopaedic Surgery*, 24(2), 250.
2. **Chou, A. C. C., & Mahadev, A.** (2016). The use of C-reactive protein as a guide for transitioning to oral antibiotics in pediatric osteoarticular infections. *Journal of Pediatric Orthopaedics*, 36(2), 173-177.

Malhotra, Chetna *MBBS, MD, MPH*

Assistant Professor, Lien Centre for Palliative Care and Programme in Health Services and Systems Research, Duke-NUS Medical School

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Website: ResearchGate Profile



Research Summary

Dr Malhotra's research focuses on end-of-life and palliative care of patients with cancer and non-cancer life limiting illnesses. Her recent work has entailed eliciting treatment preferences of general population, patients and their caregivers and treatment recommendations from physicians through discrete choice experiments. In her ongoing work, she is evaluating the effectiveness of advance care planning in meeting preferences of patients with advanced heart failure. She is also evaluating the quality of communication between patients and their physicians, including the extent to which physicians express empathy and the patients are involved in making decisions for their own treatment. She is involved with a longitudinal study and a multi-country survey of patients with advanced cancer focusing on several domains of their quality of life, extent of symptom management and perceived quality of care among patients.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Malhotra, Rahul *MBBS, MD, MPH*

Assistant Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

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Website: Google Scholar Profile



Research Summary

Dr. Malhotra's current research mainly focuses in two areas, namely health of older adults and obesity. His research in the area of health of older adults includes that on risk factors and consequences of chronic diseases, life-course influences on older adult health outcomes and physical, mental and social facets of care giving for the elderly. His research in the area of obesity includes characterization of weight trajectories over the life course. He also maintains a research interest in maternal and child health, and health of vulnerable population groups in developing country settings. He has authored or coauthored over 40 peer reviewed papers in the medical and public health literature. Journals in which he has published include International Journal of Epidemiology, Journal of the American Geriatrics Society, Quality of Life Research, and Hypertension Research.

Past and Current Duke-NUS MD Research Students

Noda Misa (Class of 2014)	I Gusti Ngurah Prawira Suartha Oka (Class of 2017; Co-mentor)
Huang Shiqi Joan (Class of 2015)	Fung Foon Yin (Class of 2019; Co-mentor)
Glenn Goh (Class of 2015; Co-mentor)	Qian Lian (Class of 2019)
He Song (Class of 2015; Co-mentor)	CHUA Ing Loon, Sean (Class of 2020; Co-mentor)
Siew Jia Yun Shayna (Class of 2015; Co-mentor)	
Carmen Lim Zhiruo (Class of 2016; Co-mentor)	
Jeffrey Siow Yong Ming (Class of 2017)	

Student Publications

- Koh H, Ee TX**, Malhotra R, Allen JC, Tan TC, Østbye T. Predictors and adverse outcomes of inadequate or excessive gestational weight gain in an Asian population. *J Obstet Gynaecol Res.* 2013 May;39(5):905-13.
- Kouk LJ, Neo GH**, Malhotra R, Allen JC, Beh ST, Tan TC, Ostbye T. A prospective study of risk factors for first trimester miscarriage in Asian women with threatened miscarriage. *Singapore Med J.* 2013 Aug;54(8):425-31.
- Wu LC**, Lie D, Malhotra R, Allen JC Jr, Tay JS, Tan TC, Ostbye T. What factors influence midwives' decision to perform or avoid episiotomies? A focus group study. *Midwifery.* 2013 Aug;29(8):943-9.
- Wu LC**, Malhotra R, Allen JC Jr, Lie D, Tan TC, Østbye T. Risk factors and midwife-reported reasons for episiotomy in women undergoing normal vaginal delivery. *Arch Gynecol Obstet.* 2013 Dec;288(6):1249-56.
- Ee TX**, Allen JC Jr, Malhotra R, **Koh H**, Østbye T, Tan TC. Determining optimal gestational weight gain in a multiethnic Asian population. *J Obstet Gynaecol Res.* 2014 Apr;40(4):1002-8.
- Noda M**, Malhotra R, DeSilva V, Sapukotana P, DeSilva A, Kirkorowicz J, Allen J, Ostbye T. Occupational risk factors for low back pain among drivers of three-wheelers in Sri Lanka. *Int J Occup Environ Health.* 2014 Aug 18:2049396714Y0000000071. [Epub ahead of print]
- Goh G**, Tan NC, Malhotra R, Padmanabhan U, Barbier S, Allen JC Jr, Østbye T. Short-term trajectories of use of a caloric-monitoring mobile phone app among patients with type 2 diabetes mellitus in a primary care setting. *J Med Internet Res.* 2015 Feb 3;17(2):e33.
- Chee Wai Ku**, John C. Allen Jr, Rahul Malhotra, Han Chung Chong, Nguan Soon Tan, Truls Østbye, **Sze Min Lek**, Desiree Lie, and Thiam Chye Tan. How can we better predict the risk of spontaneous miscarriage among women experiencing threatened miscarriage? 2015. In press.

Matchar, David B. MD, FACP, FAHA

Professor and Programme Director, Programme in Health Services and Systems Research, Duke-NUS Medical School

Professor, Medicine, Duke University

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Research Summary

My research relates to clinical practice improvement - from the development of clinical policies to their implementation in real world clinical settings. Most recently my major content focus has been cerebrovascular disease. Other major clinical areas in which I work include the range of disabling neurological conditions, cardiovascular disease, aging, and complex/chronic illness.

Methodologically, my work relies on analytic strategies such as meta-analysis, simulation, decision analysis and cost-effectiveness analysis; the goal is to balance methodological rigor with the practical needs of decision makers. Illustrative current projects include development of simulations of various aspects of the Singapore health system, trials of innovative approaches to care (e.g. integrated transitional care, falls prevention, apps for management of insulin), and population survey studies to assess health and social service needs.

I remain clinically active part time in Internal Medicine in the US.

Past and Current Duke-NUS MD Research Students

Alfred Ka-Shing Wong (Class of 2016)

Student Publications

NA

Mehta, Jodhbir *BSc, MBBS, M.D, FRCOphth, FRCS(Ed)*

Head and Senior Consultant, Corneal and External Eye Disease Service, Singapore National Eye Centre

Adjunct Professor, Department of Ophthalmology, Yong Loo Lin School of Medicine, National University of Singapore

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Website: Google Scholar Profile



Research Summary

A/Prof Mehta's research interests cover all aspects of corneal external disease and refractive surgery from basic science, translational and clinical research. These include laboratory based research investigating new stem cell based therapies e.g. culturing of human corneal endothelial cells and studies on patients with corneal genetic disorders. Translational research involves the development of an artificial cornea device, new instruments for corneal transplantation to improve patient outcomes, and effects of femtosecond lasers in corneal/refractive surgery as well as development of novel drug delivery devices.

His clinical based research involves research into imaging devices for the cornea, case comparative cohorts of new selective tissue transplantation procedures. He is also lead PI for Singapore for a large multicentre infectious keratitis study.

Past and Current Duke-NUS MD Research Students

Zhang Ting (Class of 2012)

Benjamin Mo-Yan Wu (Class of 2016)

Student Publications

1. **Zhang T**, Yam GH, Riau AK, Poh R, Allen JC, Peh GS, Beuerman RW, Tan DT, Mehta JS. The effect of amniotic membrane de-epithelialization method on its biological properties and ability to promote limbal epithelial cell culture. *Invest Ophthalmol Vis Sci.* 2013 Apr 30;54(4):3072-81.
2. **Wu B**, Williams GP, Tan A. Mehta JS. A comparison of Different operating Systems for Femtosecond Lasers in cataract Surgery. *J Ophthalmol* 2015.

Narasimhalu, Kaavya *M.D, PhD*

Adjunct Assistant Professor, Duke-NUS Medical School

Associate Consultant, Department of Neurology, National Neuroscience Institute (SGH Campus)

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Website: <https://scholar.google.com.sg/citations?user=PE12GyQAAAAJ&hl=en&oi=ao>



Research Summary

I am interested in patients with vascular cognitive impairment and vascular behavioral disorders (specifically anxiety and depression). At present, I am focusing on post stroke cognitive impairment, anxiety and depression and their association with imaging markers of small vessel disease. In future, I will be expanding this interest to look at new modalities of imaging such as myelin water imaging, to look into genetic variants in small vessel disease amongst Asian stroke patients, and the association of both with cognitive impairment, anxiety, and depression.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Ng, Quan Sing *MBBS (London), MD (London), MRCP (UK)*

Consultant, Department of Medical Oncology, National Cancer Centre Singapore

Adjunct Investigator, Investigational Medicine Unit, SingHealth

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

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Website: -



Research Summary

Functional imaging describes the use of radiological techniques to evaluate tissue biology, in addition to high quality anatomical images. A myriad of imaging techniques, including MRI, CT, PET and USS have been developed that allows quantitative and semi-quantitative measurements of various facets of tumour physiology and biology, including metabolism, angiogenesis, cellular proliferation and hypoxia. Our group is actively involved in pre-clinical applications of functional imaging, as well as developing functional imaging as a biomarker in early phase clinical trials.

The unique nature of functional imaging research will allow the student to appreciate the multi-disciplinary interactions between diagnostic radiologists, medical and radiation oncologists, physicists and basic scientists. The student will gain experience in the design and day-to-day running of early phase cancer trials, acquire knowledge on various imaging techniques and interpretation of radiological images, and learn about the physics and mathematics of tracer kinetic modelling.

Past and Current Duke-NUS MD Research Students

Szymon Mikulski (Class of 2013; Co-mentor)

Teo Qiao Qi (Class of 2015)

Student Publications

1. **Teo QQ**, Thng CH, Koh TS, Ng QS. Dynamic contrast-enhanced magnetic resonance imaging: applications in oncology. *Clin Oncol (R Coll Radiol)*. 2014 Oct;26(10):e9-20. doi: 10.1016/j.clon.2014.05.014.

Ng, Wai Hoe *MBBS, MD (NUS), FRACS (Neurosurgery), FAMS (Neurosurgery)*

Associate Professor, Duke-NUS Medical School

Academic Chair, SingHealth Duke-NUS Neuroscience Academic Clinical Programme

Medical Director, National Neuroscience Institute

Senior Consultant, Department of Neurosurgery, National Neuroscience Institute



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Website: -

Research Summary

1. Brain Tumour Research- focus on gliomas
2. Surgical navigation and imaging
3. Neurotechnology (MedTech)

Past and Current Duke-NUS MD Research Students

Md. Tauseef Khalid (Class of 2016)

WU Yilong (Class of 2020)

Chan Yuan-Lang Brian (Class of 2017)

Student Publications

NA

Ng, Yee Sien *MBBS (S'pore), MRCP (UK), FAMS*

Associate Professor, Duke-NUS Medical School

College Master, Seah Cheng Siang College, Duke-NUS Medical School

Senior Consultant, Department of Rehabilitation Medicine, Singapore General Hospital, SingHealth

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

Physician Faculty, General Medicine Residency and Rehabilitation Medicine Senior Residency



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Research Summary

Dr Ng does clinical research widely on rehabilitation, medicine and disability. His areas of work include:

1. Disease and disability epidemiology including predictors of outcome of patients with stroke, traumatic brain injury, minimally responsive states, general internal medicine and various neurologic and musculoskeletal disabling disorders.
2. Physiology of common syndromes in rehabilitation including spasticity and tone disorders, frailty, deconditioning, and gait disorders with the use of EMG and gait analysis.
3. Medical therapeutics involving both pharmacological and non-medical modalities. This includes the use of neurostimulants and antidepressants; together with the use of rehabilitation modalities including non-invasive brain stimulation and music therapy.
4. Rehabilitation and Medical Technology specifically the use of rehabilitation robotics, electrical stimulation and virtual reality.

The Department of Rehabilitation Medicine has ongoing clinical databases in general rehabilitation and traumatic brain injury with ongoing collaborations with Faculties of Engineering and Computer Sciences in Singapore's tertiary institutes and polytechnics.

Past and Current Duke-NUS MD Research Students

Tan Chunzhen (Class of 2014)
 Choo Wan Li Amanda (Class of 2015)
 Choo Min (Class of 2015, Co-mentor)
 Chong Xiao Yun (Class of 2016)
 Low Jia Wen Glenn (Class of 2017)

Tan Wan Ying (Class of 2018)
 Soh Yupei, Nicole (Class of 2019)
 CHIA Ming Hao, Dominic (Class of 2020)
 LIM Ying Jun (Class of 2020; Co-mentor)

Student Publications

1. **Tan C**, Ng YS, Koh GC, De Silva DA, Earnest A, Barbier S. Disability impacts length of stay in general internal medicine patients. *J Gen Intern Med*. 2014 Jun;29(6):885-90.
2. Samuel GS, **M Choo**, Oey NE, H Ju, WY Chan, Kok S, Van Dongen AMJ, Ge Y, Ng YS. Combining Levodopa and Virtual-Reality Based Therapy in Acute Stroke Upper Limb Rehabilitation: A Pilot Case Series. In press. *Singapore Med J*.
3. Samuel GS, **Choo M**, Chan WY, Kok S, Ng YS. The use of virtual reality-based therapy to augment poststroke upper limb recovery. *Singapore Med J*. 2015 Jul;56(7):e127-30.

Ngeow, Joanne *MBBS, MRCP, MPH*

Assistant Professor, Oncology Academic Clinical Programme

Head and Consultant, Cancer Genetics Service, Division of Medical Oncology, National Cancer Centre Singapore

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Website: Google Scholar Profile



Research Summary

Dr Joanne Ngeow, MBBS, MRCP, MPH, is Consultant, Division of Medical Oncology at the National Cancer Centre Singapore. Dr Ngeow currently leads the Cancer Genetics Service at the National Cancer Centre Singapore with an academic interest in hereditary cancer syndromes and translational clinical cancer genomics. She was awarded consecutive fellowships by the National Medical Research Council and the Ambrose Monell Foundation to complete formal clinical and bench training in Cancer Genomic Medicine at the Genomic Medicine Institute, Cleveland Clinic, Ohio. She is an Editorial Board Member for Endocrine Related Cancer. Dr Ngeow was awarded the NMRC Transition Award in 2014 aimed at understanding how gene-environmental interactions predisposes to cancer initiation and progression. Available projects suitable for students range from health system and services research on the role of genetic testing in Singapore/ Asia as well as translational research projects exploring novel cancer susceptibility genes in familial cancer.

Past and Current Duke-NUS MD Research Students

Toh Ming Ren (Class of 2019)

Student Publications

NA

Ong, Biau Chi

Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Anaesthesiology, Singapore General Hospital

Chairman Medical Board, Sengkang Health

Clinical Associate Professor, Yong Loo Lin School of Medicine, National University of Singapore



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Website: -

Research Summary

My interest is in patient safety and clinical quality improvement including looking at patient flow, outcomes and optimizing resources as well as access to care. My interest are also in safety in medication delivery, process improvement, hard wiring excellence and human factors. Previous work includes looking at medication delivery and errors before and after implementation of electronic ordering and closed loop medication processes. Other areas of interest include looking at admission patterns to various high resource areas like OT and ICUs, and also into cancellations and optimization of these resources.

Past and Current Duke-NUS MD Research Students

Low Tiong Keng William (Class of 2017)

Tsang Yun Yi Laura (Class of 2018)

NG Guan Yee Dave (Class of 2020)

SIM Cheng Teck, Clement (Class of 2020)

Student Publications

NA

Ong, Chin-Ann Johnny *MBBS, MRCS, PhD, FRCS*

Assistant Professor, SingHealth Duke-NUS Oncology Academic Clinical Programme

Clinical Tutor, Duke-NUS Medical School

Clinical Tutor, Yong Loo Lin School of Medicine, National University of Singapore

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Website: https://www.researchgate.net/profile/Johnny_Ong



Research Summary

Dr Ong's research focuses largely on advance metastatic cancers such peritoneal carcinomatosis recurrent sarcoma as well as head and neck cancers. His current work focuses on the study of molecular changes in disseminated cancer cells to understand cancer metastasis. He is particularly interested in deciphering the tumour biology by understanding the underlying molecular mechanism. By harnessing this knowledge, he hopes glean insights to potential key biomarkers which could serve as diagnostic or prognostic markers as well as identify novel therapeutic strategies. His recent publication in *Oncotarget* elucidated a 3 gene immunohistochemical panel that could be used as an adjunct for stratification of head and neck squamous cell cancer. Dr Ong has recently received the NMRC Transition Award in 2017 and he has authored numerous papers published in high impact factor journals.

Past and Current Duke-NUS MD Research Students

Li Ke (Class of 2016; Co-mentor)

Koh Kay Nguan, Kelvin (Class of 2016; Co-mentor)

Nicholas Shannon (Class of 2017; Co-mentor)

Student Publications

Ong C.-A. J.*, **Shannon N. B.***, Mueller S.*, **Lek S. M.***, Qiu X., Chong F. T., **Li K.**, **Koh K.**, et al. A three gene immunohistochemical panel serves as an adjunct to clinical staging of patients with head and neck cancer. *Oncotarget*, 8(45), 79556–79566. *Equal Contributions

Ong, Eng Hock Marcus *MBBS, FRCS, MPH*

Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

Senior Consultant, Director of Research and Clinician Scientist, Department of Emergency Medicine, Singapore General Hospital

Director, Health Services Research and Biostatistics Unit, Division of Research, in SGH

Director, Unit for Prehospital Emergency Care in Ministry of Health, Singapore

Senior Consultant, Hospital Service Division, Ministry of Health



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Research Summary

A/Prof Ong has been actively involved in research, education and clinical services for more than 10 years. His research studies focus predominantly on pre-hospital emergency care, medical devices, and health services research. His research has addressed issues such as out-of-hospital cardiac arrest (OHCA), improving ambulance deployment, acute myocardial infarction, etc. In addition, he was awarded the Clinician Scientist Award by the National Medical Research Council for his Pan-Asian Resuscitation Outcomes Study and has received multiple accolades for his research work. A/Prof Ong has published over 100 papers in international and local peer-reviewed journals such as Journal of the American Medical Association, American Journal of Medicine, Critical Care Medicine, Resuscitation, Annals of Emergency Medicine, American Journal of Emergency Medicine, Singapore Medical Journal, Annals of the Academy of Medicine Singapore etc.

Past and Current Duke-NUS MD Research Students

Chin Yun Xin (Class of 2017)

Annisa Dewi Utami Rakun (Class of 2018)

Lim Yen Yin, Jasmine (Class of 2019)

Stephanie Senna (Class of 2019; Co-mentor)

Ting Chu En (Class of 2019; Co-mentor)

Stella Wu Xinzi (Class of 2019; Co-mentor)

Jeremy PONG Zhenwen (Class of 2020; Co-mentor)

TAY Jia Min, Pamela (Class of 2020)

Student Publications

- Ong MEH, Ng CHL, **Goh KJY**, Liu N, Koh ZX, Shahidah N, Zhang T, Fook-Chong S, Lin Z. Prediction of cardiac arrest in critically ill patients presenting to the emergency department using a machine learning score incorporating heart rate variability compared with MEWS. *Critical Care* 2012; 16(3): R108.
- Ong MEH, **Goh JY**, Fook-Chong S, Haaland B, Khin LW, Koh ZX, Shahidah N, Lin Z. Heart Rate Variability Risk Score for Prediction of Acute Cardiac Complications in ED Chest Pain Patients. *American Journal of Emergency Medicine* 2013; 31(8):1201-7
- Liu N, Koh ZX, **Goh JY**, Lin Z, Haaland B, **Ting BP**, Ong ME. Prediction of adverse cardiac events in emergency department patients with chest pain using machine learning for variable selection. *BMC Med Inform Decis Mak.* 2014 Aug 23;14:75.
- Liu N, Goh J, Lin Z, Koh ZX, Fook-Chong S, Haaland B, Wai KL, **Ting BP**, Shahidah N, Ong ME. Validation of a risk scoring model for prediction of acute cardiac complications in chest pain patients presenting to the Emergency Department. *Int J Cardiol.* 2014 Oct 20;176(3):1091-3.
- Liu N, **Lee MA**, Ho AF, Haaland B, Fook-Chong S, Koh ZX, Pek PP, Chua EC, **Ting BP**, Lin Z, Ong ME. Risk stratification for prediction of adverse coronary events in emergency department chest pain patients with a machine learning score compared with the TIMI score. *Int J Cardiol.* 2014 Dec 20;177(3):1095-7.
- Lai H**, Choong CV, Fook-Chong S, Ng YY, Finkelstein EA, Haaland B, Goh ES, Leong BS, Gan HN, Foo D, Tham LP, Charles R, Ong ME; PAROS study group. Interventional strategies associated with improvements in survival for out-of-hospital cardiac arrests in Singapore over 10 years. *Resuscitation.* 2015 Apr;89:155-61.
- Boh C**, Li H, Finkelstein E, Haaland B, Xin X, Yap S, Pasupathi Y, Ong MEH. Factors Contributing to Inappropriate Visits of Frequent Attenders and their Economic Effects at an Emergency Department in Singapore. *Society for Academic Emergency Medicine* 2015; 22(9): 1025-33.

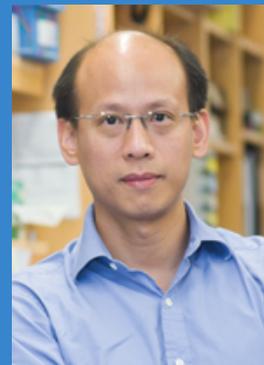
Ong, Sin Tiong *MA, MBBCh, MRCP (UK), ABIM (Internal Medicine, Hematology, and Medical Oncology)*

Associate Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

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Research Summary

The research themes of this laboratory are translational in nature, and centre on gaining a better understanding of the basic pathophysiology of human malignancies in order to improve the management and treatment of patients with cancer.

Several projects in the laboratory are guided by the overarching hypothesis that dysregulated mRNA translation is essential to cellular transformation. This hypothesis is supported by prior work from our group and others which have demonstrated that the aberrant activation of several signaling pathways associated with the oncogenic state (including MAPK and PI3K/Akt) impinge on the cellular machinery that regulates both cap-dependent and cap-independent mRNA translation. These observations suggest that dysregulated translation contributes to cellular transformation via altering the expression of genes that control cellular proliferation and/or death. Importantly, these data indicate that therapeutic targeting of dysregulated translation is a valid strategy to test in the cancer clinic.

Specific projects in the laboratory include: investigating the role of cap-dependent and cap-independent translation in various human malignancies, the identification and development of small molecules which can target aberrant mRNA translation in cancer cells, and determining the identity of genes which are dysregulated at the level of translation. Other preclinical projects include the use of novel approaches to identify the molecular signature of drug resistance in primary human cancer tissues, as well as the genetic abnormalities that confer stem cell-like properties to human cancers, including the ability to self-renew. Finally, our group is also conducting an international Phase I study testing the feasibility and efficacy of targeting the mTOR kinase (a central regulator of eukaryotic mRNA translation) in patients with drug-resistant chronic myelogenous leukaemia.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Ooi, Eng Eong *BMBS, FRCPath, PhD*

Professor and Programme Deputy Director, Programme in Emerging Infectious Diseases,
Duke-NUS Medical School

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Research Summary

The global emergence of epidemic dengue is fueled by an incomplete understanding of the determinants of both immunity and pathogenesis. Our laboratory aims to contribute to an improved understanding of dengue by positioning itself at the interface between clinical epidemiology, virology and immunology. Specifically, we are interested in elucidating: (1) how antibodies either protect against or enhance dengue virus infection and (2) what viral factors determine the outcome of infection or transmissibility and hence explain its epidemiological phenotype. By elucidating these mechanisms, we hope to contribute to the development of effective vaccines or therapeutics.

While the primary focus of the laboratory is on dengue, we also take advantage of the opportunities presented in prospective clinical studies to examine the etiology of acute febrile illnesses.

Past and Current Duke-NUS MD Research Students

Shera Chaterji (Class of 2011)

Ryan Wu Songlian (Class of 2013)

Tan Boon Hian (Class of 2014; Co-mentor)

Toh Liying (Class of 2014)

Chew Jun Jie (Class of 2016)

Wang Xiaohui (Class of 2016; Co-mentor)

YIP Lijing, Samantha (Class of 2020; Co-mentor)

Student Publications

1. **Chaterji S**, Allen JC Jr, Chow A, Leo YS, Ooi EE. Evaluation of the NS1 rapid test and the WHO dengue classification schemes for use as bedside diagnosis of acute dengue fever in adults. *Am J Trop Med Hyg.* 2011 Feb;84(2):224-8.
2. Low JG, Ong A, Tan LK, **Chaterji S**, Chow A, Lim WY, Lee KW, Chua R, Chua CR, Tan SW, Cheung YB, Hibberd ML, Vasudevan SG, Ng LC, Leo YS, Ooi EE. The early clinical features of dengue in adults: challenges for early clinical diagnosis. *PLoS Negl Trop Dis.* 2011;5(5):e1191.
3. **Wu RS**, Chan KR, Tan HC, Chow A, Allen JC Jr, Ooi EE. Neutralization of dengue virus in the presence of Fc receptor-mediated phagocytosis distinguishes serotype-specific from cross-neutralizing antibodies. *Antiviral Res.* 2012 Dec;96(3):340-3.
4. Low JG, Sung C, Wijaya L, Wei Y, Rathore AP, Watanabe S, **Tan BH, Toh L**, Chua LT, Hou Y, Chow A, Howe S, Chan WK, Tan KH, Chung JS, Cherng BP, Lye DC, Tambayah PA, Ng LC, Connolly J, Hibberd ML, Leo YS, Cheung YB, Ooi EE, Vasudevan SG. Efficacy and safety of celgosivir in patients with dengue fever (CELADEN): a phase 1b, randomised, double-blind, placebo-controlled, proof-of-concept trial. *Lancet Infect Dis.* 2014 Aug;14(8):706-15.

Østbye, Truls MD, MPH, PhD, FFPH (UK)

Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

Professor and Director of Global Health, Community and Family Medicine, Duke University



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Research Summary

Prof. Østbye, a chronic disease epidemiologist and public health researcher, has a special interest in obesity, diseases of the elderly and global health. In Singapore, his current research includes studies of: health and lifestyles of elderly Singaporeans, physical, mental and social facets of care giving for elderly Singaporeans, risk factors for threatened and complete miscarriages, and evaluation of workplace health promotion programs. His current research in the USA includes studies of: obesity in the postpartum period and in children, use of clinical preventive services, cognitive decline, health and social support among the elderly, doctor-patient communication, and occupational health surveillance among health care workers. His global health projects include those of health and illness among textile workers in Sri Lanka, febrile illness in Sri Lanka and secondary analysis of DHS Indian datasets for maternal and child health outcomes. He currently is the PI of two R01 grants from the NIH and he has authored or coauthored over 250 peer reviewed papers in the medical and public health literature.

Past and Current Duke-NUS MD Research Students

Carmen Lim Zhiruo (Class of 2016)	Fung Foon Yin (Class of 2019; Co-mentor)
I Gusti Ngurah Prawira Suartha Oka (Class of 2017)	CHUA Ing Loon, Sean (Class of 2020)
Jeffrey Siow Yong Ming (Class of 2017; Co-mentor)	ZHANG Xiaoxuan (Class of 2020; Co-mentor)
Guo Ying (Class of 2017; Co-mentor)	
Sandra Lynn Jaya (Class of 2018; Co-mentor)	
Shi Qi Zhu (Class of 2018)	

Student Publications

- Koh H, Ee TX**, Malhotra R, Allen JC, Tan TC, Østbye T. Predictors and adverse outcomes of inadequate or excessive gestational weight gain in an Asian population. *J Obstet Gynaecol Res*. 2013 May;39(5):905-13.
- Kouk LJ, Neo GH**, Malhotra R, Allen JC, Beh ST, Tan TC, Ostbye T. A prospective study of risk factors for first trimester miscarriage in Asian women with threatened miscarriage. *Singapore Med J*. 2013 Aug;54(8):425-31.
- Wu LC**, Lie D, Malhotra R, Allen JC Jr, Tay JS, Tan TC, Ostbye T. What factors influence midwives' decision to perform or avoid episiotomies? A focus group study. *Midwifery*. 2013 Aug;29(8):943-9.
- Wu LC**, Malhotra R, Allen JC Jr, Lie D, Tan TC, Østbye T. Risk factors and midwife-reported reasons for episiotomy in women undergoing normal vaginal delivery. *Arch Gynecol Obstet*. 2013 Dec;288(6):1249-56.
- Ee TX**, Allen JC Jr, Malhotra R, **Koh H**, Østbye T, Tan TC. Determining optimal gestational weight gain in a multiethnic Asian population. *J Obstet Gynaecol Res*. 2014 Apr;40(4):1002-8.
- Noda M**, Malhotra R, DeSilva V, Sapukotana P, DeSilva A, Kirkorowicz J, Allen J, Ostbye T. Occupational risk factors for low back pain among drivers of three-wheelers in Sri Lanka. *Int J Occup Environ Health*. 2014 Aug 18:2049396714Y0000000071. [Epub ahead of print]
- Goh G**, Tan NC, Malhotra R, Padmanabhan U, Barbier S, Allen JC Jr, Østbye T. Short-term trajectories of use of a caloric-monitoring mobile phone app among patients with type 2 diabetes mellitus in a primary care setting. *J Med Internet Res*. 2015 Feb 3;17(2):e33.
- Chee Wai Ku**, John C. Allen Jr, Rahul Malhotra, Han Chung Chong, Nguan Soon Tan, Truls Østbye, **Sze Min Lek**, Desiree Lie, and Thiam Chye Tan. How can we better predict the risk of spontaneous miscarriage among women experiencing threatened miscarriage? 2015. In press.

Ozdemir, Semra *PhD*

Assistant Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

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Research Summary

Dr. Ozdemir's main research area is medical decision making and health economics. Her research focuses on understanding how individuals make health-related decisions and developing interventions to help individuals make better decisions. She has developed numerous discrete-choice experiment surveys to quantify patient and caregiver treatment preferences, and physician treatment recommendations in a variety of therapeutic areas, including cancer, end-stage renal disease, Crohn's disease, multiple sclerosis and bipolar disorder. Her research has been published in both economics and medical journals, including the Journal of Health Economics, Health Economics, Value in Health, Risk Analysis, Gastroenterology, and Medical Care.

Research Interests: medical decision making, health economics, behavioral economics, stated-preference methods, end-of-life and palliative care, and chronic disease.

Past and Current Duke-NUS MD Research Students

Andalib Hossain (Class of 2016;Co-mentor)

Wu Hong King (Class of 2017;Co-mentor)

Student Publications

NA

Pervaiz, Shazib *MBBS, PhD*

Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Professor, Department of Physiology, Yong Loo Lin School of Medicine, National University of Singapore

Professor, Graduate School for Integrative Sciences and Engineering, National University of Singapore

Professor, Singapore-MIT Alliance



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Research Summary

- Receptor and non-receptor Death Signaling
- Regulation of Cell Death Signaling in Cancer Cells
- Reactive Oxygen Species and Cell Fate Decisions
- Bcl-2 Family and Mitochondrial Physiology
- Redox Status and Cancer Stem Cells
- Autophagy and Cancer
- Novel Drug Discovery

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Pettersson, Sven *MD, PhD*

Professor, Metabolic Disease, Lee Kong Chian School of Medicine, Nanyang Technological University

Principal Investigator, Microbiota Host Interactions, Nutrigenomics & Metabolism Laboratory

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Website: -



Research Summary

We are interested in how microbes influences host physiology. More specifically we are studying the gut brain communication and aiming to identify the signaling pathways and metabolites by which microbes, localized in the gut, can impact on neurological development and function. We are using animal models where mice are kept under germ free conditions thus allowing for controlled and defined microbe-host interactions. We are also using ex-vivo tissue cultures to study microbe-cell interactions. To obtain meaningful information from the complex bacteria-host communication, a systems biology approach has been established. This includes use of metagenomic, metatranscriptomic profiling of the bacteria and metabonomics using mass spectrometry and NMR.

Past and Current Duke-NUS MD Research Students

Yang Jiajing Edwin (Class of 2016)

Student Publications

NA

Puar, Hai Kiat Troy *MBBS, MRCP (UK)*

Consultant, Department of Endocrinology, Changi General Hospital

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Website: <https://scholar.google.com/citations?user=PVNmE5YAAAAJ&hl=en>;

https://www.researchgate.net/profile/Troy_Puar2



Research Summary

Dr Troy conducts clinical research on patients with adrenal conditions (primary aldosteronism, pheochromocytomas, adrenal tumors, and adrenal insufficiency) and secondary hypertension. He has published on various aspects of endocrinology, including adrenal disease, diabetes mellitus and fractures. Currently, he is doing several clinical trials on patients with primary aldosteronism (also known as Conn's syndrome). Primary aldosteronism is estimated to be the most common secondary cause of hypertension, with a prevalence of 5-10% amongst all patients with hypertension. With a national Young Investigator award, he is currently leading a multi-centre trial, including all restructured hospitals in Singapore, using ¹¹C-metomidate PET/CT imaging to identify patients with surgically-curable primary aldosteronism. He is a PI and co-PI of several other clinical studies. He enjoys collaborating with investigators of different backgrounds and specialties, and is also keen at mentoring students for clinical and research work.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Quah, Stella R. *PhD, MSc*

Adjunct Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

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Research Summary

Prof Quah's research involves medical sociology, family sociology and public policy to analyse health services utilization; self-medication; health risk behavior on smoking, alcohol consumption, diet and exercise; socio-cultural factors in infectious diseases, heart disease and cancer; public health, epidemiology and the governance of epidemics. Examples: Quah SR (2014) Elsevier Reference Module in Biomedical Sciences; Quah (2015) "Sociology and psychology in public health" in *Oxford Textbook on Global Public Health*, vol 2: 695-708. For my research on the impact of mental illness in the family and the strain of family caregiving see Quah (2014) *Sociology of Health & Illness*, 2014, 36, 4:596-612; and Quah (2015) Routledge Handbook of Families in Asia, pp. 359-374. For my research on the link between formal health services and family caregiving see Quah (2015) "Partnership: the missing link in the process of de-institutionalization of mental health care", *International Journal of Health Services*, [Epub ahead of print].

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Quek, Richard Hong Hui *MBBS, MRCP (UK)*

Senior Consultant and Deputy Head, Department of Medical Oncology, National Cancer Centre Singapore

Programme Director, Medical Oncology Residency, SingHealth / National Cancer Centre Singapore

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Research Summary

Dr Quek's chief research interest is primarily focused on translational therapeutics, developing new molecularly targeted therapeutics in both sarcoma and lymphoma in an academic environment. Since returning from his fellowship at the Centre for Sarcoma and Bone Oncology in Dana-Farber Cancer Institute (DFCI), he initiated the development of National Cancer Centre Singapore's efforts in developing a soft tissue/bone and gastrointestinal stromal tumor (GIST) sarcoma database; the first of its kind in Singapore. From this robust database system, the research team has analyzed and reported on various unique subsets of sarcomas, correlating preclinical findings with patient outcome measures. Additionally, Dr Quek serves as Principal Investigator in various Phase II/III studies testing new drug compounds in patients with advanced sarcomas and GIST.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Rajadurai, Victor Samuel *MBBS, MD (Paeds), MRCP, DCH, FAMS*

Adjunct Professor, Duke-NUS Medical School

Head and Senior Consultant, Department of Neonatology, KK Women's and Children's Hospital

Clinical Professor, Yong Loo Lin School of Medicine, National University of Singapore

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Research Summary

Assoc Prof Rajadurai's research interests include pulse oximetry of newborn, perinatal asphyxia, inhaled nitric oxide therapy, chronic lung disease of prematurity, neonatal nutrition, newborn screening and newer modes of neonatal ventilation.

Past and Current Duke-NUS MD Research Students

Shruthi Suryaprakash (Class of 2016)

Student Publications

NA

Rozen, Steve *PhD*

Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School
Director, Duke-NUS Centre for Computational Biology, Duke-NUS Medical School
Associate Professor Track V, Psychiatry and Behavioral Sciences, Duke University Medical Center

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Research Summary

Our laboratory works in the areas of genome-scale biology and bioinformatics. We apply advanced computational and quantitative analysis to genome-scale data, especially next-generation sequencing data in pursuit of questions in cancer biology. Areas of particular interest are cancer classification, detection of signatures of mutagenic exposures in tumors, and the roles of alternative splicing in cancer.

In bioinformatics, we develop approaches for analyzing and interpreting high-dimensional, genome-scale data sets, such as those generated by next-generation sequencing and by gene-expression arrays.

Technologies for generating genome-scale data are improving exponentially and are increasingly central in biological research. In bioinformatics, our goal is to develop robust tools that can use these genome-scale data to generate new insights into biological processes.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Sabanayagam, Charumathi *MBBS, MD, MPH, PhD*

Associate Professor, Duke-NUS Ophthalmology and Visual Sciences Academic Clinical Programme

Clinician Scientist, Singapore Eye Research Institute

Associate Professor, Department of Ophthalmology, National University of Singapore

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Research Summary

Dr. Charu's current research focuses on the epidemiology of diabetes mellitus, chronic kidney disease (CKD), risk factors and impact of CKD on eye in particular diabetic retinopathy (DR) and age-related macular degeneration (AMD) in Asian populations. Currently, she is evaluating the longitudinal association of retinal imaging markers with CKD in Asian adults and also working on participant level meta-analyses on the association of retinal microvascular abnormalities with outcomes like prediabetes, metabolic syndrome and CKD. She has published >80 peer reviewed papers (36 as first author and 15 as senior author). Her research work has been published in leading international journals including American Journal of Epidemiology, American Journal of Kidney Diseases, Diabetologia and Journal of Clinical Endocrinology and Metabolism. She has mentored/co-mentored fellows at SERI, Registrars/Residents at SNEC and NUS medical students on research projects. 11 of her mentees' work have been published in international peer reviewed journals.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Sabapathy, Kanaga *PhD, FRCPath*

Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Professor and Head, Division of Cellular and Molecular Research, National Cancer Centre Singapore

Principal Investigator, Laboratory of Molecular Carcinogenesis, National Cancer Centre Singapore

Research Director, SingHealth/Duke-NUS Oncology Academic Clinical Programme (ONCO ACP)

Research Director, Institute of Molecular and Cell Biology

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Research Summary

The focus of the Sabapathy laboratory is to understand the molecular mechanisms contributing to carcinogenesis - the process of cancer formation, and the alterations that lead to therapeutic resistance, with the aim of finding ways to combat cancer and enhance treatment response.

As cells are constantly exposed to a variety of signals including growth promoting factors and detrimental stresses, cell fate determination has to be constantly and correctly made such that an appropriate response ensues. Defects in signaling mechanisms will inadvertently lead to altered cell fate responses resulting in both altered physiological processes and the development of pathological conditions such as cancer. The determination of cell fate is a tightly orchestrated process regulated by the interplay of various cellular signaling cascades.

Our laboratory studies several transcription factors that regulate cell fate, including TP53, which is the most mutated gene in ALL human cancers, and its homologue, TP73, which is upregulated in many cancers, using biochemical and genetic techniques and animal models. In addition, we utilize mouse models for hepatocellular carcinoma and liposarcomas to gain mechanistic understanding of their development to find better ways to detect them early, and to effectively treat them.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Sahlén, Anders Olof *MD, PhD, MRCP*

Adjunct Associate Professor, Duke-NUS Medical School

Consultant, Department of Cardiology, National Heart Centre Singapore

Associate Professor of Cardiology, Karolinska Institutet, Stockholm, Sweden

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Research Summary

Dr. Sahlén trained and worked in Sweden and England as a Noninvasive Cardiologist. His research interests include different aspects of echocardiography including clinical echo and its methodology, as well as its application to circulatory physiology. His recent work includes various aspects of registry research and, after joining National Heart Centre Singapore in January 2014 as a Consultant, Dr. Sahlén has become involved in the development of clinical Cardiology registries in Singapore. He is currently Deputy Scientific Lead for the NHRIS Core for Biostatistics and Databases, and involved in registry research both in Singapore and overseas. He co-supervises a registered PhD student at the Karolinska Institutet in Sweden and has earlier supervised both a PhD student (dissertation in 2012) and two graduate students (2011). He is the coordinating investigator for a large registry study looking at antithrombotic treatment in ACS and is a co-investigator for several other studies.

Past and Current Duke-NUS MD Research Students

Michael Seng Che Hao (Class of 2018)

NGUYEN Hai Nam (Class of 2020)

Li Lianjie, Anthony (Class of 2019)

Student Publications

NA

Saw, Seang Mei *MBBS, MPH, PhD, FAMS, FARVO*

Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Professor, Epidemiology, Saw Swee Hock School of Public Health, National University of Singapore

Head, Myopia Unit, Singapore Eye Research Institute

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Website: ResearchGate Profile



Research Summary

Epidemiology, gene-environment interaction, genetics of myopia and other eye diseases. Epidemiology, and quality of life of chronic diseases.

Past and Current Duke-NUS MD Research Students

Zhang Bei (Class of 2018)

Student Publications

NA

Sia, Alex Tiong Heng *MBBS, MMed (Anaes), FAMS*

Adjunct Professor, Duke-NUS Medical School

Adjunct Professor, NUS Faculty of Engineering

Clinical Associate Professor, Yong Loo Lin School of Medicine, National University of Singapore

Senior Consultant, Department of Women's Anaesthesia, KK Women's & Children's Hospital



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Research Summary

The principal area of Alex Sia's research specialization is in the individualization of pain chronic and labour pain management. There are 2 components to this – research on the possible predictors of the one's propensity to developing chronic pain after surgery, including genetic and environmental factors as well as the use of smart closed loop medication for pain management. The other area of his research is in the maintenance of haemodynamic stability in the perioperative period by exploring the contributions of genetic variations of the adrenoceptors and by employing a novel system of drug administration as a therapeutic tool.

Past and Current Duke-NUS MD Research Students

Wang Hao (Class of 2015)

Zhang Qianpian (Class of 2015)

Lee Man Xin (Class of 2016)

Du Wei (Class of 2017)

Tan Jian'an, Daryl (Class of 2018)

Tan Ze Yan (Class of 2019)

CHIA Xintian (Class of 2020; Co-mentor)

GOH Zhaohan (Class of 2020)

Student Publications

1. Sia AT, **Tan HS**, Sng BL. Closed-loop double-vasopressor automated system to treat hypotension during spinal anaesthesia for caesarean section: a preliminary study. *Anaesthesia*. 2012 Dec;67(12):1348-55.
2. Sia AT, Sng BL, **Tan HS**. Interactive technology in obstetric anaesthesia and analgesia: exploring seamless solutions to jagged problems. *Int J Obstet Anesth*. 2013 Nov;22(4):322-8.
3. Sng BL, **Tan HS**, Sia AT. Closed-loop double-vasopressor automated system vs manual bolus vasopressor to treat hypotension during spinal anaesthesia for caesarean section: a randomised controlled trial. *Anaesthesia*. 2014 Jan;69(1):37-45.
4. Yu S, Tan KK, Sng BL, **Li S**, Sia AT. Automatic identification of needle insertion site in epidural anesthesia with a cascading classifier. *Ultrasound Med Biol*. 2014 Sep;40(9):1980-90.
5. Yu S, Tan KK, Sng BL, **Li S**, Sia AT. Feature extraction and classification for ultrasound images of lumbar spine with support vector machine. *Conf Proc IEEE Eng Med Biol Soc*. 2014;2014:4659-62.
6. Sng BL, Woo D, Leong WL, **Wang H**, Assam PN, Sia AT. Comparison of computer-integrated patient-controlled epidural analgesia with no initial basal infusion versus moderate basal infusion for labor and delivery: A randomized controlled trial. *J Anaesthesiol Clin Pharmacol*. 2014 Oct;30(4):496-501.
7. Sng BL, **Wang H**, Assam PN, Sia AT. Assessment of an updated double-vasopressor automated system using NexfinTM for the maintenance of haemodynamic stability to improve peri-operative outcome during spinal anaesthesia for caesarean section. *Anaesthesia*. 2015 Jan 28. doi: 10.1111/anae.13008. [Epub ahead of print]
8. Sng BL, **Zhang Q**, Leong WL, Ocampo C, Assam PN, Sia AT. Incidence and characteristics of breakthrough pain in parturients using computer-integrated patient-controlled epidural analgesia. *J Clin Anesth*. 2015 Feb 14. [Epub ahead of print]

Silver, David L. *PhD*

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Website: Google Scholar Profile



Research Summary

Our research group is focused on molecular mechanism of lipid transport, the function of lipids in blood-brain barrier function and brain growth, and more recently autoimmune disorders. A particular focus of our research is on studying the function of Mfsd2a, a transporter we identified to be expressed at the blood-brain barrier that transports lipids essential for brain growth and function in humans. This recent work has provided both fundamental information on human brain growth and function and a platform to develop novel therapeutic agents to treat neurological disease. Our laboratory is multidisciplinary utilizing biochemistry, molecular genetics in mice and humans, and molecular and cellular biology. Ultimately, our goals are to translate our findings into potential therapeutic treatments for neurological diseases and develop novel clinical nutrition for improving brain growth and function. Students and research fellows working in the lab can expect to acquire skills in molecular biology, protein biochemistry, lipid biochemistry, in vitro cell culture assays, and in physiological and biochemical analyses of genetically engineered mice. Prof. Silver's research has been published in top-tier scientific journals such as Nature, Nature Genetics, Journal of Clinical Investigation, and Proceedings of the National Academy of Sciences, USA.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Smith, Gavin J. *PhD, MASM*

Professor, Programme in Emerging Infectious Diseases, Duke-NUS Medical School
Associate Research Professor, Duke Global Health Institute, Duke University
Faculty Member, Graduate School for Integrative Sciences and Engineering, National University of Singapore

Contact: 6601 1109

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Website: [Google Scholar Profile](#)



Research Summary

My research program focuses on the ecology, genetic and antigenic evolution, molecular diagnostics, pathogen discovery, population dynamics, molecular epidemiology and interspecies transmission of emerging infectious diseases. To achieve this, I conduct field surveillance studies on both human and animal populations aimed at collection and characterization of viruses for disease detection, prevention and control and for use in ecological and evolutionary studies. My research aims to explicitly link surveillance efforts with research into pathogenesis and host response to address the research priorities including the integration of ecological and phenotypic data for evolutionary hypothesis testing; the epidemiological and evolutionary dynamics of human respiratory viruses; evolution and transmission in animal species; and interspecies transmission and disease emergence.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Sng, Ban Leong *MBBS (S'pore), M Med (Anaes), FANZCA (Anaes), FFPMANZCA, MCI, FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

Deputy Head and Senior Consultant, Department of Women's Anaesthesia, KK Women's and Children's Hospital

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Website: ResearchGate Profile



Research Summary

Dr Sng Ban Leong, is the Deputy Head and Senior Consultant at the KK Women's and Children's Hospital, Women's Anaesthesia. He is an Assistant Professor at the Duke-NUS Medical School and also a Clinician-Scientist Mentor and Core Faculty in the Singhealth Anaesthesiology Residency Programme. He recently received the National Medical Research Council (NMRC) Clinical Trials Grant for obstetric epidural delivery system research, NMRC Transition Award for chronic pain research, NHIC I2D Grant for opioid delivery system research and Singhealth Foundation Grant for vasopressor delivery system research. He completed the Masters in Clinical Investigation with the National Research Foundation-MOH Healthcare Research Award and Fellowship in Pain Medicine with the Healthcare Manpower Development Plan award. His research interests include obstetric epidural anaesthesia and analgesia, opioid analgesia, closed-loop systems and chronic post-surgical pain.

Past and Current Duke-NUS MD Research Students

Ching Yin Ying (Class of 2017)	Wang Yijun (Class of 2019)
Du Wei (Class of 2017; Co-mentor)	Tan Ze Yan (Class of 2019; Co-mentor)
Yeo Junjie (Class of 2017; Co-mentor)	CHIA Xintian (Class of 2020)
Gan Yuan Ying (Class of 2018; Co-mentor)	GOH Zhaohan (Class of 2020; Co-mentor)
Sng Dawei, David (Class of 2018)	TAN Chin Chuen (Class of 2020; Co-mentor)
Tan Jian'an, Daryl (Class of 2018; Co-mentor)	

Student Publications

1. Sia AT, **Tan HS**, Sng BL. Closed-loop double-vasopressor automated system to treat hypotension during spinal anaesthesia for caesarean section: a preliminary study. *Anaesthesia*. 2012 Dec;67(12):1348-55.
2. **Tan HS**, Sng BL. Control of blood pressure during spinal anaesthesia for caesarean section. *Trends in Anaesthesia and Critical Care*. 2013; 3(3):166-170.
3. Sia AT, Sng BL, **Tan HS**. Interactive technology in obstetric anaesthesia and analgesia: exploring seamless solutions to jagged problems. *Int J Obstet Anesth*. 2013 Nov;22(4):322-8.
4. Sng BL, **Tan HS**, Sia AT. Closed-loop double-vasopressor automated system vs manual bolus vasopressor to treat hypotension during spinal anaesthesia for caesarean section: a randomised controlled trial. *Anaesthesia*. 2014 Jan;69(1):37-45.
5. Yu S, Tan KK, Sng BL, **Li S**, Sia AT. Automatic identification of needle insertion site in epidural anesthesia with a cascading classifier. *Ultrasound Med Biol*. 2014 Sep;40(9):1980-90.
6. Yu S, Tan KK, Sng BL, **Li S**, Sia AT. Feature extraction and classification for ultrasound images of lumbar spine with support vector machine. *Conf Proc IEEE Eng Med Biol Soc*. 2014;2014:4659-62.
7. Sng BL, Woo D, Leong WL, **Wang H**, Assam PN, Sia AT. Comparison of computer-integrated patient-controlled epidural analgesia with no initial basal infusion versus moderate basal infusion for labor and delivery: A randomized controlled trial. *J Anaesthesiol Clin Pharmacol*. 2014 Oct;30(4):496-501.
8. Kwok S, **Wang H**, Sng BL. Post-caesarean analgesia. *Trends in Anaesthesia and Critical Care*. 2014;4(6):189-194.
9. Sng BL, **Wang H**, Assam PN, Sia AT. Assessment of an updated double-vasopressor automated system using Nexfin™ for the maintenance of haemodynamic stability to improve peri-operative outcome during spinal anaesthesia for caesarean section. *Anaesthesia*. 2015 Jan 28. doi: 10.1111/anae.13008. [Epub ahead of print]
10. **Zhang Q**, Dunn CN, Sia JT, Sng BL. Category one caesarean section: A team-based approach. *Trends in Anaesthesia and Critical Care*. 2014;4(4): 97-101.
11. Sng BL, **Zhang Q**, Leong WL, Ocampo C, Assam PN, Sia AT. Incidence and characteristics of breakthrough pain in parturients using computer-integrated patient-controlled epidural analgesia. *J Clin Anesth*. 2015 Feb 14. [Epub ahead of print]

Soo, Khee Chee *MBBS, MD, FRACS, FACS, FAMS*

Benjamin Sheares Professor of Academic Medicine, Duke-NUS Medical School
Academic Chair, SingHealth Duke-NUS Oncology Academic Clinical Programme
Director, National Cancer Centre Singapore
Deputy CEO, Research and Education, SingHealth
Professor, Surgery, Yong Loo Lin School of Medicine, National University of Singapore



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Website: -

Research Summary

Prof Soo has wide ranging research interests in the conduct of clinical trials for new cancer treatments as well as in the field of biophotonics and its role as a new imaging modality for the early detection of cancer.

Past and Current Duke-NUS MD Research Students

Maryanne Chew Romero (Class of 2013)
Li Ke (Class of 2016)

Student Publications

NA

St. John, Ashley L. *PhD*

Assistant Professor, Programme in Emerging Infectious Diseases, Duke-NUS Medical School

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Website: ResearchGate Profile



Research Summary

The research program in the St. John lab is currently focused on studying how the initial inflammatory events of infection shape downstream immune protection or pathology, particularly in the context of viral pathogens such as dengue virus. Opportunities for basic, translational, and clinical research projects are available. This lab employs approaches including the use of animal models and techniques in cellular immunology to functionally test the impact of immune mediators on immunosurveillance for viral pathogens, cellular activation and trafficking within lymph nodes, and protective immunological memory and immune pathology. Studying primary immune processes and immunosurveillance events for pathogens that impact adaptive immunity is a key aim of our work and one that has implications for vaccine design and the development of novel immunotherapeutics.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Sung, Min

Senior Consultant, Department of Child and Adolescent Psychiatry, Institute of Mental Health

Programme Director, Neurobehavioural Clinic, Child Guidance Clinic

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

Clinical Teacher, Lee Kong Chian School of Medicine, Nanyang Technological University



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Website: -

Research Summary

Dr Sung's area of interest in research is in Autism Spectrum Disorders., such as on clinical aspects of diagnosis, mental health comorbidities and intervention. She has authored papers on Anxiety, Cognitive Behavioural Therapy, Caregiver Stress and assessment instruments in Autism Spectrum Disorders. Dr Sung has mentored Residents, Medical Officers and medical students from the Yong Loo Lin School of Medicine in research projects leading to publications.

Past and Current Duke-NUS MD Research Students

Thanita Pilunthanakul (Class of 2019)

Student Publications

NA

Sung, Sharon Cohan *PhD*

Assistant Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

Senior Clinical Psychologist, Department of Child and Adolescent Psychiatry, Institute of Mental Health

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Website: ResearchGate Profile



Research Summary

My research is focused on improving identification, assessment, and treatment for mood and anxiety disorders throughout the lifespan, with an emphasis on empirically supported treatment approaches (e.g., cognitive behavioral and mindfulness-based therapies). Current clinical research projects include a study of virtual-reality exposure therapy for children with selective mutism, a study to determine optimal screening methods for emergency medicine patients with panic disorder, and a study investigating the efficacy of stepped-care for panic patients presenting to emergency medicine.

Past and Current Duke-NUS MD Research Students

Pavaani Thiagayson (Class of 2013, Co-mentor)

Student Publications

Thiagayson P, Krishnaswamy G, Lim ML, Sung SC, Haley CL, Fung DS, Allen JC Jr, Chen H. Depression and anxiety in Singaporean high-risk pregnancies - prevalence and screening. *Gen Hosp Psychiatry*. 2013 Mar-Apr;35(2):112-6.

Tai, Bee Choo *PhD*

Associate Professor, Saw Swee Hock School of Public Health, National University of Singapore

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Website: -



Research Summary

- Competing risks and correlated multiple failure time data
- Design and analysis of clinical trials

Past and Current Duke-NUS MD Research Students

Daniel He Xin-Ping (Class of 2012)

Student Publications

NA

Tai, E Shyong *MD*

Professor, Programme in Cardiovascular and Metabolic Disorders, Duke-NUS Medical School

Senior Consultant and Head, Division of Endocrinology, National University Health System

Professor, Division of Endocrinology, Department of Medicine, Yong Loo Lin School of Medicine, National University of Singapore



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Website: ResearchGate Profile

Research Summary

I am interested in obesity and metabolic diseases from a variety of angles. 1) the pathogenesis of these disorders including genetics diet, physical activity, pschosocial distress; 2) the identification of individuals at high risk of these disorders; and 3) the impact of these disorders in terms of chronic complications, health care utilization, quality of life and death.

I am involved in human studies which may take 2 major forms:

1. Large epidemiologic surveys with extensive phenotyping which exploit biochemistry and genomics platforms
2. Small studies involving intensive physiologic measurements including hyperinsulinemic clamps, imaging and meal challenges.

Past and Current Duke-NUS MD Research Students

Nur Shadrina Binte Ahmad (Class of 2018)

Student Publications

NA

Tan, Bien Soo *MBBS, FRCR, FAMS*

Adjunct Professor and Academic Chair, SingHealth Duke-NUS Radiological Sciences Academic Clinical Programme

Senior Consultant, Department of Diagnostic Radiology, Singapore General Hospital

Clinical Associate Professor, Yong Loo Lin School of Medicine, National University of Singapore

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Website: -



Research Summary

The Interventional Radiology Centre at SGH is the largest interventional radiology service in the region, and is very active in research, with several investigator initiated prospective clinical trials in progress. The high volume of workload means that there is a huge bank of data available for retrospective studies, looking at outcomes of interventional radiology procedures.

The Duke-NUS student will find numerous opportunities to participate in research in the exciting field of interventional radiology. The research projects will also be designed such that the one year timeline will be sufficient for the student to complete the project.

Among the areas of research available are:

1. Hemodialysis access interventions and outcomes.
2. Management of critical limb ischemia and outcomes.
3. Interventional radiology techniques in the field of Oncology and their outcomes.
4. Interventional radiology techniques in the field of urology.
5. Interventional radiology techniques in the field of obstetrics and gynecology.

Past and Current Duke-NUS MD Research Students

Wong Hui Lin Claudia (Class of 2015)
Kevin Khaw Beng Chin (Class of 2016)
Goh Xi Tai, Winfred (Class of 2018)
Woon Tian Kai (Class of 2019)

Student Publications

NA

Tan, Chieh Suai

Adjunct Assistant Professor, Duke-NUS Medical School
Consultant, Department of Renal Medicine, Singapore General Hospital

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<https://scholar.google.com.sg/citations?user=wKpGBWsAAAAJ&hl=en&cstart=0&pagesize=20>



Research Summary

Dr Tan set up the multi-disciplinary interventional nephrology suite in Singapore General Hospital and has a special interest in endovascular therapies for maintenance of hemodialysis vascular accesses. His recent research evaluated the use of colour digital subtraction angiography for dialysis access intervention and the use of drug eluting balloons to improve the patency of dialysis accesses. He is the PI of the National Kidney Foundation grant to develop stents for dialysis access and has published papers and book chapters in the field.

Past and Current Duke-NUS MD Research Students

Alicia Ong Huiying (Class of 2017)

Student Publications

Alicia Ong et al. Assessment of dysfunctional hemodialysis vascular accesses during angioplasty using Syngo iflow: (Research Day 2016 – Best Poster Presentation Award)

Tan, Ene Choo *PhD*

Adjunct Associate Professor, SingHealth Duke-NUS Paediatrics Academic Clinical Programme

Chief Research Scientist, KK Women's and Children's Hospital

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Website: ResearchGate Profile



Research Summary

Our group is interested in the genetics of congenital disorders and clinically significant traits. Phenotypes of interest include congenital anomalies, developmental disorders, pain perception and neuropsychiatric disorders. Current projects include the detection of genetic abnormalities which include chromosomal imbalance and the identification of mutations and polymorphisms which contribute to specific phenotypic presentations. Besides bench research, there is also opportunity for bioinformatics and genome analysis work.

Students can be involved in different stages of research such as performing laboratory experiments and initial sequence or gene expression data generation, analysis of new or existing lab data, discovery work from mining of data, correlation of clinical data with laboratory findings, and creation of databases for specific genes/syndromes, phenotypic abnormalities and associated genetic alterations. Projects may be entirely laboratory-based, clinical data collection or data analysis.

Past and Current Duke-NUS MD Research Students

Tay Wen Shu, Terence (Class of 2016)

Yeo Jun Jie (Class of 2017)

Gan Yuan Ying (Class of 2018)

Student Publications

NA

Tan, Eng King *MBBS, MRCP(UK), FRCP(Edin), FAMS* (Neurology)

Professor and Deputy Director, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Academic Vice Chair, Research, SingHealth Duke-NUS Neuroscience Academic Clinical Programme

Senior Consultant Neurologist, Department of Neurology, National Neuroscience Institute (SGH Campus)

Research Director, National Neuroscience Institute

Honorary Professor, Lee Kong Chian School of Medicine

Associate Designated Institutional Official (ADIO) SingHealth Clinician Scientist Residency

Chairman, Ministry of Health, Research accreditation of mentors and centers

Chief Editor, Annals of Academy of Medicine, Singapore

Co-director USA Parkinson Foundation International Center of Excellence



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Website: -

Research Summary

Dr Tan leads a consortium in translational clinical research in Parkinson's disease and related neurodegenerative disorders. PD is the most common neurodegenerative condition seen at the National Neuroscience Institute and is the main neurodegenerative condition where significant impact on patients' quality of life can be achieved with improved care. Dr Tan's group is involved in the identification of genes involved in Parkinson's disease (PD) and related degenerative diseases with a focus on whole-genome and exome analysis and massive parallel sequencing. Building on these potential genetic discoveries, his group investigates the interaction of the various molecular pathways using various in vitro and in vivo models (Mouse, Drosophila, Zebra Fish), with the aim at identifying early markers and to explore potential therapeutic interventions through the selection of viable targets. The program involves participation from >40 local and international research and clinical institutions and pharmaceutical companies. The team is also involved in various pharmaceutical drug trials. Students and trainees in the program are exposed to a wide spectrum of laboratory and clinical (bench to bedside) research activities.

Past and Current Duke-NUS MD Research Students

Yong Mind Hui (Class of 2012)

Lim Jing Wei (Class of 2012)

Swe Swe Thet Paing (Class of 2014)

Heng Xiao Wei (Class of 2015)

Cheng Yu-Ching (Class of 2015)

Ong Yi Lin (Class of 2019)

VOON Siew Lian (Class of 2020)

Student Publications

1. The impact of non-motor symptoms on the quality of life of Parkinson's disease patients: a longitudinal study. Prakash KM, Nadkarni NV, Lye WK, **Yong MH**, Tan EK. *Eur J Neurol*. 2016 Jan 25
2. Longitudinal study of non-motor symptom burden in Parkinson's disease after a transition to expert care. Prakash KM, Nadkarni NV, Lye WK, **Yong MH**, Chew LM, Tan EK. *Parkinsonism Relat Disord*. 2015 Aug;21(8):843-7.
3. Differentiating non-motor symptoms in Parkinson's disease from controls and hemifacial spasm. **Yong MH**, Allen JC Jr, Prakash KM, Tan EK. *PLoS One*. 2013;8(2):e49596
4. Sleep and Parkinson's disease: a review of case-control polysomnography studies. Peeraully T, **Yong MH**, Chokroverty S, Tan EK. *Mov Disord*. 2012 Dec;27(14):1729-37.
5. Case control polysomnographic studies of sleep disorders in Parkinson's disease. **Yong MH**, Fook-Chong S, Pavanni R, Lim LL, Tan EK. *PLoS One*. 2011;6(7):e22511
6. Transcallosal diffusion tensor abnormalities in predominant gait disorder parkinsonism. Chan LL, **Ng KM**, Rumpel H, Fook-Chong S, Li HH, Tan EK. *Parkinsonism Relat Disord*. 2014 Jan;20(1):53-9.
7. Putaminal Diffusivity Correlates With Disease Progression in Parkinson's Disease: Prospective 6-Year Study. Chan LL, **Ng KM**, Yeoh CS, Rumpel H, Li HH, Tan EK. *Medicine (Baltimore)*. 2016 Feb;95(6):e2594.

Tan, Hiang Khoon *MBBS, FRCSEd, MD, PhD, FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant and Deputy Head, Department of Surgical Oncology, National Cancer Centre Singapore

Director, Community Outreach and Philanthropy, SingHealth Duke-NUS Oncology Academic Clinical Programme

Academic Vice Chair (Research), SingHealth Duke-NUS Surgery Academic Clinical Programme



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Research Summary

My research interest is in the prognostic/risk stratification in head and neck carcinomas. I am particularly interested in the utilization of epigenetic/genetic changes to predict metastatic potential or treatment response. I am also interested in clinical trials that can answer pertinent clinical questions. Furthermore the conduct of these trials confers excellent opportunities to execute correlation translational studies to address gaps of knowledge that often exists between advances in bench top science and bed side experience. Last but not least, I am an early adaptor of new surgical techniques or devices that may improve the surgical outcome of Head and Neck patients.

Past and Current Duke-NUS MD Research Students

Nguyen Thien Khanh (Class of 2014)

Tan Hong Yu (Class of 2017)

Koh Shu Qing (Class of 2018)

Student Publications

NA

Tan, Iain Bee Huat *MBBS, MRCP (UK), PhD*

Consultant, Department of Medical Oncology, National Cancer Centre Singapore

Programme Director, GI Oncology Research Programme, Department of Medical Oncology, National Cancer Centre Singapore

Disease Champion, GI Cancers, SingHealth / Genome Institute of Singapore POLARIS Programme



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Website: Google Scholar Profile

Research Summary

My main area of clinical specialization is **Colorectal** and **Stomach Cancer**. My translational research focuses on 3 areas:

- (1) **Real Time diagnostics (Developing –omics assays for clinical deployment):** We use omics technology to develop "fit-for-purpose" -omics technologies to transform current and future patient management across the clinical continuum of care. We use **Non-invasive blood based assays:** We perform real-time assessment of the evolution of disease biology and interactions with time and treatment with genomic assays performed on blood samples. Simply put, circulating assays enable us to evaluate disease biology on a regular and non-invasive basis.
- (2) **Metastasis: (co-led with Dr. Clarinda Chua, NCCS)** We use patient derived tumor models to pathways that abrogate metastasis.
- (3) **Immuno-oncology:** A collaborative effort with deep immunophenotyping and cytotoxicity experiments with patient derived immune cells and tumor models

Beyond assay development, I am also actively involved in running clinical trials for Digestive Track cancers.

Past and Current Duke-NUS MD Research Students

Chen Yuan Yi Constance (Class of 2017)
Bok Ke Xin (Class of 2018)
Tan Si Qi (Class of 2019)

Toh Ming Ren (Class of 2019; Co-mentor)
LI Yanhui (Class of 2020)

Student Publications

NA

Tan, Kok Hian *MBBS, FRCOG, M Med (O&G), FAMS, MBA*

Senior Associate Dean, Academic Medicine, Duke-NUS Medical School
 Professor, SingHealth Duke-NUS Obstetrics and Gynaecology (OBGYN) Academic Clinical Programme
 Group Director, Academic Medicine, SingHealth
 Group Director, SingHealth Duke-NUS Institute for Patient Safety & Quality
 Head, Perinatal Audit & Epidemiology, KK Women's and Children's Hospital
 Senior Consultant, Maternal Fetal Medicine, KK Women's and Children's Hospital



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Research Summary

Prof Tan is interested in improving health outcomes for women & mothers by creating new ways of predicting, assessing and reducing adverse risk factors and outcomes. His research interests include Perinatal Epidemiology, Maternal Fetal Medicine, Cochrane Pregnancy and Childbirth Reviews, Pregnancy Cohort Studies, Extracellular Vesicles, Exosomes & Biomarkers.

Opportunities for students are Perinatal & Maternal Fetal Medicine Epidemiology projects relating to antenatal & postnatal practices as well as adverse outcomes like birth defects, gestational diabetes, preeclampsia and preterm labour. These are based on KKH databases and the high obstetric patient load. Other opportunities include involvement in large birth cohort studies like Neonatal and Obstetric Risk Assessment (NORA) & Integrated Platform for Research in Advancing Metabolic Health Outcomes of Women and Children (IPRAMHO), pregnancy biomarkers; and collaborative studies with A*Star on extracellular vesicles; and with Cochrane Collaboration on systematic reviews.

Past and Current Duke-NUS MD Research Students

Chen Pin Yu, Petty (Class of 2015)
 Feng Tingting (Class of 2016)
 Yeong Huiqing (Class of 2017)

Nur Atiqah Binte Adam (Class of 2018)
 Lim Muhammad Haikel Asyraf (Class of 2019; Co-mentor)
 Cai Meijin (Class of 2019; Co-mentor)

Student Publications

1. **Chen PY**, Finkelstein EA, Ng MJ, Yap F, Yeo GS, Rajadurai VS, Chong YS, Gluckman PD, Saw SM, Kwek KY, Tan KH. Incremental Cost-Effectiveness Analysis of Gestational Diabetes Mellitus Screening Strategies in Singapore. *Asia-Pacific Journal of Public Health* 2016; 28(1):15-25
2. **Feng TT**, Allen JC, Ng MJ, Yeo GSH, Kwek KYC, Chern BSM, Tan KH. The association between serum progesterone level and preterm birth. *Int J Gynaecol Obstet.* 2018 Sep; 142(3):308-314.

Tan, Emile John

Co-Director, Health Services Research, Surgery Academic Clinical Programme
SingHealth-Duke-NUS Academic Medicine Partnership

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Research Summary

Dr Tan is a Colorectal Surgeon with interests in colorectal cancer, metabolic effects of surgery and pelvic floor disease. Currently he has a special interest in health services and outcomes research, and was previously project manager to the United Kingdom National Bowel Cancer Audit project. He maintains a keen interest in evidence synthesis, including systematic review and meta-analysis.

Cancer: His recent work includes research on the physical, emotional and quality of life outcomes of long-term survivorship of colorectal cancer treatment, and the ageing process in relation to this. He is also actively collaborating with Oncology in the study of neoadjuvant chemotherapy vs chemoradiotherapy in the treatment of advanced rectal cancer.

Functional GI: Study of the metabolic consequences of chronic gastro-intestinal functional disorders, with a special interest in neuromodulation outcomes.

Dr Tan is also involved in collaborations with Gastroenterology and Traditional Chinese Medicine (TCM) practitioners in the treatment of functional bowel disorders.

Cardiovascular: Additional collaboration include multi-disciplinary research on the theme of Cardiovascular emergencies, with work concentrating on device development of early warning sensor systems in the acute setting.

Dr Tan has been PI on national and international grants and has published widely in the field of surgery.

Past and Current Duke-NUS MD Research Students

Shih Shan Wei, Shannon (Class of 2018)
Chua Teck Beng (Class of 2019)

LIM Wen Lin Mark (Class of 2020; Co-mentor)
XUE, Bai (Class of 2020)

Student Publications

NA

Tan, Louis Chew Seng *MBBS, MRCP (UK), FAMS* (Neurology), *FRCP (Edin)*

Adjunct Associate Professor, Duke-NUS Medical School

Deputy Director, Research, National Neuroscience Institute

Senior Consultant, Department of Neurology, National Neuroscience Institute

Co-Director, Parkinson's Disease and Movement Disorders Centre, USA Parkinson Foundation, International Centre of Excellence



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Research Summary

The Parkinson's disease and Movement Disorders Programme at NNI is a translational research programme that seeks to understand the cause, clinical characteristics, and disease progression of these disorders so as to enable better treatment and management for these conditions. One major research component is to understand the progression of PD in our population through the use of our PD database. The database which contains more than 2,500 PD patients was established in the year 2002 and contains prospectively collected clinical and treatment data from the initial and subsequent follow-up visits of all PD patients evaluated at the Centre. We have also commenced in 2014 an on-going prospective PD longitudinal (PALS) study where 200 newly diagnosed PD patients and 100 healthy controls are followed-up for assessment of cognitive function, motor signs and non-motor symptoms. MRI brain scans, serum and DNA are also analysed to perform correlation studies and identify biomarkers for disease progression.

Past and Current Duke-NUS MD Research Students

Reinoso Marie Giselle Cordero (Class of 2014)

LUM Xian Jun, Nathaniel (Class of 2020)

Wee Jian-Ting, Natalie (Class of 2016)

Huang Xinxin (Class of 2019)

Student Publications

1. **Reinoso G**, Allen JC Jr, Au WL, Seah SH, Tay KY, Tan LC. Clinical evolution of Parkinson's disease and prognostic factors affecting motor progression: 9-year follow-up study. *Eur J Neurol*. 2015 Mar;22(3):457-63.
2. Oosterveld LP, Allen JC Jr, **Reinoso G**, Seah SH, Tay KY, Au WL, Tan LC. Prognostic factors for early mortality in Parkinson's disease. *Parkinsonism Relat Disord*. 2015 Mar;21(3):226-30.
3. **Natalie Wee**, Nagaendran Kandiah, Sanchalika Acharyya, Russell J. Chander, Aloysius Ng, Wing Lok Au, Louis C.S. Tan. Depression and anxiety are co-morbid but dissociable in mild Parkinson's disease: a prospective longitudinal study of patterns and predictors. *Parkinsonism Relat Disord*. 2016 Feb;23:50-6.
4. **Natalie Wee**, Nagaendran Kandiah, Sanchalika Acharyya, Russell J. Chander, Aloysius Ng, Wing Lok Au, Louis C.S. Tan. Baseline predictors of worsening apathy in Parkinson's disease: a prospective longitudinal study. *Parkinsonism Relat Disord*. 2016 Feb;23:95-8.
5. **Natalie Wee**, Ming-Ching Wen, Nagaendran Kandiah, Russell J. Chander, Aloysius Ng, Wing Lok Au, Louis C.S. Tan. Neural correlates of anxiety symptoms in mild Parkinson's disease: A prospective longitudinal voxel-based morphometry study. *J Neuro Sci* 2016 Dec 15;371:131-136.
6. **Huang X**, Ng SY, Chia NS, Acharyya S, Setiawan F, Lu ZH, Ng E, Tay KY, Au WL, Tan EK, Tan LC. Serum uric acid level and its association with motor subtypes and non-motor symptoms in early Parkinson's disease: PALS study. *Parkinsonism Relat Disord*. 2018 May 17. pii: S1353-8020(18)30240-2. doi: 10.1016/j.parkreldis.2018.05.010.
7. **Huang Xinxin**, Ng SY, Chia NS, Setiawan F, Tay KY, Au WL, Tan EK, Tan LC. Non-Motor Symptoms in Early Parkinson's Disease Patients with Different Motor Subtypes and Their Associations with Quality of Life. *Eur J Neurol* 2018, in press.
8. **Xinxin Huang**, Samuel Yong-Ern Ng, Nicole Shuang-Yu Chia, Sanchalika Acharyya, Fiona Setiawan, Zhonghao Lu, Yi Jayne Tan, Ebonne Ng, Ming-Ching Wen, Adeline S.L Ng, Kay-Yaw Tay, Wing-Lok Au, Eng-King Tan, Louis Chew-Seng Tan. Higher serum triglyceride levels are associated with Parkinson's disease mild cognitive impairment. *Mov Disord* 2018, in press.

Tan, Ngiap Chuan *MBBS, MMed(FM), FCFPS, MCI(NUS), FAMS*

Adjunct Associate Professor, Duke-NUS Medical School
 Director, Department of Research, SingHealth Polyclinics
 Faculty, Fellowship of College of Family Physicians Singapore Training Programme

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http://scholar.google.com.sg/citations?hl=en&user=wUvyLQ4AAAAJ&imgq=Ngiap+Chuan+Tan&view_op=list_works&sortby=pubdate



Research Summary

Dr Tan conducts clinical research on patients with chronic diseases, especially those with type 2 diabetes mellitus, hypertension, dyslipidemia, chronic renal disease, asthma, COPD and gout. His research interests include family medicine and health service research, primary prevention strategies, qualitative research, development and evaluation of innovations in primary care. He co-anchors the Health Engagement and Action Lab for ambulatory primary care in the Health Service Research Institute, SingHealth-Duke NUS Academic Medical Center and publishes over 75 publications in peer-reviewed journals.

Dr Tan works with academics and non-medical professionals to develop and validate point-of-care devices and other innovations to advance the frontier of Family Medicine. He is the principal investigator of clinical drug and vaccine trials and studies in SingHealth Polyclinics and also coaches the trainees in their FM Fellowship research projects under the College of Family Physicians Singapore.

Past and Current Duke-NUS MD Research Students

Glenn Goh (Class of 2015; Co-mentor)

CHUA Ing Loon, Sean (Class of 2020; Co-mentor)

I Gusti Ngurah Prawira Suartha Oka (Class of 2017; Co-mentor)

Eui Whan Moon (Class of 2018; Co-mentor)

Fung Foon Yin (Class of 2019)

Student Publications

Goh G, Tan NC, Malhotra R, Padmanabhan U, Barbier S, Allen J, Ostbye T. Short-term trajectories of use of a caloric-monitoring mobile-phone application among patients with type 2 diabetes mellitus in a primary care setting. Journal of Medical Internet Research. Feb 2015; 17(2):e33.

Tan, Patrick *MD, PhD*

Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Senior Group Leader, Genome Institute of Singapore

Senior Principal Investigator, Cancer Science Institute of Singapore

Adjunct Principal Investigator, National Cancer Centre Singapore

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Research Summary

Genomic Oncology of Stomach Cancer

Our research focuses on developing genomic approaches to unlock the molecular and clinical diversity of gastric cancer (aka stomach cancer)- the second highest cause of global cancer mortality. At present, most gastric cancer (GC) patients are clinically treated with uniform "one-size-fits-all" surgery and chemotherapy regimens. However, individual gastric tumors can often vary in their genetic aberrations, which can regulate disease aggressiveness and treatment response. To improve clinical outcomes for GC patients, our group is developing methods to classify different GC patients into distinct subgroups based on their molecular profiles, identifying specific "Achilles Heel" genes required for cancer development in each subgroup, and translating these discoveries into optimized and tailored subgroup-specific treatments.

Over the past decade, our group has made important contributions to the GC field. We have defined transcriptional subtypes of GC (Tay et al, 2003; Tan et al., 2011) and translated these findings into an industry- international multi-centre clinical trial. We identified the first recurrent fusion genes in GC (BRAF fusions and CD44-SLC1A2) (Palanisamy et al., 2010 in collaboration with Arul Chinnaiyan; Tao et al., 2011), and reported the first comprehensive studies of somatic copy number alterations and epigenetic alterations in GC (Deng et al., 2012; Zouridis et al., 2012). In collaboration with Prof Teh Bin Tean and A/Prof Steve Rozen, we have also reported pioneering studies in applying next-generation sequencing to GC and other cancers endemic to Asia (Zang et al., 2012; Ong et al., 2012). Our group is a core pillar of the Singapore Gastric Cancer Consortium, a national multi-disciplinary team of >20 leading clinicians and researchers working together to improve our basic and clinical understanding of GC.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Tan, Poh Lin *MBBS (Singapore), MMED (Paediatric, Singapore), FRCPCH (UK)*

Senior Consultant, Khoo Teck Puat - National University Children's Medical Institute, National University Hospital

Associate Professor, Department of Paediatrics, Yong Loo Lin School of Medicine, National University of Singapore

Senior Consultant, Division of Paediatric Oncology & Blood / Marrow Transplant, Department of Paediatrics, National University Hospital

Clinical Medical Director, Paediatric Haematopoietic Progenitor Cell Transplant Programme, National University Health System

Associate Programme Director, ACGME-I Paediatric Post-Graduate Programme, National University Health System

Programme Director, Advanced Clinical Fellowship in Paediatric Blood / Marrow Transplant, National University Health System

Programme Director, Diploma in Paediatric Cancer Care, College of Paediatric and Child Health, Academy of Medicine, Singapore



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Research Summary

Dr Tan conducts clinical research in the field of pediatric hematopoietic cell transplant (malignant and non-malignant diseases) with a focus on stem cell graft engineering, immunotherapy (cellular and biologics), immune reconstitution, late effects and quality of life (of patients/ families and donors). She is primarily interested in translational research where clinical research questions are asked from bedside and studied at the bench; and findings at the bench is translated back to bedside as swiftly and robustly as possible so as to benefit patients.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Tan, Puay Hoon *MBBS, FRCPA, FAMS, MD, FRCPath, MIAC*

Professor and Academic Chair, SingHealth Duke-NUS Pathology Academic Clinical Programme

Senior Consultant and Chairman, Division of Pathology, Singapore General Hospital

Professor, Departments of Anatomy and Pathology, Yong Loo Lin School of Medicine, National University of Singapore

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Website: SGH/ PATH ACP/ Breast Research Programme in PATH ACP/ PubMed/ Google Scholar



Research Summary

Dr Tan Puay Hoon has active interests in breast, urologic and renal pathology, and was a Volume Editor of the 2012 WHO Classification of Tumours of the Breast. She sits on the Editorial Boards of Modern Pathology, Breast Cancer Research, Journal of Clinical Pathology, etc and is Associate Editor of Histopathology and the Singapore Medical Journal. She and her collaborators are recipients of several research grants related to translational studies of breast and prostate cancer. She is author of more than 420 publications, and participates regularly in regional and international meetings.

Dr Tan's research interests in breast pathology centre around the classification of breast fibroepithelial lesions and their molecular pathogenesis, triple negative breast cancers, and ductal carcinoma in situ. In urologic pathology, she is engaged in prostate and renal cancer studies and is a contributor to the 2016 WHO Classification of Tumours of the Urinary System and Male Genital Organs.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Tan, Swee Yaw *MBChB (Edin), MRCP (UK), FESC, FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Cardiology, National Heart Centre Singapore

Director, Cardiovascular Rehabilitation and Preventive Cardiology, National Heart Centre Singapore

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Website: ResearchGate Profile



Research Summary

Cardiac CT

Cardiac calcium scoring

Cardiac rehabilitation and epidemiology

Past and Current Duke-NUS MD Research Students

Ignasius Aditya Jappar (Class of 2012; Co-mentor)

LIM En Ning (Class of 2020)

Rachel Ng Qiao Ming (Class of 2013; Co-mentor)

Tay Yu Ling (Class of 2014; Co-mentor)

Goh Jian Min, Jasmine (Class of 2016; Co-mentor)

Tan Shih Jia, Janice (Class of 2016)

Fernandina Stella Setiawan (Class of 2017)

Heng Shu Yun (Class of 2019)

Student Publications

1. **Jappar IA**, Chua T, Htoo MM, Cheah FK, Allen JC, Tan SY. Diagnosis of anomalous origin and course of coronary arteries using non-contrast cardiac CT scan and detection features. *J Cardiovasc Comput Tomogr.* 2012 Sep-Oct;6(5):335-45.

Tan, Thiam Chye *MBBS (S'pore), MMed (O&G) (S'pore)*

Associate Professor, SingHealth Duke-NUS Obstetrics and Gynaecology (OBGYN) Academic Clinical Programme

Deputy Campus Director, Education Office, KK Women's and Children's Hospital

Head and Senior Consultant, Obstetrics and Gynaecology (Inpatient Services), KK Women's and Children's Hospital

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Website: -



Research Summary

My area of research is clinical research in benign diseases in Obstetrics and Gynaecology, especially in reproductive endocrinology, first trimester miscarriages as well as wound healing studies.

Past and Current Duke-NUS MD Research Students

Ee Tat Xin (Class of 2011; Co-mentor)

Koh Hui Shan (Class of 2011; Co-mentor)

Kouk Leong Jin (Class of 2012; Co-mentor)

Neo Ghim Hoe (Class of 2012; Co-mentor)

Wu Lin Chieh (Class of 2013; Co-mentor)

Ku Chee Wai (Class of 2013; Co-mentor)

He Song (Class of 2015)

Siew Jia Yun Shayna (Class of 2015)

Lek Sze Min (Class of 2016)

Sandra Lynn Jaya (Class of 2018)

Shi Qi Zhu (Class of 2018; Co-mentor)

ZHANG Xiaoxuan (Class of 2020)

Student Publications

1. **Koh H, Ee TX**, Malhotra R, Allen JC, Tan TC, Østbye T. Predictors and adverse outcomes of inadequate or excessive gestational weight gain in an Asian population. *J Obstet Gynaecol Res*. 2013 May;39(5):905-13.
2. **Kouk LJ, Neo GH**, Malhotra R, Allen JC, Beh ST, Tan TC, Ostbye T. A prospective study of risk factors for first trimester miscarriage in Asian women with threatened miscarriage. *Singapore Med J*. 2013 Aug;54(8):425-31.
3. **Wu LC**, Lie D, Malhotra R, Allen JC Jr, Tay JS, Tan TC, Ostbye T. What factors influence midwives' decision to perform or avoid episiotomies? A focus group study. *Midwifery*. 2013 Aug;29(8):943-9.
4. **Wu LC**, Malhotra R, Allen JC Jr, Lie D, Tan TC, Østbye T. Risk factors and midwife-reported reasons for episiotomy in women undergoing normal vaginal delivery. *Arch Gynecol Obstet*. 2013 Dec;288(6):1249-56.
5. **Ee TX**, Allen JC Jr, Malhotra R, **Koh H**, Østbye T, Tan TC. Determining optimal gestational weight gain in a multiethnic Asian population. *J Obstet Gynaecol Res*. 2014 Apr;40(4):1002-8.
6. **Chee Wai Ku**, John C. Allen Jr, Rahul Malhotra, Han Chung Chong, Nguan Soon Tan, Truls Østbye, **Sze Min Lek**, Desiree Lie, and Thiam Chye Tan. How can we better predict the risk of spontaneous miscarriage among women experiencing threatened miscarriage? 2015. In press.

Tang, Mark Boon Yang *MBBS, MRCP (UK), MMed(Int Med), FRCP (Edin), FAMS*

Senior Consultant, National Skin Centre Singapore
 Director of Research, National Skin Centre Singapore
 Head, Eczema Clinic, National Skin Centre Singapore

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Website: -



Research Summary

My research interests include:

1. Atopic eczema – This is a high burden, highly prevalent chronic inflammatory skin disease affecting up to 20% of school going children in Singapore. We have an ongoing collaboration with the Prof Birgit Lane's group at the Institute of Molecular Biology, A*STAR, focused on investigating the genetic basis of atopic eczema. In particular, our work has been vital in elucidating key novel, population specific mutations in the filaggrin gene, the strongest genetic risk factor for atopic eczema. Our large cohort of atopic eczema patients remain a valuable resource for ongoing basic science and clinical research projects.
2. Chronic ulcer and wound healing – I have ongoing collaborative research projects with researchers at NTU focused on basic science work and the development of new wound dressing products.
3. Immunobullous diseases – I am involved in several research projects investigation various aspect of autoimmune blistering skin diseases. We have a large cohort of patients with various immunobullous diseases which will allow further research work in this area.

Cutaneous T cell lymphoma – This is a niche area of research for us as we are the major referral centre for such cases in Singapore. We have an ongoing database and conduct mainly epidemiological research in this area.

Past and Current Duke-NUS MD Research Students

Sophie Carrie Cai Shan (Class 2014)

Student Publications

1. Seghers AC, **Cai SC**, Ho MS, Giam YC, Tan L, Grönhagen CM, Tang MB. Evaluation of a Pseudoceramide Moisturizer in Patients with Mild-to-Moderate Atopic Dermatitis. *Dermatol Ther (Heidelb)*. 2014 Jun;4(1):83-92.

Tang, Phua Hwee *MBBS, FRCR, MMed Diagnostic Imaging*

Adjunct Assistant Professor and Research Director, Adult and Paediatric Body Imaging, SingHealth Duke-NUS Radiological Sciences Academic Clinical Programme

Senior Consultant, Department of Diagnostic and Interventional Imaging, KK Women's and Children's Hospital, Singapore

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

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Website: -



Research Summary

Dr Tang aims to improve the detection and diagnosis of disease by developing, evaluating and implementing new imaging methods in a safe and cost effective manner, particularly in the field of magnetic resonance imaging (MRI). She is evaluating the use of arterial spin labelling in assessment of cerebral perfusion as this method does not require an intravenous injection of exogenous contrast and instead uses radiofrequency waves to label flowing blood in the neck, acquiring the signal when the blood reaches the brain.

She is also investigating methods to improve the quality of MRI scans of children, including use of an interactive video by the children prior to MRI and will be embarking on a project on motion correction in collaboration with Singapore Bioimaging Consortium, A*STAR.

Dr Tang was given the SingHealth Residency Outstanding Faculty Award for outstanding and dedicated contribution to Medical Education for Academic Year 2013/2014.

Past and Current Duke-NUS MD Research Students

Hou Wenlu (Class of 2014)

Wei Lei (Class of 2015)

Ong Yan Zhi (Class of 2018)

Yip Chang Tung, Harold (Class of 2019)

Evelyn Gabriela UTAMA (Class of 2020)

Student Publications

NA

Tang, Shenglan *MBBS, MPH, PhD*

Professor, SingHealth-Duke-NUS Global Health Institute

Mary & James Semans International Professor of Medicine, Duke University School of Medicine

Professor and Associate Director, Duke Global Health Institute

Professor of Global Health, Duke Kunshan University

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Research Summary

Dr. Tang has undertaken policy-oriented research in the areas of healthcare financing and disease control (e.g. TB and NCDs) with a special reference to equity. He has also conducted evaluation for large projects/program of health interventions to assess the effectiveness and efficiency of health interventions. He has been PI for more than 20 grants, funded by a number of international organizations including the world Bank, WHO, European Commission, the Melinda and Bill Gates Foundation, etc. His research has led to more than 120 peer-reviewed publications including five at the Lancet, 2 books, and several technical reports/working papers submitted to the national governments and the international organizations. Dr. Tang has also served a member of many research grant review panels/committee including Wellcome Trust and MRC in UK, NIH in USA and the national natural science foundation in China.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Tang, Tjun Yip *MD, FRCS, FAMS*

Consultant, Vascular and Endovascular Surgery, Singapore General Hospital

Adjunct Assistant Professor, Yong Loo Lin School of Medicine, National University of Singapore

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Website: -



Research Summary

Dr Tang conducts clinical research in vascular surgery. His current main interests include devices and their related outcomes for varicose veins and chronic venous insufficiency treatment and outcome prediction following lower limb revascularization. He has active subspecialty interest in diabetic foot salvage, endovenous surgery and renal access. He has published widely on these subjects and has over 150 peer - reviewed publications and numerous books geared towards medical students and junior doctors to help them prepare for their exams. He is a Fellow of both the Royal College of Surgeons of England and Royal College of Physicians and Surgeons of Glasgow.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Tay, Bee Gek Laura *MBBS, MMED (Int Med), MRCP, MCI (NUS)*

Senior Consultant, Geriatric Medicine, Department of General Medicine, Sengkang Health
Clinical Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

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Website: -



Research Summary

Dr Tay's interests have been in the areas of cognitive disorders including delirium, frailty and sarcopenia, with a particularly keen interest in cognitive frailty and the impact of the frailty phenotype on disease progression in older adults with Alzheimer's disease. Her research projects span community to acute care, including multi-modal interventions for cognitively impaired older adults, frail older fallers and pre-frail elders in the community. Her publications have included the pathophysiology and biomarkers for physical frailty and sarcopenia.

Past and Current Duke-NUS MD Research Students

LIM Ying Jun (Class of 2020)

Student Publications

NA

Tay, Kiang Hiong *MBBS, FRCR, FAMS*

Associate Professor and Academic Vice Chair, Clinical Services Operations, SingHealth Duke-NUS Radiological Sciences Academic Clinical Programme

Head & Senior Consultant, Dept of Diagnostic Radiology, Singapore General Hospital

Director, Interventional Radiology Centre, Singapore General Hospital

Associate Professor, Yong Loo Lin School of Medicine, National University of Singapore



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Website: -

Research Summary

My current research focus is on interventional radiology. I am running several projects related to lower limb angioplasty (including a randomize trial of drug eluting balloon angioplasty vs conventional angioplasty for below knee peripheral arterial disease), endovascular aortic repairs, dialysis access interventions and interventional oncology. I am also working with NTU to develop a novel biodegradable embolization plug which has begun in vivo testing in animal models. My various research projects are in various phases of implementation and this would enable the student to experience the entire research cycle from start to end in a short time frame. The student will have the opportunity to propose a research question, do the relevant literature review and statistical work up, write up a grant proposal, make an IRB submission, recruit patients, assist in the interventions, patient follow up, manage a database, data analysis, submit abstracts to scientific meetings, poster/oral presentations and finally writing up the manuscript for publication.

Past and Current Duke-NUS MD Research Students

Syed Aftab (Class of 2013)

Tan Zehao (Class of 2015)

Ni Wenwen (Class of 2018)

Loy Liang Meng (Class of 2019)

Student Publications

1. **Aftab SA**, Sng KW, Tay KH. Necrotizing Fasciitis following Endovenous Laser Treatment and Stab Avulsions of Lower-Limb Varicose Veins. *J Vasc Interv Radiol*. 2012; 23(8):1103-6.
2. **Aftab SA**, Tay KH, Irani FG, Gong Lo RH, Gogna A, Haaland B, Tan SG, Chng SP, Pasupathy S, Choong HL, Tan BS. Randomized clinical trial of cutting balloon angioplasty versus high-pressure balloon angioplasty in hemodialysis arteriovenous fistula stenoses resistant to conventional balloon angioplasty. *J Vasc Interv Radiol*. 2014 Feb;25(2):190-8. **(Awarded JVIR Editor's Award for Best Clinical Research Paper for 2014)**

Tay, Shian Chao *MBBS, FRCS (Edin & Glasg), FAM (Hand Surg), MBiomedSci (Mayo)*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant Hand Surgeon and Director of Wrist, Singapore General Hospital

Programme Director, SingHealth Hand Surgery Residency Programme

Director, Biomechanics Laboratory @ Academia

Director, Biomechanics Research, SingHealth Surgery Academic Clinical Programme



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Website: -

Research Summary

Dr. Tay is interested in translational and clinical research that has impact on clinical and surgical practice. Besides numerous retrospective clinical studies, Dr Tay has ongoing prospective studies and randomized clinical trials on trigger finger and other conditions of the hand and wrist.

In the laboratory, he is involved in the following – investigation into carpal and distal radioulnar joint instability, flexor tendon research, study of trigger finger pathoanatomy and pathomechanics using ultrasound, synovial fluid kinematics of the wrist joint, surgical implant and surgical suture performance, to name a few.

Past and Current Duke-NUS MD Research Students

Liu Xuan (Class of 2014)

Hay Aik Siew Robyn (Class of 2015)

Leow Su Chen, Geraldine (Class of 2016)

Chuang Xue Ling (Class of 2017, Co-mentor)

Chang Min Kai (Class of 2018)

Student Publications

1. Mat Jais IS, **Liu X**, An KN, Tay SC. A method for carpal motion hysteresis quantification in 4-dimensional imaging of the wrist. *Med Eng Phys.* 2014 Dec;36(12):1699-703.
2. Wong KP, **Hay RA**, Tay SC. Surgical outcomes of fifth metacarpal neck fractures--a comparative analysis of dorsal plating versus tension band wiring. *Hand Surg.* 2015;20(1):99-105.

Teh, Bin Tean *MD, PhD*

Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Principal Investigator, NCCS-VARI translational research laboratory, National Cancer Centre Singapore

Senior Principal Investigator, Cancer Science Institute of Singapore, National University Singapore

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Website: -



Research Summary

Recent whole-genome and whole-exome sequencing efforts have revealed that chromatin enzymes (CE) are among the most frequently mutated gene class in both solid and hematological malignancies. We have previously identified CE mutations in human cancers including those of kidney (Daglish, et al., *Nature*, 2010; Varela et al., *Nature*, 2011), bile duct, (Ong et al., *Nature Genet*, 2012; Chan-on et al., 2013), stomach (Zang et al., *Nature Genet*, 2012) and urothelial cancer (Song et al., *Sci Transl Med*, 2013). These mutations include loss-of-function (LOF) mutations in CE such as PBRM1, ARID1A, MLL3, SETD2, and UTX. To date, whether these mutated genes can serve as potential therapeutic targets remain unknown. Our laboratory focuses on synthetic lethality studies and drug screening using cancer cell lines harbouring these mutations. Using *in vitro* and *in vivo* cancer models, we also study the effects of CE inhibitors and their mechanism of action.

Past and Current Duke-NUS MD Research Students

Jang Jia Hui Isabelle (Class of 2014)

Koh Kay Nguan, Kelvin (Class of 2016; Co-mentor)

Student Publications

NA

Tenen, Daniel *MD*

Director, Cancer Science Institute of Singapore, National University of Singapore
Programme Leader and Senior Principal Investigator, Cancer Stem Cells Programme,
Cancer Science Institute of Singapore
Distinguished Professor of Medicine, National University of Singapore
Program Leader, Blood Program, Harvard Stem Cell Institute, Harvard Medical School

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Website: ResearchGate Profile / CSI



Research Summary

Professor Tenen's laboratory focuses on gene regulation, normal differentiation, and cancer and leukemia. Current focus is the role of RNA in regulation of normal hematopoietic cells and cancer. (1) These include identification of a long noncoding antisense RNA (Ebraldize, *Genes Dev*, 2008) which restricts expression of master regulatory genes such as PU.1 in lineages in which PU.1 must be suppressed, such as T cells; recent results indicate that knockdown of these antisense RNAs can result in upregulation of tumor suppressors in leukemic cells, a potential therapeutic approach. (2) The role of RNA editing in cancer (Chen, *Nat Med*, 2013). This is a paradigm shift, in that it demonstrates how non-DNA mutational mechanisms can lead to genetic changes in cancer. (3) We are studying how RNA regulates epigenetic marks like DNA methylation, and that RNA can be utilized to induce gene specific demethylation (Di Ruscio, *Nature*, 2013).

Past and Current Duke-NUS MD Research Students

Wong Sook Yee (Class of 2011)

Student Publications

NA

Teo, Irene *PhD*

Assistant Professor, Lien Centre for Palliative Care, Programme in Health Services and Systems Research, Duke-NUS Medical School

Clinical Psychologist, National Cancer Centre Singapore

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Website:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1hsohy5xRUNAG/bibliography/48990509/public/?sort=date&direction=descending>



Research Summary

Dr. Teo's research and clinical interests include coping and adjustment to emotional distress, body image changes, and disease symptoms (e.g., pain, fatigue) in the areas of oncology and pain. She is interested in development of psychosocial interventions aimed at alleviating distress for patients and their families. Her recent research examined the feasibility and acceptability of a symptom management program using CBT and mindfulness approaches for patients with advanced cancer. Through the Lien Centre for Palliative Care, Dr. Teo is also involved in a multi-site cohort study examining the psychosocial well-being of advanced cancer patients and their caregivers at the end of life.

Past and Current Duke-NUS MD Research Students

Tan Gui Fang, Edlyn (Class of 2018)

Lim Muhammad Haikel Asyraf (Class of 2019; Co-mentor)

Student Publications

NA

Teo, Melissa Ching Ching *MBBS, MMed (Surg), FRCSEd, FAMS, MPH*

Adjunct Professor, Duke-NUS Medical School

Director, Strategic Initiatives, SingHealth Duke-NUS Oncology Academic Clinical Programme

Director, Centre for Peritoneal and Pelvic Disease

Head and Senior Consultant, Department of Surgical Oncology, National Cancer Centre Singapore

Visiting Consultant, Department of General Surgery, Singapore General Hospital

Visiting Consultant, Department of Gynaecologic Oncology, KK Women's and Children's Hospital

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University of Singapore



Contact: 6436 8283

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Website: -

Research Summary

My current research interests include

- 1) Gastrointestinal cancers and peritoneal metastases
- 2) Pelvic malignancies
- 3) Retroperitoneal sarcomas
- 4) Gastrointestinal Stromal Tumours (GIST)
- 5) Melanomas

Our team exploits techniques for genomic sequencing aimed at deriving the underlying molecular signatures accountable for the propagation of various aspects and stages of the above disease subtypes. The ability to obtain unique tumour samples separated in time and space during surgery allows our group to correct for tumour heterogeneity and evolution. We are keen to correlate the molecular phenotype with important clinical parameters such as prognosis to allow for selection of patients for therapy. Importantly, the molecular features of these diseases are analysed to allow for derivation of novel therapeutic strategies that can potentially impact clinical care.

Past and Current Duke-NUS MD Research Students

Koh Kay Nguan, Kelvin (Class of 2016)

Wang Weining (Class of 2018)

Naveeshini Nair Chandran (Class of 2019)

Student Publications

NA

Tey, Hong Liang *MBBS, FRCP(Edin), MRCPS(Glasg), FAMS, Dip.(Geriatric Med.)*

Consultant Clinician Researcher and Research Director, National Skin Centre, Singapore

Contact: 6253 4455

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Website: Google Scholar Profile



Research Summary

Dr Tey conducts translational research in the areas of skin imaging, neuro-dermatology (itch and sweat disorders) and medical dermatology. He is the PI of multiple grants, an awardee of the NMRC Transition Award and has authored over 120 international publications, including a book (*The Black Book of Clinical Examination*).

Past and Current Duke-NUS MD Research Students

Ruan Xucong (Class of 2017)

LIM Gim Hui (Class of 2020)

Student Publications

NA

Thike, Aye Aye *MBBS, MMedSci, PhD*

Assistant Professor, Duke-NUS Medical School

Senior Medical Lab Scientist, Department of Anatomical Pathology, Singapore General Hospital

Contact: 6576 7550

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Website: Breast Research Programme in PATH ACP/ PubMed



Research Summary

Dr. Aye is a research pathologist with a keen interest in breast pathology, and has been involved in studying breast cancer for over 10 years, with many peer-reviewed publications in this field. Her current research activities focus on triple negative breast cancers, Ductal Carcinoma in Situ (DCIS) of the breast, phyllodes tumours and invasive breast cancers in intradepartmental projects as well as local and international collaborations. She also supervises NUS (Honours, Masters and PhD) students' projects in the area of immunoscore. She is also helping medical students from NUS and young medical doctors to give realistic goals in medical research and ownership of the paper. She is currently working on biomarker discovery in metaplastic carcinoma of the breast, and role of tumour infiltrating lymphocytes (TILs) in predicting recurrence and progression of Ductal Carcinoma in situ (DCIS) of the Breast.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Thumboo, Julian *MBBS (S'pore), MMed (Int Med), MRCP (UK), FAMS (Rheumatology), FRCP (Edin)*

Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

Academic Vice Chair, Research, SingHealth Duke-NUS Medicine Academic Clinical Programme

Senior Consultant and Head, Department of Rheumatology & Immunology, Singapore General Hospital

Adjunct Professor, Department Of Medicine, Yong Loo Lin School Of Medicine, National University of Singapore



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Research Summary

Prof Thumboo's research interest is in the areas of Rheumatology, Systemic Lupus Erythematosus and Osteoarthritis and Patient Reported Outcomes.

Past and Current Duke-NUS MD Research Students

Celeste Ong Lay Kheng (Class of 2013)
Esther Low Su Hui (Class of 2014)
Sun Wenxin (Class of 2014)
Heng Li-Mei Lisa (Class of 2016)
Huang Youyi (Class of 2016; Co-mentor)

Rahul Jawa (Class of 2016; Co-mentor)
Hang Guanqi (Class of 2017; Co-mentor)
Choo Wei Tak (Class of 2018; Co-mentor)
Shih Shan Wei, Shannon (Class of 2018; Co-mentor)
Yan Shi (Class of 2019; Co-mentor)

Student Publications

NA

Toh, Han Chong *BSc (London), MB Bchir (Cambridge), FRCP Edin, FAMS*

Associate Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Senior Consultant and Deputy Director, Division of Medical Oncology, National Cancer Centre Singapore

Adjunct Principal Investigator, Institute of Molecular and Cell Biology, A*STAR

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Website: -



Research Summary

Dr Toh's interests are in gastrointestinal cancers and cell and immunotherapy. He leads the Cancer Vaccine and Cell Therapy Laboratory at the NCC as an Associate Investigator and has obtained 10 competitive grant awards. His projects revolve around clinical trials in reduced intensity blood stem cell transplant, dendritic cell cancer vaccines, adoptive T cell therapy, cytokine therapy and new drugs and targeted therapy for solid tumours, especially for hepatocellular carcinoma. He is also studying the stromal, biomarker discovery and immune signatures in hepatocellular carcinoma.

In 2009, he was recognized by being awarded the National Clinician Scientist Award for his ongoing work in using adoptive T cell therapy in a novel clinical study in patients with advanced nasopharyngeal cancer. His postdoctoral fellow, Dr Marissa Teo, is the first Singaporean to be awarded the International UNESCO-L'Oreal Women in Science Fellowship Award for the work on adoptive T cell therapy. He is also a Council Member of the Singapore Medical Association (SMA) and Editor, SMA News. He has been past President of the Singapore Society of Oncology and Past Chairman, Chapter of Medical Oncology, Academy of Medicine.

Past and Current Duke-NUS MD Research Students

Charmain Heah Ya Ting (Class of 2013)
Chen Kaina (Class of 2015)
Huang Lu (Class of 2015)
Bok Ke Xin (Class of 2018; Co-mentor)

Tan Yu Bin (Class of 2018)
Ng Rui Xin (Class of 2019; Co-mentor)
Tan Si Qi (Class of 2019; Co-mentor)

Student Publications

1. Wang WW, Ang SF, Kumar R, **Heah C**, Utama A, Tania NP, Li H, Tan SH, Poo D, Choo SP, Chow WC, Tan CK, Toh HC. Identification of serum monocyte chemoattractant protein-1 and prolactin as potential tumor markers in hepatocellular carcinoma. *PLoS One*. 2013 Jul 18;8(7):e68904.

Tong, Louis Hak Tien *MBBS(S'pore), FRCS(Ed), DM(Nott), PhD(S'pore)*

Professor, Duke-NUS Medical School

Senior Consultant, Corneal and External Eye Disease Service, Singapore National Eye Centre

Head, Ocular Surface Research Group, Singapore Eye Research Institute

Co-Head, Ocular Inflammation & Immunology Research Group, Singapore Eye Research Institute

Head, Research Training & Development, Singapore Eye Research Institute

Adjunct Professor, Yong Loo Lin School of Medicine, National University of Singapore



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Research Summary

Dr Tong conducts clinical research on dry eye patients with a focus on new therapeutics (eg, mucomimetics, autologous plasma tears) and new diagnostic modalities (eg, tear proteomics, Meibomian gland imaging). His recent work includes the translational in-vitro and in-vivo research into ocular surface inflammation, and the immunology of autoimmune diseases. His recent research also involves transcript profiling, microRNA and signal transduction in pterygium. He is developing a network of physicians and scientists who participate in multidisciplinary solutions to ocular surface disease. Dr Tong is PI of the CSA, a MOH and a few industry grants, co-PI of 2 other NMRC grants and a Singhealth grant, authored over 160 papers, 10 book chapters and sits on the diagnosis subcommittee of the international dry eye workshop II.

Past and Current Duke-NUS MD Research Students

Melbin Emerson Sy Co (Class of 2013)

Sim Hui Shan (Class of 2014)

Student Publications

1. Tong L, Lan W, **Sim HS**, Hou A. Conjunctivochalasis is the precursor to pterygium. *Med Hypotheses*. 2013 Nov;81(5):927-30.
2. **Sim HS**, Petznick A, Barbier Sylvaine, Tan JH, Acharya RU, Tong L. Collaborative Research Initiative for Meibomian Gland Dysfunction (CORIM). A randomized controlled treatment trial of eyelid-warming therapies in meibomian gland dysfunction. *Ophthalmol Ther*. 2014 Dec; 3(1):37-48.

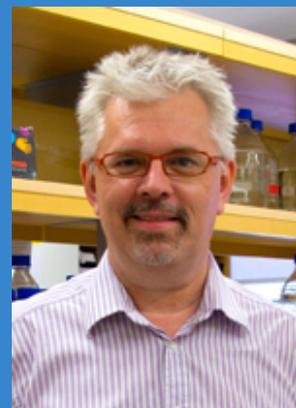
Van Dongen, Antonius *PhD*

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Research Summary

The VanDongen laboratory studies the mechanisms underlying the processes of learning and memory, at the molecular, cellular and systems level. Our current focus is on the immediate-early gene *Arc*, which plays an essential role in memory consolidation. We have shown that efficient *Arc* translation requires coincident activation of the NMDA receptor and fear/reward signaling pathways. We have localized *Arc* protein to the nucleus, where it associates with PML bodies, sites of epigenetic transcription regulation, and with Tip60, a histone-acetyltransferase implicated in Alzheimer's disease, suggesting that *Arc* mediates formation of long term memories through epigenetic regulation of gene expression. A second project investigates how information is processed, encoded and stored in networks formed by neurons growing in vitro, using a combination of optogenetics and multi-electrode array recording techniques. These experiments have demonstrated that generic cortical microcircuits have fading and hidden memory processes, and are able to process complex spatio-temporal information. This optogenetic MEA platform allows us to investigate the molecular and physiological basis of disorders in memory, cognition, and perception. These projects are supported by an in silico drug development program which identifies small molecules with efficacy at therapeutic targets identified by our research program.

Past and Current Duke-NUS MD Research Students

Choo Min (Class of 2015)

Student Publications

NA

Vasudevan, Subhash *PhD*

Professor, Programme in Emerging Infectious Diseases, Duke-NUS Medical School

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Website: -



Research Summary

The Vasudevan lab at Duke-NUS will work in the following research areas:

1. Therapeutics for emerging infectious diseases
2. Protein-protein and protein-RNA interactions (characterising the interactome of flaviviruses using yeast-two hybrid technology as well as biochemically using immunoprecipitation and other proteomics techniques).

Structure and function studies of multifunctional viral proteins in order to understand in precise detail the mechanism of action of processes catalysed by enzyme targets of disease causing viruses – this will ultimately help understand the mode of action of new drugs and also identify potential resistant mutants that could help to improve drug design.

Past and Current Duke-NUS MD Research Students

Tan Boon Hian (Class of 2014)
Wong Ziyang Dennis (Class of 2014)
Rene Gatsinga (Class of 2018)

Student Publications

1. Low JG, Sung C, Wijaya L, Wei Y, Rathore AP, Watanabe S, **Tan BH**, Toh L, Chua LT, Hou Y, Chow A, Howe S, Chan WK, Tan KH, Chung JS, Cherng BP, Lye DC, Tambayah PA, Ng LC, Connolly J, Hibberd ML, Leo YS, Cheung YB, Ooi EE, Vasudevan SG. Efficacy and safety of celgosivir in patients with dengue fever (CELADEN): a phase 1b, randomised, double-blind, placebo-controlled, proof-of-concept trial. *Lancet Infect Dis*. 2014 Aug;14(8):706-15.

Virshup, David *MD*

Professor and Programme Director, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Professor of Pediatrics, Duke University

Joint Professor, Department of Biochemistry, NUS

Adjunct Investigator, Institute of Medical Biology, A*STAR

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Research Summary

Wnt signaling is a highly conserved pathway important in stem cell maintenance, cell proliferation, cancer and development. The Virshup laboratory studies Wnt signaling pathways with an emphasis on Wnt secretion. We have developed novel, specific and potent drugs that prevent Wnt secretion by inhibiting the O-acyltransferase enzyme, PORCN. We are interested in understanding which patients will benefit from Wnt inhibitors, what happens to cancers treated with Wnt inhibitors, and what drugs might synergize with Wnt inhibitors. Techniques include molecular and genetic analysis, and cell culture and mouse based models.

Past and Current Duke-NUS MD Research Students

Tina Tan (Class of 2011)

Constance Chen Yuan Yi (Class of 2017; Co-mentor)

Student Publications

1. Covey TM, Kaur S, **Tan Ong T**, Proffitt KD, Wu Y, Tan P, Virshup DM. PORCN moonlights in a Wnt-independent pathway that regulates cancer cell proliferation. PLoS ONE. 2012;7(4):e34532.

Wang, Hongyan *PhD*

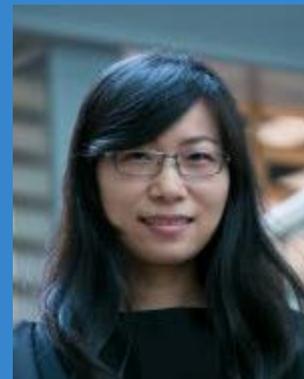
Associate Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Associate Professor, Department of Physiology, Yong Loo Lin School of Medicine, National University of Singapore

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Research Summary

The choice of self-renewal versus differentiation is a fundamental issue in stem cell and cancer biology. Recently, *Drosophila melanogaster* neural stem cells, larval brain neuroblasts, were emerged as an excellent model for study stem cell self-renewal and tumorigenesis. We are focused on identifying brain tumour suppressors and underlying mechanisms by which they prevent tumour formation in larval brains. Currently, we are interested in addressing the following key questions: What mutations trigger neural stem cells to become cancer stem cells? How asymmetric divisions of neural stem cells are regulated? What are the mechanisms that prevent more mature cells from dedifferentiating back into neural stem cells? Our work will provide important insights into the molecular mechanisms underlying neural stem cell self-renewal and differentiation and may ultimately contribute to better therapies for various types of cancers including human brain tumours.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Wang, Jie Jin

Professor, Centre for Clinician-Scientist Development, Duke-NUS Medical School

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Website: -



Research Summary

Dr Wang conducted epidemiological research in visual impairment and the two common causes of visual impairment in older people: age-related macular degeneration (AMD) and age-related cataract. She was a key investigator of the Blue Mountains Eye Study, a population-based cohort study over 15 years. She led a cohort study of 2000 cataract surgical patients to clarify a long-term debate over the possible adverse effect of cataract surgery on AMD risk. She collaborates with international researchers in a number of consortia and has been leading projects investigating joint contribution of modifiable factors and genetic susceptibility to the risk of AMD and cataract.

Dr Wang has supervised 4 Masters and 9 PhD candidates with completion. She is the principal investigator of 4 and a co-investigator of 13 research grants funded by Australian National Health and Medical Research Council. She has published 570 research articles, 19 reviews and 6 book chapters.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Wang, Linfa *PhD*

Professor and Director, Programme in Emerging Infectious Diseases, Duke-NUS Medical School

Professor, Duke Global Health Institute, Duke University School of Medicine

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Research Summary

Dr. Wang's research has three main focuses: 1) Development of novel diagnostic platforms for emerging infectious diseases; b) Virus-host interaction of bat-borne highly lethal zoonotic viruses; and 3) Uniqueness of bat immunity in the context of asymptomatic infection and long lifespan. He is an international leader in the field of emerging zoonotic viruses and virus-host interaction. He was a member of the WHO SARS Scientific Research Advisory Committee, and played a key role in identifying bats as the natural host of SARS-like viruses. Prof Wang has more than 350 scientific publications (with a current h-index of 75), including papers in *Science* and *Nature*. He is currently the Editor-in-Chief for the open access *Virology Journal*. In 2010, Prof Wang was elected to the Australian Academy of Technological Sciences and Engineering.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

1. **Ahn M**, Anderson DE, Zhang Q, Tan CW, Lim BL, Luko K, Wen M, Chia WN, Mani S, Wang LC, Ng JHJ, Sobota RM, Dutertre C-A, Ginhoux F, Shi Z-L, Irving A and Wang L-F. (2019) Dampened NLRP3-mediated inflammation in bats and implications for a special viral reservoir host. **Nat Microbiol**. doi: 10.1038/s41564-019-0371-3. [Epub ahead of print]
2. Zhou P, Chionh YT, Irac SE, **Ahn M**, Jia Ng JH, Fossum E, Bogen B, Ginhoux F, Irving AT, Dutertre CA, Wang L-F (2016) Unlocking bat immunology: establishment of Pteropus alecto bone marrow-derived dendritic cells and macrophages. **Sci Rep**. 6:38597. doi: 10.1038/srep38597.
3. **Ahn M**, Cui J, Irving AT, Wang L-F. (2016) Unique Loss of the PYHIN Gene Family in Bats Amongst Mammals: Implications for Inflammasome Sensing. **Sci Rep** 6:21722. doi: 10.1038/srep21722.
4. **Uehara A**, Tan CW, Mani S, Chua KB, Leo YS, Anderson DE, Wang L-F. (2018) Serological evidence of human infection by bat orthoreovirus in Singapore. **J Med Virol**. doi: 10.1002/jmv.25355.
5. Xie J, Li Y, Shen X, **Goh G**, Zhu Y, Cui J, Wang L-F, Shi ZL, Zhou P. (2018) Dampened STING-Dependent Interferon Activation in Bats. **Cell Host Microbe**. 23(3):297-301.e4. doi: 10.1016/j.chom.2018.01.006.

Wang-Casey, Mei *MD, PhD*

Associate Professor, Programme in Cancer and Stem Cell Biology, Duke-NUS Medical School

Honorary Joint Associate Professor, Department of Biochemistry, Yong Loo Lin School of Medicine, National University Singapore

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Research Summary

The focus of the basic research aspect of the lab is to advance the understanding of the role(s) that specific prenylated proteins play in cellular signaling and cancer development. In this setting, inhibitors of prenylation serve as useful tools in identifying important players in cell signaling. We have found that inhibition of *lcm1*, the enzyme for the last step of prenylation modification, induced excessive autophagy and cell death, in addition to G1 cell cycle arrest. Suppression of autophagy rescues cancer cells from cell death, suggesting that autophagy induction by inhibiting *lcm1* promotes cancer cell death (Wang et al., *J.Biol.Chem.* 2008 Jul 4; 283(27):18678-84). Since evading apoptosis is an important part of tumorigenesis, inducing cancer cell death through an alternative route such as autophagic cell death can be a novel approach therapeutically. Considerable effort in the lab is focused on the identification of the CAAX protein(s) through which the efficacy of *lcm1* inhibition is mediated by induction of autophagy and cell death.

The focus of the translational aspect of our research is to further advance the preclinical evaluation of potent and selective small molecule inhibitors of *lcm1* and one of the enzymes involved in the isoprenoid addition step, protein geranylgeranyltransferase I (GGTase-I), as anticancer agents. The scope of the research includes: (i) the investigation of the *in vivo* efficacy against proliferation and metastasis of these compounds using animal models; to this end, our studies have shown that cysmethynil has *in vivo* antiproliferative efficacies against multiple human cancers using a xenograft mouse model (Figure 3), (Wang et al, 2008; Wang et al., under review). (ii), the identification of new and better inhibitors in collaboration with our colleagues in NUS (SIN Pat. Appl. No. 200907728-0; manuscripts under review); and (iii), the investigation of the pharmacokinetics and ADME/Tox properties of these small molecule inhibitors (Wang et al., *J Chromatogr B Analyt Technol Biomed Life Sci.* 2009 Feb 15:877(5-6):553-7.).

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Wong, Hee Kit *MBBS(S'pore), MMED(Surg), FRCS(Glas), MCh(Orth) Liv., FAMS*

Professor, Department of Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore

Chair, University Orthopaedics, Hand and Reconstructive Microsurgery Cluster (UOHC), National University Health System (NUHS), Singapore

Senior Consultant, University Spine Centre, UOHC, NUHS



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Research Summary

Professor Wong's research interests are in translational and clinical research. Prominent among his recent basic science studies is the identification and validation of reference markers for neuropathic pain, the biology and biomechanics of spinal fusion, pre-clinical application of architecturally optimized bioresorbable scaffolds as bone graft substitutes in spinal reconstructive surgery, and evaluation of carriers for stem cells and growth factors in spinal fusion. Prof Wong's ongoing clinical studies are focused in the areas of adolescent spinal deformity, adult and complex spinal deformity surgery, and minimally invasive spinal surgery.

Past and Current Duke-NUS MD Research Students

Wang Ming (Class of 2013)

Student Publications

1. **Wang M**, Abbah SA, Hu T, Toh SY, Lam RW, Goh JC, Wong HK. Minimizing the severity of rhBMP-2-induced inflammation and heterotopic ossification with a polyelectrolyte carrier incorporating heparin on microbead templates. *Spine (Phila Pa 1976)*. 2013 Aug 1;38(17):1452-8.
2. Hu T, Abbah SA, **Wang M**, Toh SY, Moon Lam RW, Naidu M, Bhakta G, Cool S, Bhakoo K, Li J, Cho-Hong Goh J, Wong HK. Novel Protamine based Polyelectrolyte carrier enhance low dose rhBMP-2 in Posterolateral Spinal Fusion. *Spine (Phila Pa 1976)*. 2015 Feb 19.
3. **Wang, M**, SA Abbah, Thu, WMR Lam, SY Toh, T Liu, M C Simon, K Bhakoo, J Li, JC H Goh, H K Wong: Polyelectrolyte Compled Carrier Enhances Therapeutic Efficiency and Safety Profile of BMP-2 in Porcine Lumbar Intervertebral Fusion Model. *Spine 40*. No.13 (2015):964-73

Wong, Tien Yin *MBBS, MMED(Ophth), MPH, PHD, FRCSE, FRANZCO, FAMS*

Provost's Chair Professor

Vice Dean, Office of Academic and Clinical Development, Duke-NUS Medical School

Medical Director, Singapore National Eye Centre

Senior Consultant, Medical Retinal Department, Singapore National Eye Centre

Senior Principal Clinician-Scientist, Singapore Eye Research Institute



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Website: -

Research Summary

Diabetic retinopathy, age-related macular degeneration, retinal diseases, ocular imaging, and epidemiology.

Past and Current Duke-NUS MD Research Students

Ong Shin Yeu (Class of 2012)

Goh Kang Hao James (Class of 2016)

Chong Yong He (Class of 2017)

Melissa Chan Mei-Hsia (Class of 2018; Co-mentor)

Lee Liang Qi (Class of 2018)

Low Kok Yao (Class of 2019)

YIP Yuen Ting Michelle (Class of 2020)

YU Zijun (Class of 2020; Co-mentor)

Student Publications

1. **Ong SY**, Ikram MK, Haaland BA, Cheng CY, Saw SM, Wong TY, Cheung CY. Myopia and cognitive dysfunction: the singapore malay eye study. *Invest Ophthalmol Vis Sci*. 2013 Jan 28;54(1):799-803.
2. **Ong SY**, Cheung CY, Li X, Lamoureux EL, Ikram MK, Ding J, Cheng CY, Haaland BA, Saw SM, Venketasubramanian N, Chen CP, Wong TY. Visual impairment, age-related eye diseases, and cognitive function: the Singapore Malay Eye study. *Arch Ophthalmol*. 2012 Jul;130(7):895-900.
3. **Goh JK**, Cheung CY, Sim SS, Tan PC, Tan GS, Wong TY. Retinal Imaging Techniques for Diabetic Retinopathy Screening. *J Diabetes Sci Technol*. 2016 Feb 1;10(2):282-94.

Wong, Ting Hway

Adjunct Assistant Professor, Duke-NUS Medical School

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

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Research Summary

1. Injury outcomes in older patients
2. Emergency surgery in aging populations

Areas of research (injury outcomes in older patients, health services research, and emergency surgery in aging populations) are an “area of need” for research that the international community is only just beginning to realize the importance of. Current projects range from outcome prediction (mortality, long-term function), caregiver burden, and frailty in surgical patients.

Past and Current Duke-NUS MD Research Students

Chia Theng Xin, Shermain (Class of 2018)

NG Ho Man (Class of 2020; Co-mentor)

Student Publications

NA

Wong, Tzee Ling Tina

Associate Professor, Duke-NUS Medical School

Senior Consultant, Glaucoma Service, Singapore National Eye Centre

Head, Ocular Therapeutics and Drug Delivery Group, Singapore Eye Research Institute

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Website: -



Research Summary

A/Prof Wong conducts clinical research on glaucoma patients with a focus on quality of life with glaucoma, new therapeutics (medications and surgical treatments). In addition A/Prof Wong has a lab in Singapore Eye Research Institute (SERI) that focuses on the mechanisms and pathophysiology of ocular wound healing as well as the discovery and evaluation of novel therapeutic targets to combat ocular scarring and fibrosis. Sophisticated animal models are used to evaluate therapeutics and clinical responses and supported by an extensive range of in vitro cell culture techniques.

Sustained drug delivery platforms to provide a more targeted approach to therapeutics delivery is also a major interest of A/Prof Wong and her group.

A/Prof Wong has a strong collaboration with School of Materials Science and engineering, NTU as well as the Laboratory for Translational and Molecular Imaging, Duke NUS that fits into the current program in the SERI lab.

Past and Current Duke-NUS MD Research Students

Wu Hong King (Class of 2017; Co-mentor)

Student Publications

NA

Yang, Meijuan Grace

Assistant Professor, Lien Centre for Palliative Care, Duke-NUS Medical School
Consultant, Division of Palliative Medicine, National Cancer Centre Singapore

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Website: <https://scholar.google.com.sg/citations?user=c2RAvtkAAAAJ&hl=en>



Research Summary

Dr Grace Yang conducts health services research in Palliative Care. Her recent work includes the development and evaluation of novel models for palliative care delivery in the outpatient and inpatient hospital setting. As a practicing physician, her research is clinically orientated and aims to improve the quality of life of patients with serious illnesses and their families. Research opportunities for students include projects that develop, pilot and evaluate models of palliative care service delivery in order to improve patient outcomes.

Past and Current Duke-NUS MD Research Students

NG Chang Zhi Adrian (Class of 2020)

Student Publications

NA

Yang, Yong *PhD*

Adjunct Assistant Professor, Centre for Quantitative Medicine, Duke-NUS Medical School
Head, Department of Epidemiology, Medical Board, Singapore General Hospital

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Website: -



Research Summary

Dr Yang Yong conducts hospital epidemiological and clinical research on infection disease and chronic diseases with the usage of hospital discharge database and other sources of data for the past 10 years. His recent work has entailed “The effect of chronic liver disease on venous thromboembolism among medically managed patients in Singapore General Hospital”, “The effect of comorbidity on hospital mortality in patients with SLE from an Asian tertiary hospital”, “The burden of diabetes mellitus in elderly patients from an Asian tertiary hospital”, “The effect of comorbidity and age on hospital mortality and length of stay in patients with sepsis” and “Respiratory dysfunction in sepsis patients – the protective effect of diabetes mellitus”. He is developing a comprehensive hospital discharge database, which may be used to conduct epidemiological and clinical research in various fields. Dr Yang has authored over 30 papers in peer-reviewed international journals.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Yen, Paul Michael *MD*

Professor, Programme in Cardiovascular and Metabolic Disorders, Duke-NUS Medical School

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Website: Google Scholar Profile



Research Summary

Our laboratory has had a long-standing interest in transcriptional regulation by thyroid hormone receptors (TRs) and other nuclear hormone receptors. In particular, we are interested in the recruitment of specific co-factors to thyroid hormone response elements (TREs) and concomitant changes in histone acetylation and methylation in the promoters of individual target genes and the entire genome. Recently, we observed that negative regulation of the glycoprotein hormone α subunit target gene by thyroid hormone surprisingly involves histone acetylation at specific sites. cAMP activates transcription via the same promoter region but involves histone acetylation at other sites. Additionally, we have observed that positive regulation of various target genes by thyroid hormone involves different histone modifications. We currently are using siRNA as well as histone acetyltransferase (HAT) and histone deacetylase (HDAC) inhibitors to determine the critical modifications that determine negative and positive regulation of target genes. We also plan to use ChIP-on-chip and ChIP seq technology to determine the prevalence of such changes across the genome. These studies will be extended to ligand-mediated regulation of other nuclear hormone receptors, including PPAR, LXR, and FXR which play important roles in metabolism and cholesterol regulation.

We also are interested in the cell signaling and cell cycle regulation by PI-3 kinase regulatory subunits, particularly p55 PI3K. Our recent studies have shown that the amino-terminus of p55PI3K (N24) interacts with Rb to regulate cell cycle progression. Using adenovirus expressing N24 and HIV-TAT fusion proteins that contain N24, we have found that N24 peptide inhibits cell proliferation in a wide range of cancer cell lines, and blocks tumor growth in several in vivo cancer models. We currently are studying the mechanisms of N24 effects on cell proliferation, tumor growth, metastasis, and cell redifferentiation. We also plan to screen chemical libraries to find peptidomimetics that may be useful in the treatment of human cancer.

Past and Current Duke-NUS MD Research Students

Aw Kang Lie Darius (Class of 2014)

Sun Jingfeng (Class of 2016)

Jann Adriel Chua Sy (Class of 2017)

Tan Hong Yu (Class of 2017; Co-mentor)

Koh Shu Qing (Class of 2018; Co-mentor)

Li Enlin (Class of 2019; Co-mentor)

Yao Jie (Class of 2019; Co-mentor)

Student Publications

1. **Aw DK**, Sinha RA, Xie SY, Yen PM. Differential AMPK phosphorylation by glucagon and metformin regulates insulin signaling in human hepatic cells. *Biochem Biophys Res Commun*. 2014 May 16;447(4):569-73.
2. **Aw DK**, Sinha RA, Tan HC, Loh LM, Salvatore D, Yen PM. Studies of molecular mechanisms associated with increased deiodinase 3 expression in a case of consumptive hypothyroidism. *J Clin Endocrinol Metab*. 2014 Nov;99(11):3965-71.

Yeo, Cheo Lian *MBBS, MMed (Paediatrics), FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

Visiting Senior Consultant, Department of Child Development, KK Women's and Children's Hospital

Adjunct Associate Professor, Yong Loo Lin School of Medicine, National University of Singapore

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Website: -



Research Summary

Dr Yeo conducts clinical research on high risk infants, in particular very low birth weight infants focusing mainly on effects of therapies and outcome. She is Program Director of the National Neonatal Resuscitation Program, an initiative developed to improve acute care of newborns. She has conducted funded projects on immediate and long term outcome of very low birth weight infants with varying medical challenges. She is co-PI of a national neonatal network database project that facilitates performance tracking and improvement initiatives for care of high risk newborns. Her latest project on evaluation of neurological behaviour in late preterm newborn infants using the Hammersmith Neurological Assessment remains active at enrolment of eligible patients.

Her interest in research in medical education is seen in her effort at addressing the effects of frequency of neonatal resuscitation training on knowledge, skills and confidence level of staff involved in care of newborn infants.

Past and Current Duke-NUS MD Research Students

Joanne Chin En Yi (Class of 2017)

LEE Li Wen (Class of 2020)

Hwang Yung Hsin Gwen (Class of 2018)

Student Publications

NA

Yeo, George Seow Heong *MBBS, FRCOG, FAMS*

Adjunct Professor, Duke-NUS Medical School

Chief of Obstetrics, Division of Obstetrics and Gynaecology, KK Women's and Children's Hospital

Director, Antenatal Diagnostic Centre, KK Women's and Children's Hospital

Head, Obstetric Ultrasound and Prenatal Diagnosis Unit, KK Women's and Children's Hospital

Professor, Yong Loo Lin School of Medicine, National University of Singapore



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Website: [Google Scholar Profile](#)

Research Summary

My current and future research is as follows:

1. Studying maternal demographic, anthropometric, socio-economic, obstetric, biochemical, and fetal data to understand and predict adverse pregnancy outcomes. This is achieved by analysing research data generated from existing studies with reliable research methodologies and linked to readily available service data
2. Special interest in fetal biometry and fetal growth restriction
3. Using single-cell technology to identify novel biomarkers exclusively expressed on fetal cells
4. Understanding the contribution of Down syndrome to Alzheimer's disease and identifying possible targets for treatment
5. Studying circulating cell-free fetal DNA for non-invasive prenatal diagnosis of chromosomal abnormalities and early prediction of pre-eclampsia
6. Overseeing database design, data capture and quality control of several antenatal, perinatal and postnatal databases that are supporting the current key clinical services.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Yeo, Khung Keong *MBBS, ABIM (Int Med, US), ABIM (Cardiology, US), ABIM (Interventional Cardiology, US), ABVM (Endovascular, US), ABVM (Vascular, US)*



Adjunct Associate Professor, Duke-NUS Medical School

Director, Cardiology Senior Residency Programme, SingHealth Duke-NUS Cardiovascular Sciences Academic Clinical Programme

Senior Consultant, Department of Cardiology, National Heart Centre Singapore

Scientific Lead, Databases and Biostatistics Core, National Heart Research Institute Singapore

Clinical Senior Lecturer, Yong Loo Lin School of Medicine, National University of Singapore

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Website: -

Research Summary

Dr Yeo conducts research in 2 main areas. The first is to explore long-term outcomes (clinical, cost-effectiveness, quality-of-care) in patients with coronary artery disease and/or heart failure. In this area, he has established a multicenter collaborative effort involving all restructured hospitals in Singapore, which will allow longitudinal study across a large number of patients in Singapore. Early analysis has explored the role of age, gender, race, and compliance to medical therapy in influencing long-term outcomes in patients who undergo percutaneous coronary intervention. He has published a number of outcomes research papers related to this field. He is also interested in percutaneous therapies for mitral regurgitation. This includes the use of novel therapies such as the MitraClip and the Carillon for the treatment of severe mitral regurgitation. He has co-edited an Atlas on the MitraClip therapy and is leading an Asia-Pacific Registry involving Singapore, Malaysia, Hong Kong and Australia.

Past and Current Duke-NUS MD Research Students

Sashen Aponso (Class of 2015)

KOH Tracy (Class of 2020)

Freda Jawan (Class of 2016)

Billy Yonathan Wijaya (Class of 2017)

Xie Yufei (Class of 2019)

Student Publications

NA

Yeo, Seng Jin *MBBS, FRCS*

Adjunct Associate Professor, Duke-NUS Medical School

Senior Consultant and Director, Adult Reconstruction Service, Department of Orthopaedic Surgery, Singapore General Hospital

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Research Summary

Dr Yeo conducts clinical research on orthopaedic patients with a focus on knee arthroplasty and other adult reconstruction joint replacement surgery. His recent research evaluated outcomes of unicompartmental knee arthroplasty (UKA) in patients with preoperative genu recurvatum. His other current research interest is in knee kinematics using fluoroscopy and gait analysis. Dr Yeo has been PI for number of clinical trials as well as authored more than 60 papers.

Past and Current Duke-NUS MD Research Students

Zhou Zhihong (Class of 2013)

Zhu Meng (Class of 2017; Co-mentor)

Yeh Ze Yang Jared (Class of 2018)

Punn KUHATAPARUKS (Class of 2020; Co-mentor)

Jimin SUH (Class of 2020)

Student Publications

1. **Zhou Z**, Yew KS, Arul E, Chin PL, Tay KJ, Lo NN, Chia SL, Yeo SJ. Recovery in knee range of motion reaches a plateau by 12 months after total knee arthroplasty. *Knee Surg Sports Traumatol Arthrosc*, 23: 1729-33, 2015
2. Chen JY, Rikhranj IS, **Zhou Z**, Tay DK, Chin PL, Chia SL, Lo NN, Yeo SJ. Can tranexamic acid and hydrogen peroxide reduce blood loss in cemented total knee arthroplasty? *Arch Orthop Trauma Surg*, 134: 997-1002, 2014.
3. **Zhou ZH**, Yew AKS, Chin PL, Lo NN, Yeo SJ, Chia SL. Total knee arthroplasty complicated by distal deep vein thromboembolism: Does it affect the functional outcome? *Proceedings of Singapore Healthcare*, 22: 262-266, 2013
4. **Zhu M**, Chen JY, Yew AKS, Chia SL, Lo NN, Yeo SJ. Effects of Anaesthetic Technique on Blood Loss and Complications after Simultaneous Bilateral Total Knee Arthroplasty. *Arch Orthop Trauma Surg*, 135(4):565-7, 2015
5. **Zhu M**, Chen JY, Yew AK, Chia SL, Lo NN, Yeo SJ. Intra-articular tranexamic acid wash during bilateral total knee arthroplasty. *J Orthop Surg (Hong Kong)*, 23(3):290-3, 2015
6. **Zhu M**, Chen JY, Chong HC, Yew AK, Foo LS, Chia SL, Lo NN, Yeo SJ. Outcomes following total knee arthroplasty with CT-based patient-specific instrumentation. *Knee Surg Sports Traumatol Arthrosc*. 2015 Sep 26.
7. **Zhu M**, Ang CL, Yeo SJ, Lo NN, Chia SL, Chong HC. Minimally Invasive Computer-Assisted Total Knee Arthroplasty Compared with Conventional Total Knee Arthroplasty: A Prospective 9-Year Follow-Up. *J Arthroplasty*, 31(5):1000-4, 2016

Yeoh, Allen Eng Juh *MBBS, Mmed (Pediatrics)*

Senior Consultant, Department of Paediatrics, National University Hospital

Associate Professor, Department of Paediatrics, Yong Loo Lin School of Medicine, National University of Singapore

Viva-Goh Foundation Associate Professor, Paediatric Oncology, National University of Singapore

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Research Summary

Assoc Professor Allen Yeoh's research interests are in the treatment and biology of childhood haematologic malignancies. He is currently the principal investigator of the multi-centre Malaysia-Singapore ALL and AML trials competitively funded by NMRC and A*STAR/Singapore Cancer Syndicate. Currently these trials have been highly successful with > 80% and >60% projected cure. He is the first Singapore doctor to receive the American Society of Hematology Merit Award for his pioneering work in gene expression profiling in leukaemia. This work was one of the highest cited articles in this field for 2003.

He is also actively involved in genome wide association studies using cutting edge chip technologies from Affymetrix and Illumina. He has profiled more than 140 children with ALL on gene expression profiling using Affymetrix HG-U133 Plus2.0 as well as genotyping SNPs on Illumina Human1M-Duo chips. His aim is to discover biomarkers for treatment response in the Malaysia-Singapore studies so as to improve cure rate.

Past and Current Duke-NUS MD Research Students

Cecilia Kwok Sze Nga (Class of 2011)

Chen Lianghe (Class of 2019)

Sharon Poh Shuxian (Class of 2013)

Wong Hai Liang Marc (Class of 2015)

Student Publications

1. **Kwok CS**, Quah TC, Ariffin H, Tay SK, Yeoh AE. Mitochondrial D-loop polymorphisms and mitochondrial DNA content in childhood acute lymphoblastic leukemia. *J Pediatr Hematol Oncol.* 2011; 33(6):e239-44.
2. Yeoh AE, Ariffin H, Chai EL, **Kwok CS**, Chan YH, Ponnudurai K, Campana D, Tan PL, Chan MY, Kham SK, Chong LA, Tan AM, Lin HP, Quah TC. Minimal residual disease-guided treatment deintensification for children with acute lymphoblastic leukemia: results from the Malaysia-Singapore acute lymphoblastic leukemia 2003 study. *J Clin Oncol.* 2012; 30(19):2384-92.

Yong, Eu Leong *MBBS (S'pore), MMED (O&G, S'pore), MRCOG, PhD (S'pore)*

Head and Senior Consultant, Department of Obstetrics and Gynaecology, National University Hospital

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Research Summary

Steroid/nuclear receptors and human disease, and Herbal Drug discovery programme.

Past and Current Duke-NUS MD Research Students

Yu Dawen (Class of 2016)

Tng Han Ying (Class of 2018)

Student Publications

NA

Yoon, Sungwon *MPH, PhD*

Assistant Professor, Programme in Health Services and Systems Research, Duke-NUS Medical School

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Research Summary

Dr. Yoon is a public health researcher and behavioral scientist. Her research interest is focused on understanding individual and population behavior of public health significance to inform health services planning and evaluation. She has a particular interest in psychosocial adaptation patterns and health service optimization in patients with cancer and chronic conditions; health services research in primary care; and behavioral health. She is currently undertaking five research projects in collaboration with clinicians on topics ranging from effective chronic kidney management in primary care and population health survey on cardiovascular disease knowledge, attitude and practice to quality of life of colorectal cancer survivors. She has received 15 competitive funding as PI and Co-I.

Past and Current Duke-NUS MD Research Students

Chua Teck Beng (Class of 2019; Co-mentor)

Student Publications

NA

Zhong, Liang *PhD*

Associate Professor, Programme in Cardiovascular and Metabolic Disorders, Duke-NUS Medical School

Theme Principal Investigator, National Heart Research Institute of Singapore, National Heart Centre Singapore

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Website: [Google Scholar Profile](#)



Research Summary

Dr Zhong conducts translational research on i) CMR feature-tracking for heart disease; ii) Regional right ventricular structure-function relationship in pulmonary hypertension; and iii) FFR in coronary artery disease. His recent research evaluated the clinical value of combining computational modeling and hemodynamics to better diagnose ischemic coronary stenosis. Dr Zhong has been awarded on over 6 NMRC grants and A*STAR grants, and he has authored over 4 patents, 50 papers, 10 book chapters and over 100 abstracts/articles in prestigious international conferences.

Past and Current Duke-NUS MD Research Students

Lin Sen (Class of 2018)

Student Publications

NA

Zhou, Juan Helen *PhD*

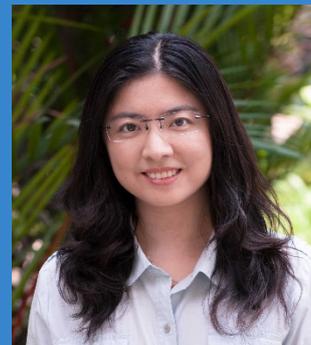
Associate Professor, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Principal Investigator, Clinical Imaging Research Centre, A*STAR

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Research Summary

Our lab studies the human neural bases of cognition and the associated vulnerability patterns in neuropsychiatric disorders, mainly focusing on neurodegenerative diseases (e.g. Alzheimer's disease and frontotemporal dementia), attention deficit hyperactivity disorder, and Schizophrenia. Multimodal neuroimaging and psychophysical techniques are employed, including magnetic resonance imaging (MRI), functional MRI, diffusion tensor imaging, and electroencephalograph. We are interested in examining the network-level structural and functional brain connectivity in vivo by statistical or computational methods. Based on the network-based neurodegeneration hypothesis, we examine the abnormal brain networks in subjects with dementia or mild cognitive impairment. Ongoing projects are focusing on healthy elderly and subjects at preclinical stages as well as the effect of intervention techniques using multimodal neuroimaging and neuropsychological measures. Our long-term goal is to investigate the interactions among brain network dynamics, behaviours, diseases, and genotypes to develop noninvasive biomarkers for differential diagnosis, disease monitoring, and treatment design.

Past and Current Duke-NUS MD Research Students

Thomas Adi Kurnia Susanto (Class of 2014)

LIM Kai Wei, Joseph (Class of 2020)

Terrence Tay WS (Class of 2016; Co-mentor)

Ching Yin Ying (Class of 2017; Co-mentor)

Student Publications

1. **Susanto TAK**, Pua EPK, Zhou J. Cognition, brain atrophy and cerebrospinal fluid biomarkers changes from preclinical to dementia stage of AD and the influence of APOE, *Journal of Alzheimer's Disease*, 2015; 45(1): 253-68.

Zhou, Lei *PhD*

Assistant Professor, Duke-NUS Medical School

Head and Senior Principal Research Scientist, Ocular Proteomics Laboratory, Singapore Eye Research Institute

Assistant Professor, Dept. of Ophthalmology, Yong Loo Lin School of Medicine, National University of Singapore

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Research Summary

Dr Zhou applies cutting-edge mass spectrometry and proteomics/metabolomics technologies for eye research. One of his research interests is to identify metabolites biomarkers/risk factors in diabetic retinopathy (DR), age-related macular degeneration (AMD) and other eye diseases using liquid chromatography-mass spectrometry (LC-MS) based metabolomics. He pioneered the comprehensive analysis of the human tear fluid proteome and metabolome and enabled major advances in disease diagnosis using tear proteins. He has close to 70 peer-reviewed publications and several patents.

Past and Current Duke-NUS MD Research Students

Nicodemus Oey (Class of 2012, Co-mentor)

Student Publications

Nicodemus Oey, How Wing Leung, Rajaram Ezhilarasan, Lei Zhou, Roger Beuerman, and Hendrika VanDongen. A neuronal activity-dependent dual function chromatin-modifying complex regulates Arc expression. *eNeuro*. 2015. Jan-Feb; 2(1): ENEURO.0020-14.2015.