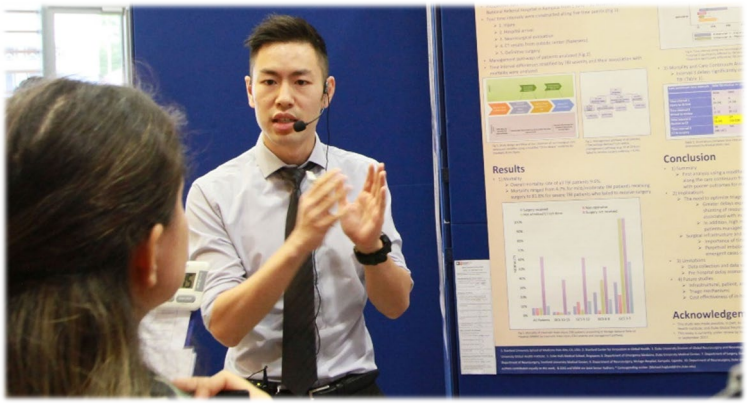
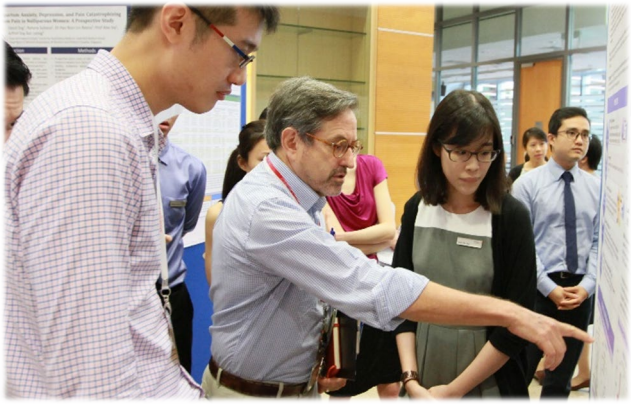
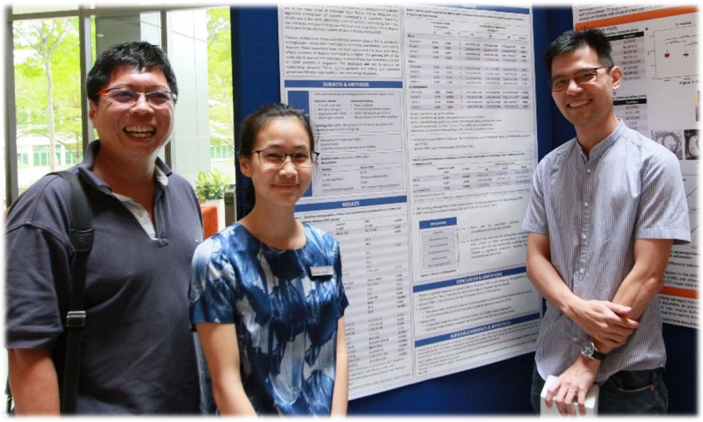




Medical Students'
Guide to Research Mentors



Duke NUS Medical School

- 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 Action (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 Elentra.

BY ALPHABETICAL ORDER

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

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

BY PROGRAMME / AREA OF RESEARCH

Duke-NUS Signature Research Programmes

Cancer and Stem Cell Biology

Chacko, Ann-Marie
Chuah, Charles
Hu, Jiancheng
Hwang, William Ying Khee
Itahana, Koji
Iyer, N Gopalakrishna
Lee, Caroline Guat Lay
Li, Shang
Ong, Choon Kiat
Ong, Sin Tiong
Rozen, Steve
Sabapathy, Kanaga
Tan, Patrick
Teh, Bin Tean
Toh, Han Chong
Virshup, David
Wang-Casey, Mei

Cardiovascular and Metabolic Disorders

Coffman, Thomas M.
Cook, Stuart A.
Hausenloy, Derek
Lam, Carolyn Su Ping
Leow, Melvin Khee Shing
Silver, David L.
Tai, E Shyong
Yen, Paul Michael
Zhong, Liang

Emerging Infectious Diseases

Bertoletti, Antonio
Lok, Shee Mei
Low, Jenny Guek Hong
Ooi, Eng Eong
Ooi, Yaw Shin
Smith, Gavin J.
St. John, Ashley L.
Vasudevan, Subhash
Wang, Linfa

Health Services and Systems Research

Chan, Angelique
Cheung, Yin Bun
Finkelstein, Eric
Gandhi, Mihir
Graves, Nicholas
Jafar, Tazeen Hasan
Lamoureux, Ecosse
Liu, Jin
Liu, Nan
Malhotra, Chetna
Malhotra, Rahul
Matchar, David B.
Ong, Eng Hock Marcus
Østbye, Truls
Ozdemir, Semra
Peres, Marco Aurelio de Anselmo
Quah, Stella R.
Saffari, Seyed Ehsan
Sung, Sharon Cohan
Teo, Irene
Wang, Jie Jin
Yoon, Sungwon

Neuroscience and Behavioural Disorders

Chan, Ling Ling
Chee, Michael
Fung, Daniel Shuen Sheng
Gooley, Joshua
Je, Hyunsoo Shawn
Lee, Tih-Shih
Saw, Seang Mei
Tan, Eng King
Wang, Hongyan
Zhang, Su-Chun
Zhou, Juan Helen

SingHealth Duke-NUS Academic Clinical Programmes

Anaesthesiology and Perioperative Sciences

Bong, Choon Looi
Chew, Sophia Tsong Huey
Hwang, Nian Chih
Ong, Biauw Chi
Sia, Alex Tiong Heng
Sng, Ban Leong

Cardiovascular Sciences

Baskaran, Lohendran
Chin, Calvin
Chua, Terrance Siang Jin
Cook, Stuart A.
Hausenloy, Derek
Lam, Carolyn Su Ping
Tan, Swee Yaw
Yeo, Khung Keong
Zhong, Liang

Emergency Medicine

Ho, Fu Wah Andrew
Liu, Nan
Ong, Eng Hock Marcus

Family Medicine

Ang, Seng Bin
Low, Lian Leng
Tan, Ngiap Chuan

Medicine

Chay, Oh Moh
Chen, Yu Helen
Cheung, Man Sze Alice
Chow, Wan Cheng
Chuah, Charles
Devanand, Anantham
Fong, Kok Yong
Goh, Yeow Tee
Hwang, William Ying Khee
Koh, Siyue Mariko
Lee, Haur Yueh
Leung, Katy Ying Ying
Low, Hsiu Ling Andrea
Low, Jenny Guek Hong
Ng, Yee Sien
Puar, Hai Kiat Troy
Tan, Chieh Suai
Tan, Hong Chang
Tay, Bee Gek Laura
Thumboo, Julian

Musculoskeletal Sciences

Chew, Kelvin Tai Loon
Chia, Shi-Lu
Koh, Joyce Suang Bee
Lie, Denny Tjiauw Tjoen
Liow, Ming Han Lincoln
Mahadev, Arjandas
Yeo, Seng Jin

Neuroscience

Ang, Beng Ti Christopher
Chan, Derrick Wei-Shih
Chan, Ling Ling
De Silva, Deidre Anne
Kandiah, Nagaendran
Kumar, Prakash
Liao, Ping
Lim, Kah Leong
Lo, Yew Long
Narasimhalu, Kaavya
Ng, Wai Hoe
Tan, Eng King
Tan, Louis Chew Seng

Obstetrics and Gynaecology

Ang, Seng Bin
Chan, Jerry Kok Yen
Ku, Chee Wai
Sia, Alex Tiong Heng
Tan, Kok Hian
Yeo, George Seow Heong

Oncology

Cheah, Peh Yean
Chia, Shulyn Claramae
Choo, Su Pin
Chow, Pierce
Chowbay, Balram
Goh, Brian Kim Poh
Hu, Jiancheng
Iyer, N Gopalakrishna
Lee, Caroline Guat Lay
Lim, Chwee Ming
Lim, Darren Wan-Teck
Lim, Soon Thye
Neo, Hui Shan Shirlyn
Ng, Quan Sing
Ngeow, Joanne
Ong, Chin-Ann Johnny
Ong, Choon Kiat
Sabapathy, Kanaga
Tan, Emile John
Tan, Hiang Khoon
Tan, Iain Bee Huat
Tang, Tjun Yip
Teh, Bin Tean
Toh, Han Chong
Yang, Meijuan Grace

Ophthalmology and Visual Sciences

Ang, Marcus
Aung, Tin
Barathi, Veluchamy A.
Cheng, Ching-Yu
Hoang, Donny
Lamoureux, Ecosse
Lee, Shu-Yen
Mehta, Jodhbir
Milea, Dan
Nongpiur, Monisha Esther
Sabanayagam, Charumathi
Saw, Seang Mei
Schmetterer, Leopold
Ting, Shu Wei Daniel
Tong, Louis Hak Tien
Wong, Tien Yin
Wong, Tzee Ling Tina
Zhou, Lei

Paediatrics

Albani, Salvatore
Chan, Derrick Wei-Shih
Chay, Oh Moh
Chew, Chu Shan Elaine
Chew, Suk Peng Valerie
Lee, Jan Hau
Lek, Ngee
Rajadurai, Victor Samuel
Tan, Ene Choo
Yeo, Cheo Lian

Pathology

Iqbal, Jabed
Koh, Tse Hsien
Lim, Kiat Hon Tony
Tan, Puay Hoon

Radiological Sciences

Chan, Ling Ling
Tan, Bien Soo
Tang, Phua Hwee

Tay, Kiang Hiong

Surgery

Cheah, Peh Yean
Chia, Shulyn Claramae
Chow, Pierce
Goh, Brian Kim Poh
Iyer, N Gopalakrishna
Lim, Chwee Ming
Loh, Amos
Ong, Chin-Ann Johnny
Tan, Emile John
Tan, Hiang Khoon
Tang, Tjun Yip

SingHealth Duke-NUS Global Health Institute

Albani, Salvatore
Ang, Marcus
Aung, Tin
Chan, Angelique
Cheng, Ching-Yu
Chow, Pierce
Chow, Wan Cheng
Chuah, Charles
De Silva, Deidre Anne
Finkelstein, Eric
Graves, Nicholas
Jafar, Tazeen Hasan
Lam, Carolyn Su Ping
Lamoureux, Ecosse
Lee, Jan Hau
Liu, Nan
Loh, Amos
Malhotra, Chetna
Malhotra, Rahul
Matchar, David
Mehta, Jodhbir
Ong, Eng Hock Marcus
Ooi, Eng Eong
Østbye, Truls
Ozdemir, Semra
Rajadurai, Victor Samuel
Rozen, Steve
Smith, Gavin J.
St John, Ashley L.
Tan, Hiang Khoon
Tan, Kok Hian
Tan, Patrick
Tang, Shenglan
Teh, Bin Tean
Toh, Han Chong
Wang, Linfa
Wong, Tien Yin
Yeo, Khung Keong

Other Programmes / Institutions

Duke-NUS Office of Education

Compton, Scott

YLLSOM / SSHSPH / NUHS

Chee, Michael
Chiong, Edmund
Kuan, Win Sen
Lee, Yung Seng
Loh, Thomas Kwok Seng
Pervaiz, Shazib
Saw, Seang Mei
Tai, Bee Choo
Tan, Poh Lin
Wong, Hee Kit
Yeoh, Allen Eng Juh
Yong, Eu Leong
Zhou, Juan Helen

National Healthcare Group

Ding, Yew Yoong
Fung, Daniel Shuen Sheng
Leow, Melvin Khee Shing
Subramaniam, Mythily
Sung, Min
Tang, Mark Boon Yang
Tey, Hong Liang

Others

Chen, William Wei Ning
Chew, Fook Tim
Choo, Su Pin
Gan, Yunn Hwen
Halliwell, Barry
Lee, Ser Yee
Li, Jialiang
Lim, Kah Leong
Loi, Tien Tau Carol
Low, Kin Huat
Tan, Thiam Chye
Tenen, Daniel
Wong, Tien Yin
Yang, Yong

Albani, Salvatore *MD, PhD*

Professor, Duke-NUS Medical School and SingHealth Duke-NUS Global Health Institute
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: salvo@duke-nus.edu.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 Rhematological 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 and SingHealth Duke-NUS Global Health Institute

Senior Consultant, Corneal & External Eye Disease Department, Singapore National Eye Centre

Senior Consultant, Refractive Surgery Department, Singapore National Eye Centre

Senior Consultant, Cataract & Comprehensive Ophthalmology Department, Singapore National Eye Centre

Co-Clinical Director, Myopia Centre, 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_vsIQ1Ids1sNizFqWJ8ZCL1V3EY-hV

Research Summary

Marcus Ang is currently Senior 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)
WANG Weiliang (Class of 2022; Co-mentor)
GAN Jinyuan (Class of 2023)

Student Publications

1. **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)
2. 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)*

Clinical Associate Professor, Duke-NUS Medical School

Head and Senior 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: https://scholar.google.com/citations?hl=en&user=2LAKhsUAAAAJ

Research Summary

My research interest includes devices, clinical as well as health services research. Projects in the coming year includes Activity Trackers looking at physical activity and gait in pregnant women, Photophlethysmography features in wearable that can predict diabetes, Augmented reality for education using hololens,

Past and Current Duke-NUS MD Research Students

Angela Frances Yap Hui Wen (Class of 2017)
He Huiling (Class of 2018; Co-mentor)
Cai Meijin (Class of 2019)
Sharon Hanna SUNNY (Class of 2021)
XIA Junyan Jolene (Class of 2022)

Student Publications

1. **Yap AF**, Kwan YH, Ang SB. A systematic review on the effects of active participation in rhythm-centred music making on different aspects of health. European Journal of Integrative Medicine. 2017;9:44–9
2. **Yap AF**, Kwan YH, Tan CS, Ibrahim S, Ang SB. Rhythm-centred music making in community living elderly: a randomized pilot study. BMC Complement Altern Med. 2017 Jun 14;17(1):311.
3. **M Cai,** S L Loy, K H Tan, K M Godfrey, P Gluckman, Y S Chong, L Shek, Y B Cheung, N L, Y S Lee, S Y Chan, J K Y Chan, F Yap, S B Ang. Association of Elective and Emergency Cesarean Delivery With Early Childhood Overweight at 12 Months of Age. JAMA Network Open. 2018;1(7):e185025. doi:10.1001/jamanetworkopen.2018.5025
4. **Cai M,** Tan KH, Ang SB I-ACT: Integrated study on effect of Activity on ComplicaTions in pregnancy: study protocol of a multiethnic prospective cohort study BMJ Open 2019;9:e025970. doi: 10.1136/bmjopen-2018-025970
5. **He H**, Koh MJ, Lee HY, Ang SB. Pilot study of a customized nanotextile wet garment treatment on moderate and severe atopic dermatitis: A randomized clinical trial. Pediatr Dermatol. 2019 Oct 30
6. **Soenjoyo KR,** Chua BWB, Wee LWY, Aan Koh MJ, Ang SB**.** Treatment of Cutaneous Viral Warts in Children: A Review [published online ahead of print, 2020 Jul 19]. Dermatol Ther. 2020;10.1111/dth.14034. doi:10.1111/dth.14034
7. **Sunny SH**, Malhotra R, Ang SB, Lim CSD, Tan YSA, Soh YMB, Ho XYC, Gostelow M, Tsang LPM, Lock SHS, Kwek SY, Lim YTJ, Vijakumar K and Tan NC (2020) Facilitators and Barriers to Post-partum Diabetes Screening Among Mothers With a History of Gestational Diabetes Mellitus–A Qualitative Study From Singapore. Front. Endocrinol. 11:602
8. S. B. Ang, **J. Y. Xia**, S. J. Cheng, M. T. Chua, L. Goh & S. S. Dhaliwal (2021) A pilot screening study for low bone mass in Singaporean women using years since menopause and BMI, Climacteric, DOI: 10.1080/13697137.2021.1908989.

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

Academic Chair, Ophthalmology & Visual Sciences Academic Clinical Program (ACP), SingHealth/Duke-NUS School of Medicine

Kwan Im Thong Hood Cho Temple Professor of Ophthalmology, Duke-NUS Medical School

Medical Director, Singapore National Eye Centre

Senior Consultant, Glaucoma Department, Singapore National Eye Centre

Group Director, Research (Scientific), SingHealth

Contact: -+65-6227 7255

Email: aung.tin@singhealth.com.sg

Website:
https://www.snec.com.sg/profile/aung-tin
https://www.duke-nus.edu.sg/directory/detail/aung-tin

Research Summary

He is a clinician scientist, with research interests in angle closure glaucoma and glaucoma genetics. He currently has more than 600 publications including 15 major papers in Nature Genetics (6 as First or last author) as well as papers in JAMA and Lancet. He has been awarded >US$20 million in competitive research grant funding.

Professor Aung Tin has been instrumental in establishing a leading research programme on angle closure glaucoma, a disease that remains a major cause of blindness across the world, especially in Asia. His research programme extends from clinical phenotyping, genetics, screening, and imaging, through to therapeutics using lasers and surgery via randomised controlled trials. He is the leader of various global research consortia that have been successful in identifying novel genes associated with various forms of glaucoma and has led major international clinical trials.

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/iovs.14-14903.

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Barathi, Veluchamy A. *DVM, PhD*

Associate Professor, ACP in Ophthalmology & Visual Sciences, DUKE-NUS Graduate Medical School

Assistant Director/Principal Investigator

Translational Pre-Clinical Model Platform, Singapore Eye Research Institute

Chair, Singhealth IACUC

Assistant Professor, Department of Ophthalmology, Yong Loo Lin School of Medicine, National University of Singapore
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Website: https://scholar.google.com.sg/citations?user=J-ZjfEkAAAAJ&hl=en

Research Summary

- Animal models of Ocular Diseases and Eye growth patterns
- Pathophysiology and Pharmacological intervention of Myopia, Diabetic Retinopathy, Glaucoma and AMD Myopia, Glaucoma, Diabetic Retinopathy, Retinal Atrophy and AMD, Retinal Inherited Retinal Disorders, Ocular Infectious Diseases

Research focused on understanding the pathophysiological mechanism and new therapeutics for myopia, glaucoma, ocular infectious diseases, retinal degenerations, retinal atrophies, retinal angiogenic diseases (diabetic retinopathy and Age-related Macular Degeneration). Her research has led to the translational and pre-clinical testing of ocular diseases using specific animal models.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Baskaran, Lohendran

Clinical Assistant Professor, Duke-NUS Medical School

Consultant, Cardiology, National Heart Centre Singapore

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

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

Contact: 67048963

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Research Summary

I am a cardiologist with a research background in medical physics, cardiac risk assessment, imaging and artificial intelligence (AI). My research aims to reduce the mortality, morbidity and healthcare burden of cardiovascular disease (CVD) by harnessing AI to provide personalized risk prediction and targeted preventative intervention that will impact patients' lives.

I furthered my cardiac CT and nuclear cardiology training at Weill Cornell Medicine, New York then became Assistant Professor there, heading the AI research division from 2018-2020. I have over 30 publications with an H-index of 10, 2 textbook chapters, an international conference award and a textbook, "Machine Learning in Cardiovascular Medicine" (Elsevier). My students' contributions are acknowledged in my publications.

I am currently a Co-I of 10 projects on CT and AI-based research at institutional, national and international levels. I am the lead in the establishment of a national CT AI Research Core Lab.

Past and Current Duke-NUS MD Research Students

Olivia Tan Xian-Li (Class of 2015; Co-mentor)
Lim Eng How (Class of 2019; Co-mentor)
Neo Yu Pei (Class of 2022; Co-mentor)
Lee Jing Kai (Class of 2023; Co-mentor)

Student Publications

Gurpreet Singh, Subhi J. Al'Aref, Benjamin C. Lee, **Jing Kai Lee**, Swee Yaw Tan, Fay Y. Lin, Hyuk-Jae Chang, Leslee J. Shaw, Lohendran Baskaran. End-to-End, Pixel-wise Vessel-specific Coronary and Aortic Calcium Detection and Scoring Using Deep Learning. Diagnostics 2021 (In press)

Bertoletti, Antonio *MD*

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

Adjunct Professor, Singapore Immunology Network (SIgN), A*STAR

Contact: 6601 3574

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Website: Bertoletti Lab

Research Summary

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

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.

Bong, Choon Looi *MBChB (Edin), FRCA (Anaes) (UK)*

Clinical Assistant Professor, Duke-NUS Medical School

Senior Consultant, Paediatric Anaesthesia, KK Women's and Children's Hospital

Deputy Vice Chair, Research, ANAES ACP

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Website: -

Research Summary

I am interested in studying the effect of general anaesthesia on the brain, including short term effects such as emergence delirium, and the potential long-term impact of anaesthesia on neuro-development in infants

Past and Current Duke-NUS MD Research Students

Duncun Ho Xun Kiat (Class 2017)

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

Visiting Scientist, Department of Nuclear Medicine and Molecular Imaging, Singapore General Hospital

Non-Physician Faculty Member, SingHealth Nuclear Medicine Training Programme

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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 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 research program is dedicated to the design, synthesis and preclinical validation of molecularly-targeted systems as diagnostics and/or therapeutics for translational applications. These systems include peptides, proteins, and nanomaterials.

By combining unique expertise in probe design, radio-pharmaceutical chemistry, biochemistry, pharmacology, and in vivo imaging, LTMI is focused on developing and translating novel and quantitative imaging agents to interrogate biomarkers and immune signatures in cancer and infectious disease to lead precision medicine initiatives, including:

1. Platform technologies for imaging cancer immuno-oncology (CITI Programme);
2. Development of imaging biomarkers for infectious disease (DENV, ZIKV, etc.) as surrogate clinical endpoints in disease management and therapy monitoring;
3. Development of "imageable" oncolytic virotherapy for brain cancer, lung cancer, ovarian cancer, etc.

Prof Chacko currently leads a national initiative, the Cancer ImmunoTherapy Imaging (CITI) Programme, which received a S$22M Singapore Health and Biomedical Sciences (HBMS) Industry Alignment Fund Pre-Positioning (IAF-PP) grant in late 2018. This initiative aims to address the urgent call for biomarker-driven approaches to monitor tumour immune responses, leveraging on the expertise of its strong multidisciplinary team across 12 research organisations in Singapore and four research themes: Immunology, Chemistry, Imaging, and Clinical Trials.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Chan, Angelique *PhD*

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

Executive Director of the Centre for Ageing Research & Education, 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

Contact: 6516 5685

Email: angelique.chan@duke-nus.edu.sg

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*

Associate Professor, Duke-NUS Medical School

Programme Director, Clinician - Innovator Development Programme (CINDP)

Vice Chair, Research, Paediatrics Academic Clinical Programme

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

Research Director, KK Research Centre

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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*

Professor, Duke-NUS Medical School

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

Vice Chair (Research), SingHealth Duke-NUS Obstetrics and Gynaecology (OBGYN) Academic Clinical Programme

Mentor, SingHealth OBGYN Residency Clinician-Scientist Track

Senior Clinician Scientist, National Medical Research Council

Adjunct Principal Investigator, Singapore Immunology Network, A*STAR

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

Faculty Fellow, Singapore-MIT Alliance for Research and Technology (SMART)

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

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Website: Google Scholar Profile

Research Summary

Dr Chan is a Senior Clinician-Scientist working in the field of Reproductive Medicine encompassing a broad area of research. He started the Experimental Fetal Therapy laboratory, with a primary focus in developing novel fetal molecular therapies in the form of gene transfer and stem cell transplantation. Since then, he has been continuously funded by major grant funding bodies for his research, and has supervised over 15 PhD students successfully. He has published over 230 papers, including prestigious journals such as The Lancet, Nature, Nature Medicine, Cell, Science, Immunity, PNAS, Blood, Stem Cells among others. He is currently the Vice-Chair (Research) of SingHealth Duke-NUS Obstetrics & Gynecology Academic Clinical Program (OBGYN ACP) and is a mentor in the SingHealth OBGYN Residency Clinician-Scientist Track.

Past and Current Duke-NUS MD Research Students

Christina Salendu ERWIN (Class of 2023)

Student Publications

NA

Chan, Ling Ling *MBBS, FRCR, FAMS*

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

Associate Professor, SingHealth Duke-NUS Radiological Sciences Academic Clinical Programme

Senior Consultant & Research Director, Department of Diagnostic Radiology, Singapore General Hospital

Visiting Faculty, Academic Neuroimaging Centre

Editorial Board, Annals of Academy of Medicine, Singapore

Honorary Treasurer, Neuroradiology, Singapore Radiological Society

Contact: 6321 4229

Email: chan.ling.ling@singhealth.com.sg

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 tractrography 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

1. 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.
2. Chan LL, **Ng KM**, et al. Putaminal Diffusivity Correlates With Disease Progression in Parkinson's Disease: Prospective 6-Year Study. Medicine 2016;95(6):e2594. **(Cum Laude Fukuoka City Award - 10th Asian Oceanian Congress Neuroradiology 2015)**
3. **Tan WQ**, … Chan LL. Deterministic Tractography of the Nigrostriatal-Nigropallidal Pathway in Parkinson's Disease. Sci Rep. 2015;5:17283. doi: 10.1038/srep17283.
4. **Tan S**, … Chan LL. Utility of Quantitative Susceptibility Mapping and Diffusion Kurtosis Imaging in the Diagnosis of Early Parkinson's Disease. NeuroImage: Clinical 2021 DOI: 10.1016/j.nicl.2021.102831 **(Best Oral Presentation Award at Radiology Asia 2018)**

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

Professor & Master Academic Clinician, Duke-NUS Medical School

Programme Director, Senior Academic Clinician Development Programme (SACDP)

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

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

Professor, Yong Loo Lin School of Medicine, National University of Singapore (NUS)

Adjunct Professor, Lee Kong Chian School of Medicine

Contact: 6394 1120

Email: chay.oh.moh@singhealth.com.sg

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 Yean *PhD*

Adjunct Associate Professor, Duke-NUS Medical School

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

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

Contact: 6326 5365

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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 tumour suppressors for APC mutation-negative familial CRC syndromes via high-density genotyping arrays and whole exome sequencing; potential biomarkers for early-onset non-syndromic CRC patients as well as metastasis-risk signature for 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 and a case-case (metastasis-positive vs metastasis-negative) GWAS to identify metastasis-risk relevant genes. The laboratory is also focusing on developing anti-KRAS therapeutics using an ex vivo culture system. Dr. Cheah has been a PI on over 10 NMRC//BMRC, SingHealth and Singapore Cancer Society grants, and she has authored over 60 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*

Professor and Director, Centre for Sleep and Cognition, Yong Loo Lin School of Medicine, National University of Singapore

Professor, Neuroscience & Behavioural Disorders Programme, Duke-NUS Medical School

Contact: -

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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)
TEO Kah Hui, Brian (Class of 2021)

Student Publications

NA

Chen, William Wei Ning *PhD*

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

Director, NTU Food Science and Technology Programme, 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 *MD, MBBS, MMed (Psychiatry), Grad Dip (Dynamic Psychotherapy), FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

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

Contact: 63942205

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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 2020)
PAN Yunyi, Jane (Class of 2023)

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, Ophthalmology & Visual Sciences Academic Clinical Program, Duke-NUS Medical School, Singapore

Professor, SingHealth Duke-NUS Global Health Institute

Principal Clinician Scientist, Singapore Eye Research Institute

Head, Ocular Epidemiology Research Group and Data Science Unit, Singapore Eye Research Institute

Senior Clinician Scientist, Glaucoma Department, Singapore National Eye Centre

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Website: Google Scholar Profile

Research Summary

Prof Cheng directs the Singapore Epidemiology of Eye Diseases (SEED) Program, a large multi-disciplinary research program focusing on data science, 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 is also leading the Asian Eye Epidemiology Consortium (AEEC), the largest research network in eye diseases in the Asia-Pacific Region. More recently, his team use AI-based big-data analytics for disease prediction and detection. His research work has led to several high-impact publications in leading journals, including Lancet Digital Health, Lancet Global Health, Nature Genetics, Nature Aging, JAMA, etc. According to a recent global study conducted by Stanford University, Prof Cheng is recognized as one of the top 100 scientists in Ophthalmologist worldwide. He is the PI of >$20million in grant funding from the NMRC and A*STAR and has authored >500 papers.

Past and Current Duke-NUS MD Research Students

Chong Yong He (Class of 2017; Co-mentor)
Low Kok Yao (Class of 2019; Co-mentor)
YU Zijun (Class of 2020)
WANG Zhaoran (Class of 2022; Co-mentor)
Grace May CHUANG (Class of 2023; Co-mentor)

Student Publications

1. Chai X, **Low KY**, Tham YC, Chee ML, Thakur S, Zhang L, Tan NY, Khor CC, Aung T, Wong TY, Cheng CY. Association of Glaucoma Risk Genes with Retinal Nerve Fiber Layer in a Multi-ethnic Asian Population: The Singapore Epidemiology of Eye Diseases Study. Invest Ophthalmol Vis Sci. 2020 Aug;61(10):37. IF=4.80

2. Sobrin L, **Chong YH**, Fan Q, Gan A, Stanwyck LK, Kaidonis G, Craig JE, Kim J, Liao WL, Huang YC, Lee WJ, Hung YJ, Guo X, Hai Y, Ipp E, Pollack S, Hancock H, Price A, Penman A, Mitchell P, Liew G, Smith AV, Gudnason V, Tan G, Klein BEK, Kuo J, Li X, Christiansen MW, Psaty BM, Sandow K; Asian Genetic Epidemiology Network Consortium, Jensen RA, Klein R, Cotch MF, Wang JJ, Jia Y, Chen CJ, Chen YI, Rotter JI, Tsai FJ, Hanis CL, Burdon KP, Wong TY, Cheng CY. Genetically Determined Plasma Lipid Levels and Risk of Diabetic Retinopathy: A Mendelian Randomization Study. Diabetes. 2017 Dec;66(12):3130-3141. IF=9.46

3. **Chong YH**, Fan Q, Tham YC, Gan A, Tan SP, Tan G, Wang JJ, Mitchell P, Wong TY, Cheng CY. Type 2 Diabetes Genetic Variants and Risk of Diabetic Retinopathy. Ophthalmology. 2017 Mar;124(3):336-342. IF=12.08

Cheung, Man Sze Alice *PhD*

Assistant Professor, SingHealth Duke-NUS Medicine (MED) Academic Clinical Programme

Senior Research Fellow, Department of Haematology, Singapore General Hospital

Faculty Member, Faculty Opinions

Topic Editor, Frontiers in Immunology

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https://scholars.croucher.org.hk/scholars/alice-m-s-cheung
/https://projects.croucher.org.hk/news/biochemist-offers-hope-for-leukaemia-treatment

Research Summary

Dr Cheung's research focus on hematopoietic stem cell biology and cellular immunotherapy. Her pioneer work of in vivo clonal analysis of human hematopoietic stem cells using the cutting edge genetic barcoding technology (published in BLOOD) is highly valued in the field and continues to receive enthusiastic response in large scale international conferences. In the recent years, she has done extensive research characterization and expansion of human cord blood derived gamma-delta T cells for the treatment of human cancers. Her research work has gained international recognition through the American Society of Hematology (ASH)'s Global Research Award in 2018. Her team is also engaged with the local authorities for initiation of a local clinical trial on cellular immunotherapy targeting human AML. In addition, she is also partnering with biotechnology company to develop novel gamma-delta T cell based Chimeric-Antigen Receptor (CAR) T cell treatment for future clinical application.

Past and Current Duke-NUS MD Research Students

NA

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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Email: yinbun.cheung@duke-nus.edu.sg
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)
Victoria Jane En LONG (Class of 2022; 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, Chu Shan Elaine *MBBS, MRCPCH, MMED(Paeds)*

Adjunct Assistant Professor, Duke-NUS Medical School

Head & Senior Consultant, Adolescent Medicine Service, Department of Paediatrics, KK Women's and Children's Hospital

Contact: 98281745

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Website: -

Research Summary

Dr Elaine Chew has been working as a specialist in paediatric medicine and adolescent health since 2011. She conducts clinical research on family-based interventions and use of mobile applications in children and adolescents with obesity and has published her research findings in journals. She is a PI on the Duke/Duke-NUS Research Collaborative Project and is currently working to co-develop a community-based intervention for childhood obesity with Duke collaborators and community stakeholders. She is also involved in research on adolescents with eating disorders and has published peer review articles on Asian adolescents with restrictive eating disorder and the adapting of the KKH eating disorder service to COVID-19. She is interested in the biological, social and behavioural determinants of health and upstream prevention of both eating disorders and obesity.

Past and Current Duke-NUS MD Research Students

TAY E, Eric (Class of 2023)
Tultul DAS (Class of 2023; Co-mentor)

Student Publications

NA

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

Contact: 6516 1685

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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

Senior Consultant, SingHealth Duke-NUS Sport and Exercise Medicine Centre

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

Specialist Physician Faculty, SingHealth Family Medicine Residency

Contact: 6850 3502

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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 medince. 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)
TING Hwih Juen, Lisabel (Class of 2023)

Student Publications

NA

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

Associate Professor, Duke-NUS Medical School

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

Senior Consultant, Department of Anaesthesiology, Singapore General Hospital

Senior Consultant, Department of Cardiothoracic Anaesthesia, National Heart Centre Singapore

Visiting Consultant, Division of Surgical Oncology, National Cancer Centre Singapore

Contact: 6321 4605

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Website: https://researchgate.net/profile/Sophia_Chew

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 an unique 14-immune genes signature in HCC which could accurately predicts 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, Shi-Lu *MBBS, DFDC (CAW), FRCS (Surg), FRCS (Ortho & Trauma), DIC, PhD*

Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Orthopaedic Surgery, Singapore General Hospital

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

Contact: -

Email: chia.shi.lu@singhealth.com.sg

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

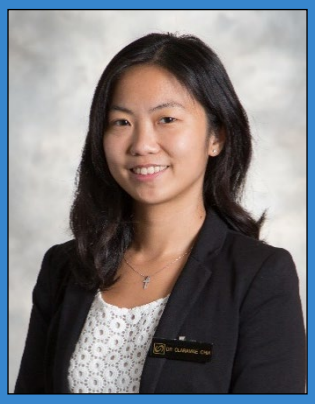
Zhou Zhihong (Class of 2013)
Zhu Meng (Class of 2015)
Cheng Sheng Da, Jowell (Class of 2019)

Student Publications

1. Chen JY, Rikhraj 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]
3. Chen JY, **Zhou Z**, Ang BF, Yew AK, Chou SM, Chia SL, Koh JS, Howe TS. Drilling the near cortex with elongated figure-of-8 holes to reduce the stiffness of a locking compression plate construct. J Orthop Surg (Hong Kong). 2015 Dec;23(3):336-40.
4. **Zhu M**, Chen JY, Chong HC, Yew AKS, Foo LSS, Chia SL, Lo NN, Yeo SJ. Outcomes following total knee arthroplasty with CT-based patient-specific instrumentation. Knee Surg Sports Traumatol Arthosc. 2017 Aug;25(8):2567-2572.
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). 2015 Dec;23(3):290-3.
6. **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. 2016 May;31(5):1000-4.
7. **Zhu M**, Chen JY, Chong HC, Pang HN, Tay DKJ, Chia SL, Lo NN, Yeo SJ. No Difference in Functional Outcomes after Total Knee Arthroplasty with or without Pinless Navigation. J Knee Surg. 2018 Aug ;31(7):649-653.
8. **Zhu M**, Chen JY, Tan YR, Yew AK, Chong HC, Chia SL, Lo NN, Yeo SJ. Effects of anesthetic technique on blood loss and complications after simultaneous bilateral total knee arthroplasty. Arch Orthop Trauma Surg. 2015 Apr;135(4):565-74.

Chia, Shulyn Claramae

MBBS,MMed(Surg),FRCS(Ed)



Clinical Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Sarcoma, Peritoneal and Rare Tumours (SPRinT), Singapore General Hospital and National Cancer Centre Singapore

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

Adjunct Teaching Faculty, Lee Kong Chian School of Medicine, Nanyang Technological University

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Email: claramae.chia.s.l@singhealth.com.sg

Website: -

Research Summary

Dr Chia is the Head and Senior Consultant of the Department of SPRinT. Her research interest is advanced metastatic cancers such peritoneal carcinomatosis. Her current work focuses on the study of these patients' quality of life following cytoreductive surgery and hyperthermic intraperitoneal chemotherapy, as well as the cost effectiveness of this complex surgical procedure. Dr Chia has mentored multiple students and junior doctors. She is also a PI on a number of clinical research IRBs, including 2 HSA-regulated clinical trials and has held grants as both PI and co-I. Dr Chia and her mentees have co-published more than 45 papers in reputable journals and the mentees have had multiple opportunities to present their work in both local and international conferences. SPRinT has mentored 4 Duke-NUS students in the last 2 years, of which 3 has published in Top20% journals (ASO, EJSO and Cancers) and 1 is currently under review.

Past and Current Duke-NUS MD Research Students

Nicholas Shannon (Class of 2017; Co-mentor)
Louis Choon Kit Wong (Class of 2022)

Student Publications

1. **Wong LCK**, Li Z, Fan Q, Tan JW, Tan QX, Wong JSM, Ong CJ, Chia CS. Cytoreductive surgery (CRS) with hyperthermic intraperitoneal chemotherapy (HIPEC) in peritoneal sarcomatosis-A systematic review and meta-analysis. Eur J Surg Oncol. 2021 Oct 15:S0748-7983(21)00761-7. doi: 10.1016/j.ejso.2021.10.013. Epub ahead of print. PMID: 34716035.

Chin, Calvin *MD, MCI, PhD*

Associate Professor, Office of Academic and Clinical Development, Duke-NUS Medical School

Senior Consultant, Department of Cardiology, National Heart Centre Singapore

Director, Cardiac Magnetic Resonance Imaging, National Heart Centre Singapore

Research EXCO, SingHealth Duke-NUS Cardiovascular Sciences Academic Clinical Programme

Contact: 6704 8962

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Website: https://scholar.google.co.uk/citations?user=n6wAnY8AAAAJ&hl=en

Research Summary

My research focuses on understanding the mechanisms driving left ventricular hypertrophy and myocardial fibrosis; and the impact on patient outcomes. This involves the use of cardiovascular imaging techniques, biochemical markers and genetic profiling. 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. To date, my grants as a principal investigator or scientific core-lead totaled more than $2.9 million. My team has published 80 peer reviewed publications. Students involved in my research will be exposed to cutting-edge imaging and analysis techniques; and patient-related data analyses.

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)
Lim Eng How (Class of 2019)
HUANG Xiongzheng, Benjamin (Class of 2021)

Student Publications

1. **Cai J,** Bryant JA, Le TT, Su B, de Marvao A, O'Regan DP, Cook SA**,** Chin CW. Fractal analysis of left ventricular trabeculations is associated with impaired myocardial deformation in healthy Chinese. J Cardiovasc Magn Reson 2017; 19:102. JIF: 5.5
2. **Lim EH**, Le TT, Bryant J, Chung YC, Su B, Gan J, Hausenloy DJ, Cook SA, Chin CWL. Importance of Sex-Specific Regression Models to Estimate Synthetic Hematocrit and Extracellular Volume Fraction. JACC Cardiovasc Imaging 2018; 11(9):1366-1367. JIF: 11.0
3. Pua CJ, Tham N, Chin C, Walsh R, Khor CC, Toepfer CN, Repetti GG, Garfinkel AC, Ewoldt JF, Cloonan P, Chen CS, Lim SQ, **Cai J**, Loo LY, Kong SC, Chiang CWK, Whiffin N, deMarvao A, Lio PM, Hii AA, Yang CX, Le TT, Bylstra Y, Lim WK, Teo JX, Padilha K, Venturini G, Pan B, Govind R, Buchan RJ, Barton P, Tan P, Foo R, Yip JWL, Wong RCC, Chan WX, Pereira AC, Tang HC, Jamur SS, Ware J, Seidman JG, Seidman CE, Cook SA. Genetic studies of hypertrophic cardiomyopathy in Singaporeans identify variants TNNI3 TNNT2 that are common in Chinese Patients. Circ Genom Precis Med. 2020; 13(5):424-434. JIF: 4.1
4. Le TT, **Huang B**, Pua CJ, Tornekar V, Schumacher-Maurer A, Toh D, Bryant J, Ang B, Corden B, Prasad SK, Tang H, Cook SA, Chin CWL**.** Lowering the recommended wall thickness threshold improves diagnostic sensitivity in Asians with hypertrophic cardiomyopathy. JACC Asia 2021; 2(1):218-226.
5. Le TT, **Lim V**, Ibrahim R, Teo MT, Bryant J, Ang B, Su B, Aw TC, Lee CH, Bax J, Cook S, Chin CWL. The remodelling index risk stratifies patients with hypertensive left ventricular hypertrophy. Eur Heart J Cardiovasc Imaging. 2021; 22(6):670-679. JIF: 5.3

Chiong, Edmund

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

Senior Consultant, National University Health System

Senior Consultant, Division of Surgical Oncology, National University Cancer Institute

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*

Adjunct Associate Professor, Duke-NUS Medical School

OncologyVisiting Consultant, Division of Medical Oncology, National Cancer Centre Singapore

Medical Oncolooist, Curie Oncology at Mount Elizabeth Novena Hospital and Farrer Park Hospital, Singapore

Contact: 6436 8197

Email: choo.su.pin@singhealth.com.sg

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 and Program Director, Duke-NUS Medical School

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

Co-Chair, Research and Scholarship Committee, Duke-NUS Medical School

Senior Consultant Surgeon, HPB and Transplant Surgery, Singapore General Hospital and National Cancer Centre Singapore

Senior Clinician Scientist, National Medical Research Council, Singapore

Protocol Chair, Asia-Pacific Hepatocellular Carcinoma (AHCC) Trials Group

Associate Faculty, Senior Group Leader, Genome Institute of Singapore (GIS)

Research Director, Institute of Molecular and Cell Biology (IMCB)

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Website: ResearchGate Profile

Research Summary

Prof Pierce Chow is Senior Consultant Surgeon at the Singapore General Hospital and National Cancer Centre, Singapore. He is concurrently Professor and Program Director at Duke-NUS Medical School. Prof Chow has researched extensively on hepatocellular carcinoma (HCC). In 1997, he co-founded the Asia-Pacific HCC Trials Group and has been the protocol chair of 8 multi-national studies. For improving clinical outcomes with his research on HCC, he was conferred the National Medical Research Council (NMRC) National Outstanding Clinician Scientist Award in 2012. In 2016, Prof Chow was awarded the NMRC Translational-Clinical Research Grant for the National Flagship Program in Liver Cancer and in 2017 he received funding from Biomedical Research Council (BMRC) for the multi-institutional PuRPOSE Program to develop a patient-specific diagnostic and predictive platform to improve treatment of HCC. In 2020, he was awarded by A*STAR to lead a nationwide cohort study to develop diagnostics for early detection of HCC in high-risk patients.

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)
Indora TANUDIN (Class of 2021; Co-mentor)
HOANG To Quyen (Marjorie) (Class of 2023)

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).
7. Allen JCJ, Nault JC, **Zhu G**, **Khor AYK**, Liu J, Lim TKH, Zucman-Rossi J, Chow PKH (2016) The transcriptomic G1–G6 signature of hepatocellular carcinoma in an Asian population: Association of G3 with microvascular invasion. Medicine (Baltimore), 95(47):5263.
8. **Chia CYL**, Tan WLW, Shannon NB, Foo RSY, Chow PKH (2016) Molecular pathways associated with micro-vascular invasion HCC. *J. Clin. Oncol*., 34(4_suppl):249.
9. **Mathew EN**, Nadkarni N, Choo SP, Toh HC, Tai DWM, Goh B, Chung A, Chan CY, Ng D, Goh A, Lo R, Venkatanarasimha N, Gogna A, Too CW, Latiff JBA, Thng CH, Chow PKH (2018) BCLC subclassification and tumour characteristics to provide prognostication of outcomes in an Asian population of locally advanced hepatocellular carcinoma treated using selective internal radiation therapy with Yttrium-90. *J Clin Oncol* 36(suppl 4S) Abstract Submission 443

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Chow, Wan Cheng *MBBS (Spore), MMed (Int Med), MRCP(UK), FAMS*

Adjunct Associate Professor, Duke-NUS Medical School and SingHealth Duke-NUS Global Health Institute

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

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

Chairman, Division of Medicine, Singapore General Hospital

Contact: 6326 6199

Email: chow.wan.cheng@singhealth.com.sg

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)
WENG Chao (Class of 2023)

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

Contact: 6436 8320

Email: ctebal@nccs.com.sg

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)*

Clinical 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

Group Chairman Medical Board, SingHealth

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Email: terrance.chua.s.j@singhealth.com.sg

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

Associate Professor, SingHealth Duke-NUS Global Health Institute

Senior Consultant, Department of Haematology, Singapore General Hospital

Vice Chair, Research, Academic Clinical Program for Medicine, SingHealth-Duke-NUS

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, Office of Translational Medicine Oversight, Singapore General Hospital

Contact: 6321 4855

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Website: -

Research Summary

Dr Chuah has a strong and active interest in clinical and translational research in chronic myeloid leukaemia (CML) and targeted therapy for blood cancer. His research interests include mechanisms of resistance and targeted therapy in CML. In the past eleven years, he has been awarded four national grants and five institutional grants with a total funding of S$2.8 million. He was also awarded the National Medical Research Council Clinician Scientist Award in 2007 and 2010. Dr Chuah is a principal investigator in more than twenty multi-centre clinical trials.

Dr Chuah has authored or co-authored over 60 publications in peer-reviewed scientific journals including Nature, Nature Medicine, Nature Genetics, New England Journal of Medicine, Cancer Cell, PNAS, Blood, Leukemia and Journal of Clinical Oncology. He was a member of the Scientific Review Panel of the NMRC from 2007 to 2018. He was the Co-chair for the National Comprehensive Cancer Network (Asia) Consensus Statement Panel for CML in 2008.

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

Email: thomas.coffman@duke-nus.edu.sg

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*

Professor and Associate Dean for Medical Education, MD Programme Department, Duke-NUS Medical School

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Website: Google Scholar Profile

Research Summary

Educational Research: The overarching goal of my educational research agenda is to better understand how to best apply what we know about learning in the context of medical education; translating efficacious learning strategies identified by the psychological and cognitive neurosciences to the real-world learning environment.

Prehospital and Emergency Medicine Research: My research focuses on 1) improving the provision of resuscitation therapies to appropriate candidates for resuscitation, 2) identifying methods to support the loved-ones of sudden death victims, including investigating the effects of "family witnessed resuscitation" (FWR), and 3) enhancing palliative care opportunities in acute care settings.

Past and Current Duke-NUS MD Research Students

Sanchez Daniel John Gutierrez (Class of 2016)
Wu Jiawei Sean (Class of 2017)
Felicia Danielle RUSTANDY (Class of 2021)
Nurul Ain BINTE REJAP (Class of 2022)
QUAN Jen Wui (Class of 2023)

Student Publications

1. **Wu S**, Farquhar J, Compton S. Why do team-based learning educators use TBL? The Asia Pacific Scholar, 2018, 3(1), 38-41. https://doi.org/10.29060/TAPS.2018-3-1/SC1040

2. **Sanchez D**, Strauman T, Compton S. Impact of Student Perceptions of the Educational Program on Burnout in Medical School. Medical Science Educator, 2019, 29; 1077-87. https://doi.org/10.1007/s40670-019-00812-3

3. Compton S, Sarraf-Yazdi S, **Rustandy F**, Krishna L. Medical Student Preference to Return to the Clinical Setting During the Covid-19 Pandemic. Medical Education, 54: 943-50. 2020. https://doi.org/10.1111/medu.14268

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

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

Senior Consultant, & Tanoto Foundation Professor of Cardiovascular Medicine, Department of Cardiology, National Heart Centre Singapore

Deputy Director (Clinical), SingHealth Duke-NUS Institute of Precision Medicine

Professor of Clinical and Molecular Cardiology, Imperial College

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

Contact: 6601 2584

Email: stuart.cook@duke-nus.edu.sg

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

Programme Director, Clinician - Investigator Development Programme (CIVDP)

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

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

Head & Senior Consultant, Department of Neurology, Singapore General Hospital

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 Siva 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)
LIU, Wan-Yun Sabrina (Class of 2023)

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*

Associate Professor, Duke-NUS Medical School

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

Head, Duke-NUS Lung Centre

Vice Chair, National Medical Ethics Committee

Contact: 6321 4700

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Website: -

Research Summary

Dr Devanand's main research interest is in patient decision-making preferences and end of life issues. He conducts qualitative research that involves in depth and semi-structured interviews with both patients and healthcare providers. His work aims to clarify health literacy, as well as patient's perspectives on their illness, define patient narratives and develop partnership models for clinicians to help patients make medical decisions. The work involves clarifying how illness disrupts both biology and biography.

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)
TU Wen Hui (Class of 2021)

Student Publications

1. **Meng Peng**; Tan Gan Liang; Low Su Ying; Takano Angela; Ng Yuen Li; Anantham Devanand. Fibred confocal fluorescence microscopy in the diagnosis of interstitial lung diseases. Journal of thoracic disease 2016; 8(12):3505-3514

2. **Meng Peng**, Tan GL, Anantham Devanand. Probe-Based Confocal Laser Endomicroscopy of the Lungs. J Pulm Respir Med 2016, 6:5.

3. **Choo Randall**, Anantham Devanand. Role of bronchoalveolar lavage in the management of immunocompromised patients with pulmonary infiltrates. Ann Transl Med 2019;7(3):49.

4. **Choo Randall**, Naser NSH, Nadkarni NV, Anantham Devanand. Utility of bronchoalveolar lavage in the management of immunocompromised patients presenting with lung infiltrates. BMC Pulm Med. 2019 Feb 26;19(1):5.

5. **Jonathan Caleb Quek**, Tao Qiao Li, John Carson Allen, Devanand Anantham. Malignant pleural Effusion Survival Prognostication in an Asian Population. Respirology. 2020 Dec;25(12):1283-1291.

Ding, Yew Yoong *MBBS, FRCP, FAMS, MPH, PhD*

Senior Consultant, Department of Geriatric Medicine and Institute for Geriatrics and Active Ageing, Tan Tock Seng Hospital

Executive Director and Joint Faculty, Geriatric Education and Research Institute

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

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

Contact: 6359 6474

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Website: -

Research Summary

Dr Ding is a geriatrician who conducts clinical and health services research in older adults. His substantive research interests include models of geriatric care, frailty, and geriatric syndromes, while methodological interests are quantitative methods for observational studies, causal inference, program evaluation, and implementation science. He studied public health and research methodology at University of Queensland and London School of Economics. He had health services research fellowships at Bedford VA Center for Health Quality Outcomes & Economic Research in Massachusetts, USA, and Institute of Clinical Evaluative Sciences (ICES) in Toronto, Canada. Currently, Dr Ding's research is largely based in Tan Tock Seng Hospital and Geriatric Education & Research Institute (GERI).

Past and Current Duke-NUS MD Research Students

LEE Jia Qi (Class of 2023)

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

Professor, SingHealth Duke-NUS Global Health Institute

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 commercially 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)
Timothy Twonlee CHUANG (Class of 2021)
Jeselin Putri ANDONO (Class of 2021; Co-mentor)
KOH Ling En (Class of 2021; Co-mentor)
ONG Junyu (Class of 2021; Co-mentor)
Ma. Sophia Graciela Llames REYES (Class of 2023)

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

Chair, Seah Cheng Siang Professorship in Medicine

Deputy Group CEO (Medical and Clinical Services), SingHealth

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

Contact: 6908 8948

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Website: -

Research Summary

1. Research interests: Rheumatology with special interest in SLE and medical education

2. Current project: Clinical Skills in the Digital Age

Past and Current Duke-NUS MD Research Students

Tan Tze Chin (Class of 2011)
Huang Youyi (Class of 2016)

Student Publications

1. **Huang YY**, Xin XH, Sultana R, Thumboo J, Fong KY. Prevalence and Factors Associated with Concomitant Chinese Medicine Use by Rheumatoid Arthritis Patients in A Multi-Ethnic Asian Population. Chinese Journal of Integrative Medicine, 28 Jul 2021, DOI: 10.1007/s11655-021-3494-3 PMID: 34319508

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

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

Chief Executive Officer, Institute of Mental Health

Senior Consultant, Department of Developmental 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)
Shaun TAY Li Jian (Class of 2021)
LEE Yun See Crystal (Class of 2022)

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

Contact: 6516 3678

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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 baumanni*.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Gandhi, Mihir

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

Head of Biostatistics, Singapore Clinical Research Institute

Contact: 65088309

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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)
SIVARAJAN Sivanesh (Class of 2023)

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 and National Cancer Centre Singapore

Director, Solid Organ Transplant, SingHealth Duke-NUS Liver Transplant Centre

Deputy Head, SingHealth Duke-NUS Liver Transplant Centre

Director, Outcomes Research and Database Registry, SingHealth Duke-NUS Surgery Academic Clinical Programme

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

Contact: 6576 7751

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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

Joel CHIN Li Ji (Class of 2023)

Student Publications

NA

Goh, Yeow Tee *MMed (Int Med)*

Clinical Professor, Duke-NUS Medical School

Senior Consultant, Department of Haematology, Singapore General Hospital

Group Director, Research (Research Integrity, Compliance and Ethics), SingHealth

Chairperson, Research Regulatory Compliance Committee (RRCC)

Chairperson, SingHealth Biobank Research Scientific Advisory Committee (SBRSA)

Co-chairperson, Research Ethics and Compliance Council (RECC)

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

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Email: goh.yeow.tee@singhealth.com.sg

Website: -

Research Summary

Prof Goh has always been particularly keen in research and has research interests in haematopoietic stem cell transplantation, immunotherapy, the use of novel agents and supportive therapy in the field of haematology malignancy. He was the Director of Clinical Trials and Research Centre for 10 years, and concurrently the Acting Chairman for 4 years in the Division of Research. He also held Directorship in the Department of Clinical Research, Office of Translational Medicine Oversight (TMO) and Research Quality Management. He is currently leading over 10 ongoing trials as Principal Investigator (PI). As an experienced researcher, Prof Goh has accumulated an extensive research portfolio. He was awarded over 10 research grants as PI or higher (funds in excess of S$14 million) and led over 70 clinical trials as PI; published over 120 peer-reviewed research articles; and presented over 150 papers at conferences. His reputation has led to active engagements as invited speaker, chairperson, advisory board member and steering committee member for regional and international events.

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

2. **Bernard Yap, Lionel See**, Anskar Y H Leung, Fadilah S Abdul Wahid, Hwai Tzeng Cheng, Yeow Tee Goh, Zhentang Lao, Issaragrilsil Surapol, Prolonged Hospitalization due to Adverse Events during Chemo-Mobilization results in failure to proceed with Autologous Stem Cell Transplant (ASCT) – A SECOM Study (Abstract, Oral – O1002). The 19th International Congress of Asia Pacific Bone Marrow Transplant 2015.

3. **Bernard Yap, Lionel See**, Zhentang Lao*, Anskar Y.H Leung, S Fadilah S Abdul Wahid, Issaragrilsil Surapol, Cheng Hwai Tzeng, Yeow Tee Goh. The “HELP” Scoring System to Predict Chemo-mobilization Outcome in Non-Hodgkin Lymphoma Patient Undergoing Autologous Stem Cell Transplant, (Abstract, EBMT16-PH-1064). 42nd Annual Meeting of European Society of Blood and Marrow Transplantation.

Gooley, Joshua J. *PhD*

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

Research Lead on Neuroscience of Learning, NUS Institute for Applied Learning Sciences and Educational Technology

Contact: 6516 7430

Email: joshua.gooley@duke-nus.edu.sg

Website: -

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)
TWAN Chao Kuan, Derek (Class of 2023)

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.

Graves, Nicholas *PhD*

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

Professor, SingHealth Duke-NUS Global Health Institute

Deputy Director, Health Services Research Institute, SingHealth

Contact: 6601 2462

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Website: https://scholar.google.com.au/citations?user=kxz__2EAAAAJ&hl=en

Research Summary

Prof Graves' areas of knowledge include health economics, health services research, decision making and cost-effectiveness. He is interested in projects that show high and low-value care and in the processes around implementing new policies. Other research interests include healthcare associated infection, chronic wounds, non-beneficial treatments at the end of life, health behavior change interventions, screening for infectious and chronic disease, and how research funding is allocated. Prof Graves' major focus is on showing how health services can be improved at low cost, or even improved with cost savings. He enjoys collaborating with clinicians who wish to improve the performance of health services. Prof Graves has received more than $25M in research funding since 2004, mostly from international and national competitive schemes.

Past and Current Duke-NUS MD Research Students

KWEK Yong En, Samuel (Class of 2023)

Student Publications

NA

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

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

Senior Advisor, Academic Appointments and Research Excellence, Office of the Senior Deputy President and Provost

Contact: 6516 3247

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Website: http://www.med.nus.edu.sg/bch/bchbh.htm

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 *MBChB, 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

Director of National Heart Research Institute Singapore (NHRIS), National Heart Centre Singapore

Professor, Cardiovascular Medicine, University College London

Consultant Cardiologist, New Barts Heart Centre

Contact: 6601 5121

Email: derek.hausenloy@duke-nus.edu.sg

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)
Marco LIZWAN (Class of 2023)

Student Publications

NA

Ho, Fu Wah Andrew

Associate Consultant, Department of Emergency Medicine, Singapore General Hospital

Adjunct Research Fellow, Duke-NUS Medical School

Fellow in Pre-hospital Emergency Care, Ministry of Health

Contact: 9852 9424

Email: andrew.ho.f.w@singhealth.com.sg

Website: https://scholar.google.com/citations?user=xpIPIQEAAAAJ&hl=en

Research Summary

Dr Andrew Ho is an academic Emergency Physician in Singapore General Hospital. His clinical and research interests lie in resuscitation, health services and public health. He graduated from National University of Singapore with MBBS in 2013, MMed in 2017 and MPH in Epidemiology & Quantitative Methods in 2021. After completing the SingHealth Emergency Medicine Residency Programme, and the year-long Singapore Chief Residency Programme at the MOHH Healthcare Leadership College, he attained specialist accreditation in 2021.

His research philosophy integrates methods from clinical epidemiology, population health sciences and implementation science to drive outcomes improvement in patients with sudden cardiac arrest and other emergency conditions, and population health.

His portfolio of previous work includes 80 peer-reviewed journal publications, national awards (e.g. National Outstanding Clinician Scientist Resident Award), international awards (e.g. American Heart Association Paul Dudley White International Scholar). Since 2013, he has mentored 21 medical student projects (mostly from YLLSOM), 4 non-medical FYP undergraduate projects and 2 master-level practicum projects, with 100% of these resulting in published (or under submission) manuscripts in reputable scientific journals.

Past and Current Duke-NUS MD Research Students

Jeremy Pong (Class of 2020; Co-Mentor)
Pamela Tay (Class of 2020; Co-Mentor)

Student Publications

1. **Pong JZ**, Ho AFW, Tan TXZ, Zheng H, Pek PP, Sia CH, Hausenloy DJ, Ong MEH. ST-segment elevation myocardial infarction with non-chest pain presentation at the Emergency Department – Insights from the Singapore Myocardial Infarction Registry. Internal and Emergency Medicine. 2019 Sep;14(6):989-997. *Joint first authors.
2. **Jeremy Zhenwen Pong**, Stephanie Fook-Chong, Zhi Xiong Koh, Mas'uud Ibnu Samsudin, Takashi Tagami, Calvin J. Chiew, Ting Hway Wong, Andrew Fu Wah Ho, Marcus Eng Hock Ong, Nan Liu. Combining Heart Rate Variability with Disease Severity Score Variables for Mortality Risk Stratification in Septic Patients Presenting at the Emergency Department. International Journal of Environmental Research and Public Health. 2019;16(10), 1725 [Impact factor 2.145]
3. **Kumar A**, Liu N, Koh ZX, Chiang JJY, Soh Y, Wong TH, Ho AFW, Tagami T, Fook-Chong S, Ong MEH. Development of a heart rate variability and complexity model in predicting the need for life-saving interventions amongst trauma patients. Burns & Trauma. 2019;7:12
4. **Tay PJM**, Ho AFW, Shahidah N, Nadarajan GD. Management of heatstroke using the novel, reusable, Carboncool® suit. Journal of Emergency and Critical Care Medicine. March 2021. Doi: 10.21037/jeccm-20-107
5. Choo, Karen; Ho, Andrew; Hao, Gui; **Tay, Pamela**; Lee, Haur Yueh; Koh, Mariko; Earnest, Arul; Pek, Pin Pin ; Liu, Nan; Chong, Shu Ling; Pang, Junxiong; Ong, Marcus. Relationship between local weather, air pollution and hospital attendances for urticaria in children: time stratified analysis of 12 000 cases. Clinical & Experimental Allergy. 2021. doi: 10.1111/cea.14015.

HOANG, Donny Quan V

Associate Professor, Duke-NUS Medical School

Senior Consultant, Surgical Retina, SNEC

Clinician Scientist, Ocular Imagine, SERI

Adjunct A/Prof. Dept. Ophthalmology, YLL SOM, NUS

Adjunct A/Prof. Dept. Ophthalmology, Columbia University

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Email: donny.hoang@singhealth.com.sg

Website: https://scholar.google.com/citations?user=xpIPIQEAAAAJ&hl=en

Research Summary

At SNEC and Duke-NUS, my work profile is divided between clinical work (seeing patients) and research, with both endeavours mainly focused on extreme short-sightedness, an important blinding condition in Singapore. Although minimal levels of short-sightedness are considered a minor inconvenience, pathologic myopia occurs at extreme levels of lifelong, progressive eye elongation and subsequent eye wall thinning, which allows for localized deformations (called staphyloma), and subsequent vision-threatening changes. My current research focuses on clinical studies employing cutting-edge non-invasive multimodal imaging (MRI, ultrasound, optical coherence tomography) to identify patients at greatest risk of vision loss from short-sightedness. Concurrently, I run laboratory-based studies aimed at discovering novel treatments to stunt short-sightedness and avoid vision-threatening changes, including scleral collagen crosslinking to selectively strengthen areas of the eye wall. These techniques have the potential to benefit millions of highly myopic individuals who are at high-risk of eventual vision loss.

Past and Current Duke-NUS MD Research Students

Isabella Loh (Class of 2023)
Carene Yeo (Class of 2023)

Student Publications

1. Tey KY, Hoang QV, **Loh IQ**, Dan YS, Wong QY, Yu DJG, Yandri VR, Ang M, Cheung GCM, Lee SY, Wong TY; SNEC Retina Group, Chong RS, Wong CW. Multimodal Imaging-Based Phenotyping of a Singaporean Hospital-Based Cohort of High Myopia Patients. Front Med (Lausanne). 2022 Jan 4;8:670229. doi: 10.3389/fmed.2021.670229. PMID: 35059405; PMCID: PMC8764286.

Hu, Jiancheng *PhD*

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

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

Senior Consultant, Department of Anaesthesiology, Singapore General Hospital

Senior Consultant, Department of Cardiothoracic Anaesthesia, National Heart Centre Singapore

Vice Chair, Education, Anaesthesiology and Perioperative Sciences Academic Clinical Programme

Director, Education, Division of Anaesthesiology and Perioperative Medicine, Singapore General Hospital

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Website: https://scholar.google.ca/citations?user=5J2cxkkAAAAJ&hl=en

Research Summary

One of Dr Hwang's many research interest is in the evaluation of long term morbidity and mortality outcomes of patients after abdominal surgery. His work aims to derive and recommend a stratified risk prediction model for patients who undergo abdominal surgery. This will enable better patient counselling and more importantly impact on the provision of infrastructure planning and policies related to peri-operative care.

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

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

Senior Consultant, Department of Haematology, Singapore General Hospital

Head, SingHealth Duke−NUS Cell Therapy Centre

Senior Consultant, SingHealth Duke-NUS Blood Cancer Centre

Senior Consultant, SingHealth Duke-NUS Transplant Centre

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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, Jabed *MD, AM.BD.*

Associate Professor, Duke-NUS Medical School

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

Senior Consultant, Department of Anatomical Pathology, Singapore General Hospital

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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

Jia Wen LU (Class of 2023)

Student Publications

NA

Itahana, Koji *PhD*

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

Adjunct Faculty, National Cancer Centre Singapore

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Research Summary

The main goal of Dr. Itahana's laboratory is to develop new therapeutic strategies against cancer by studying the tumor-suppressive mechanisms of p53, which is mutated in half of all cancers. Using proteomics, metabolomics, gene expression analysis, and CRISPR technology, his group has identified several key molecules involved in the regulation of novel non-canonical tumor-suppressive functions of p53, including epigenetics in ESCs, iPSCs, and HSCs, autophagy, immune checkpoints against cancer, cancer metabolism, antioxidant, and cellular senescence. The third-year medical student will conduct an independent project by choosing one of these proteins and investigating its tumor-suppressive function in vitro and in vivo mouse models. If this study shows promising results, the student will also study their expression levels, mutation status, their relationship to patient prognosis, and therapeutic strategy targeting this novel pathway by collaborating with clinicians at SGH, NCCS, and NUH.

Past and Current Duke-NUS MD Research Students

Kunihiko CHEN (Class of 2021)

Student Publications

NA

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

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

Head and Senior Consultant, Department of Head and Neck Surgery, Singapore General Hospital and National Cancer Centre Singapore

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

Head, Division of Medical Sciences, National Cancer Centre Singapore

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Website: -

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)
WONG Lai Yin, Rachel (Class of 2021; Co-mentor)

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

Professor, SingHealth Duke-NUS Global Health Institute

Contact: 6601 2582

Email: tazeen.jafar@duke-nus.edu.sg

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 comunities 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 helath research agenda. She has published in high impact journals and serves on many editoral 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)
Sun Joon HWANG (Class of 2021)
Vanitha D/O PORHCISALIYAN (Class of 2022)

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

Director, Advanced Bioimaging Centre, SingHealth.

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

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Website: Google Scholar Profile

Research Summary

Synapses are fundamental units of neuronal connectivity in the brain. The Je 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, Alzheimer's disease, and Parkinson's disease.

Selected publications past 5 years:

1. Jo., J. Lin, Y., Tran, H.D., Yu, W., Sun, A.X., Chang, Y.Y., Jung, B.C., Lee, S.J., Saw, T.Y., Xiao, B., Khoo, A.T.T., Yaw, L.P., Xie, J. J., Lokman, H., Ong, W.Y, Lim, G.G.Y., Lim, K.L., Tan, E.K., Ng, H.H., and **Je, H.S.** (2021) Lewy-body Like Inclusions in Human Midbrain Organoid Carrying Glucocerebrosidase and Alpha Synuclein Mutations. ***Annals of Neurology***, in press.
2. Cho, A., Jin, Y., An, Y., Jin, K., Choi, Y.S., Lee, J.S., Kim, J., Choi, W.Y, Koo, D.J., Yu, W., Chang, G.E., Kim, D.Y., Jo, S.H., Kim, J., Kim, S.Y., Kim, Y.G., Kim, J.Y., Choi, N., Cheong, E., Kim, Y.J., **Je, H.S**., Kang, H.C., and Cho, S.W. (2021) Combination of a microfluidic device with brain extracellular matrix promotes structural and functional maturation of human brain organoids. ***Nature Comm.***, In press.
3. Khoo, A.T.T., Kim, P.J., Kim, H.M., and **Je, H.S.** (2020) Neural circuit analysis using a novel intersectional split intein-mediated split-Cre recombinase system. ***Molecular Brain***, 13, 1-10.
4. Sun, A.X., Yuan, Q., Fukuda, M., Yu, W., Yan, H., Lim, G., Nai, M.H., D'Agostino, G.A., Tran, H.D., Itahana, Y., Wang, D., Lokman, H., Itahana, K., Lim, S., Tang, J., Chang, Y.Y., Zhang, M., Cook, S.A., Rackham, O.J.L., Lim, C.T., Tan, E.K., Ng, H.H., Lim, K.L., Jiang, Y.H., and **Je, H.S**. (2019) Potassium channel dysfunction in human neuronal models of Angelman syndrome. ***Science***, 366, 1486-1492. *Previewed by Pamela Hines in the same issue of* ***Science.***
5. Kim, B, Fukuda, M., Lee, J., Su., D., Sanu, S., Silvin, A., Khoo, A.T., Kwon, T., Liu, X., Chi, W., Liu, X., Choi, S., Wan, D., Park, S., Kim, J., Ginhoux, F., **Je, H.S.#**, and Chang, Y.T.# (2019) A novel fluorogenic chemical probe for direct identification and *in vivo* imaging of microglia. ***Angewandte Chemie***, 131, 8056-8060. #: co-corresponding authors. Cover illustration.
6. Tan, S., Xiao, Y., Yin, H.H., Chen, A.I., Soong, T.W., and **Je, H.S.** (2018) Postnatal TrkB ablation in corticolimbic interneurons induces social dominance in male mice. ***PNAS***. 115, E9909-E9915.
7. Husain, N., Yuan, Q., Yen, Y.C., Pletnikova, O., Dong, Q., Worley, P., Bichler, Z., and **Je,H.S.** (2017) TRIAD3/RNF216 mutations associated with Gordon Holmes syndrome lead to synaptic and cognitive impairments via Arc misregulation. ***Aging Cell,*** *16, 281-292*.
8. Jo, J., Xiao, Y., Sun, A.X., Cukuroglu, E., Tran, H.D., Goke, J., Tan, Z. Y., Saw, T. Y., Tan, C.P., Lokman, H., Lee, Y., Kim, D., Ko, H.S., Kim, S.O., Park, J. H., Cho, N.J., Hyde, T.M., Kleinman, J.E., Shin, J.H., Weinberger, D.R., Tan, E.K., **Je, H.S**.# and Ng, H.H.# (2016) Midbrain-like organoids from human pluripotent stem cells contain functional dopaminergic and neuromelanin producing neurons. ***Cell Stem Cell***, 19, 248-257. #: co- corresponding authors. *Previewed by Marton and Paşca in the same issue of* ***Cell Stem Cell.***
9. Sun, A.X., Yuan, Q., Tan, S., Xiao, Y., Wang, D., Khoo, A.T., Sani L., Tran, H.D., Kim, P., Chiew, Y.S., Lee, K.J., Yen, Y.C., Ng, H.H., Lim, B., and **Je, H.S.** (2016) Direct induction and functional maturation of forebrain GABAergic neurons from human pluripotent stem cells. ***Cell Reports,*** 16, 1942-1953.

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*

Clinical 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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Website: -

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*

Clinical Associate Professor, Duke-NUS Medical School

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

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

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Website: SGH Webpage

Research Summary

Dr Koh's key clinical and research interests include Difficult- to-treat Asthma, identification and treatment of phenotypes in Severe Asthma. She established the multidisciplinary Severe Asthma Clinic in 2011 and has >500 severe asthma patients in the Severe Asthma Registry who are being followed longitudinally. She conducts clinical research with a focus on severe asthma phenotypes (clinical and inflammatory), clinical trials in new therapeutics, (eg. Biologics) and health services research. She is part of the SingHealth-Duke-GlaxoSmithKline COPD and Asthma Real-World Evidence (SDG-CARE) team looking at real-world evidence in research and clinical care. A centerpiece of the collaboration was to develop an integrated real-time integrated real-world data (RWD) database to inform healthcare decision making and research. In addition, she has several collaborations with local academics from various institutions and universities (Duke-NUS, NUS, LKC, A*STAR) as well as academics overseas (eg. International Severe Asthma Registry). She has obtained competitive grants of over S$3 million as PI, has authored over 80 papers, 1 book chapter and is in the Editorial Board of several journals.

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)
ONG Shao En, Adriel (Class of 2021)
Gerard Nicholas LIM Yue (Class of 2022)
ANG Wei Xiang (Class of 2023; Co-mentor)
LEE Wen Di (Class of 2023; Co-mentor)

Student Publications

1. Yii, Anthony; Tay, Tunn Ren; Puah, Ser Hon; Lim, Hui Fang; Li, Andrew; **Lau, Priscilla**; Tan, Raeann; Neo, Lay Ping; Chung, Kian Fan; Koh, Mariko. Blood eosinophil count correlates with severity of respiratory failure in life-threatening asthma and predicts risk of subsequent exacerbations. Clinical and Experimental Allergy 2019. Doi: 10.1111/cea.13465

2. **Alvin Shao Qiang Ong**, Aik Hau Tan, Devanand Anantham, Kiran Sharma, Shera Tan, Therese Sophie Lapperre, Kah Yee Tham, Rehena Sultana, Mariko Siyue Koh. Impact of simulation training on performance and outcomes of endobronchial ultrasound-guided transbronchial needle aspiration performed by trainees in a tertiary academic hospital. Journal of Thoracic Disease 2018 Sep;10(9):5621-5635. doi: 0.21037/jtd.2018.08.76

3. **Karina R Soenjoyo**, Nivedita Nadkarni, Mariko Siyue Koh. Comparison of exacerbation phenotypes amongst severe asthma patients. Allergy & Asthma Proc 2020 Jul 1:41(4): e67-e79.

4. **Adriel Shao En Ong**; Adrian Kwok Wai Chan, Rehena Sultana; Mariko Siyue Koh. Impact of Psychological Impairment on Quality of Life and Work Impairment in Severe Asthma. J Asthma 2020 Aug 24:1-10.

5. Qian Qian Fan, **Adriel Ong Shao En**, Mariko S Koh*, Kinjal Doshi* (*co-last author). The mediating role of trust in physician and self-efficacy in understanding medication adherence in severe asthma. Respir Med 2021 Nov 2, 190: 106673

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

Clinical Professor, Duke-NUS Medical School

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

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

Ku, Chee Wai *BSc (Hons), MD, MRCOG (UK), MMed (Singapore)*

Adjunct Research Fellow, Duke-NUS Medical School

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

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Website: -

Research Summary

My current research interests include early pregnancy complications, such as threatened miscarriage, and we have established and implemented a serum progesterone cutoff to predict the risk of miscarriage. I am currently working on establishing a multi-omics platform, including genetics, cytokines, metabolites, and immune profiling of women with threatened miscarriage, alongside an ongoing audit and review of the outcomes of women who were managed with this novel triaging protocol over the last five years. In addition, I am a Co-Investigator of Healthy Early Life Moments in Singapore (HELMS), an ongoing single-arm trial with the overall goal to improve the metabolic and mental health of overweight and obese women who are trying to conceive, in a bid to improve fertility, pregnancy and child outcomes, with a mobile health lifestyle intervention. The HELMS cohort will be deeply phenotyped, in a similar fashion to the GUSTO and S-PRESTO cohorts, with measurements for anthropometry, metabolic, mental health, physical activity, sleep, sedentary behaviour, pregnancy outcomes, infant feeding and growth, and more.

Past and Current Duke-NUS MD Research Students

Clara Eng Sing Yee (Class of 2024; Mentor)
Christina Salendu Erwin (Class of 2023; Co-Mentor)

Student Publications

1. Chee Wai Ku, Shu Hui Leow, Lay See Ong, **Christina Erwin**, Isabella Ong, Xiang Wen Ng, Jacinth JX Tan, Fabian Yap, Jerry Kok Yen Chan, See Ling Loy. Development of a lifestyle intervention program for overweight or obese preconception, pregnant and postnatal women: a qualitative study. ***Sci Rep (2022) 12:2511***. **IF 5.134**

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

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

Senior Consultant, Alexandra Hospital

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

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Website: ResearchGate Profile

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

Head of Service & Senior Consultant, Department of Neurology, National Neuroscience Institute

Senior Consultant, Neuroscience, Sengkang General Hospital

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)
Mark Tan Min Jian (Class of 2017)
Jonathan Wu (Class of 2019)
VOON Siew Lian (Class of 2020; Co-mentor)
XIAO Xiao (Class of 2022; Co-mentor)

Student Publications

NA

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

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

Professor, SingHealth Duke-NUS Global Health Institute

Senior Consultant, Department of Cardiology, National Heart Centre Singapore

Director of Women's Heart Health, National Heart Centre Singapore

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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)
WOO Ting Zhen, Cheryl (Class of 2021)

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

Contact: 6576 7382

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Website: https://scholar.google.com.sg/citations?hl=en&user=mKTclE8AAAAJ

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)
HUANG Qin Rachel (Class of 2023; Co-mentor)

Student Publications

1. Rangabashyam M, **Koh SQ**, Sultana R, Tan NC, Iyer NG, Soo KC, Fenwick E, Lamoureux E, Tan HK. Factors associated with returning to work in head and neck cancer survivors in Singapore: A preliminary exploratory mixed-methods approach study. Head Neck. 2021 May;43(5):1451-1464. doi: 10.1002/hed.26644. Epub 2021 Feb 18. PMID: 33599355

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

Back to top

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

Adjunct Associate Professor, Duke-NUS Medical School

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

Director, Allergy Clinic, Singapore General Hospital

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

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Website: -

Research Summary

Dr Lee has an interest in severe cutaneous adverse drug reactions, allergies, 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 autoimmune blistering conditions, atopic dermatitis and food allergies.

Past and Current Duke-NUS MD Research Students

Chua Shunjie (Class of 2015)
He Huiling (Class of 2018)
Chan Chong En, Linus (Class of 2019)
ZHANG Fuquan (Class of 2020)
Hyun Joo HA (Judy) (Class of 2023)

Student Publications

He HL, MJA Koh, HY Lee, SB Ang. Pilot study of a customized nanotextile wet garment treatment on moderate and severe atopic dermatitis: a randomized clinical trial. Pediatric Dermatol 2019

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

Associate Professor, Duke-NUS Medical School

Associate Professor, SingHealth Duke-NUS Global Health Institute

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

Contact: 6394 1778

Email: lee.jan.hau@singhealth.com.sg

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)
Stephanie Senna (Class of 2019)
Ng Herng Ngee, Raphael (Class of 2019; Co-mentor)
YAO Wen Jie, Dominic (Class of 2020)
WEE Poh Hui (Class of 2021)
Priscilla Sindo NG May Hsien (Class of 2022)
TOH Ting, Samantha (Class of 2022)
FONG Hui Min, Michelle (Class of 2023; Co-mentor)
Natasha Nabila Binte MUHAMAD NASIR (Class of 2023; Co-mentor)
Michelle KO Shi Min (Class of 2023)
RAVICHANDRAN Divyapoorani (Class of 2023; Co-mentor)

Student Publications

NA

Lee, Ser Yee *MBBS, MMed(Surgery), MSc, FAMS, FRCS (Ed)*

Adjunct Associate Professor, Duke-NUS Medical School

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

Senior Consultant and Hepatopancreatobiliary(HPB), Liver Transplantation & General Surgeon, Surgical Associates, Mount Elizabeth Medical Centre

Contact: -

Email: drlee@surgicalassociates.sg

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)
Gerard Michael HENG Yi Tong (Class of 2021; Co-mentor)

Student Publications

NA

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

Adjunct Associate Professor, Duke-NUS Medical School

Head & Senior Consultant, Surgical Retina Department, Singapore National Eye Centre

Senior Consultant, Cataract & Comprehensive Ophthalmology Department, Singapore National Eye Centre

Clinical Director, Retina 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

Contact: 6516 7461

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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 & Head, Department of Paediatrics, Yong Loo Lin School of Medicine, NUS

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

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

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Email: lee_yung_seng@nus.edu.sg

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)*

Clinical Associate Professor, Duke-NUS Medical School

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

Contact: 6394 1133

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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)
Quek Jia Ling Jovina (Class of 2016; Co-Mentor)
Cassandra Ho Xin Yi (Class of 2017; Co-Mentor)
LIM Ying Yan (Class of 2020)

Student Publications

NA

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

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 of Singapore

Senior Principal 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

President, Endocrine and Metabolic Society of Singapore (EMSS)

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)
LOH Xinpeng (Class of 2023)

Student Publications

Enlin Li, Yen PM, Dietrich JW, Leow MK. Profiling Retrospective Thyroid Data in Complete Thyroidectomy Patients to Investigate the Hypothalamus-Pituitary-Thyroid Axis Set Point (PREDICT-IT). *Journal of Endocrinological Investigation* 2020 (IF = 3.166).

Meng F, **Li Enlin**, Yen PM, Leow MK. Hyperthyroidism in the Personalized Medicine Era - the Rise of Mathematical Optimisation. *Journal of the Royal Society Interface* 2019; 16(155): 20190083 (IF = 3.355).

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*

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

Professor, Department of Statistics & Data Science, National University of Singapore

Contact: 6516 8932

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Website: Google Scholar Profile

Research Summary

Prof Li conducts methodology development research in various fields in biostatistics, including diagnostic medicine, survival analysis and longitudinal data analysis. Prof 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. Prof 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 posttranslational 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*

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

Deputy Director, Research (Basic Science and Translational Research), National Neuroscience Institute

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

Contact: 6357 7611

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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*

Clinical Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Orthopaedic Surgery, Singapore General Hospital

Visiting Associate Professor, Nanyang Technological University, School of Mechanical and Aerospace Engineering

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Website: -

Research Summary

- With the acquisition of the new robot arm several knee biomechanics projects can be resumed: (1) Predicting multi-ligament knee injury and knee dislocation – a cadaver ligament strain model, (2) Role of ALL and PLC in controlling rotatory stability of the knee in a cadaver model
- Clinical knee kinematics – mapping out arc of rotation and quantifying instability in sports injuries
- Long term outcomes of shoulder labral and cuff repairs from our depository of 2000 shoulder cases, studying patient outcome scores, MCID and Threshold scores, predicting outcomes and factors ensuring successful surgery
- The Acromio-Clavicular Joint is often injured in sports: understanding its 3-dimensional stability, creating novel techniques and devices to retore stability

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)
Favian NG Ding Jie (Class of 2022)
SOH Wee Siang Bryan (Class of 2022)

Student Publications

1. **Punn Kuhataparuks**, Jia-Min Sheng, Andy Yew, Siaw Meng Chou, Soon Huat Tan, Denny Lie. Simultaneous Strain Measurements of Single-Row Repair and Double-Row Repair in Comparison to Intact Rotator Cuff Tendons. July 2021, Journal of Shoulder and Elbow Surgery 30(7): e458. DOI: 10.1016/j.jse.2021.03.102

2. **Guanqi Hang**, Andy Khye Soon Yew, Siaw Meng Chou, Yoke Rung Wong, Shian Chao Tay, Denny Tijauw Tjoen Lie. Biomechanical comparison of vertical suture techniques for repairing radial meniscus tear. Oct 2020, Journal of Experimental Orthopaedics (2020) https://doi.org/10.1186/s40634-020-00296-w

Lim, Chwee Ming *MBBS (Singapore), MRCS (Edin), MMed (Singapore)*

Associate Professor, Duke-NUS Medical School

Senior Consultant, Department of Otolaryngology – Head and Neck Surgery, Singapore General Hospital and National Cancer Centre Singapore

Director, Department of Clinical Translational Research, Singapore General Hospital

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Website: ResearchGate Profile

Research Summary

Dr Lim is a clinician scientist at the Department of Otolaryngology-Head and Neck Surgery Singapore General Hospital. His main research focus is on cancer immunology and immunotherapy in head and neck cancer. He heads 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 100 papers, 7 book chapters and holds 5 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)
CHER Boon Meng (Class of 2021)
NGUYEN Thi Mai Nhi (Class of 2023)

Student Publications

1. **Xiong J,** Krishnaswamy G, Raynor S, Loh KS, Kwa AL, Lim CM. Risk of swallowing-related chest infections in patients with nasopharyngeal carcinoma treated with definitive intensity-modulated radiotherapy. Head Neck. 2016 Apr; 38 Suppl 1:E1660-5. https://doi.org/10.1002/hed.24296. Impact factor: 3.376

2. Liou AK, Soon G, Tan L, Peng Y, **Cher BM**, Goh BC, Wang S, Lim CM**.** Elevated IL18 levels in Nasopharyngeal carcinoma induced PD-1 expression on NK cells in TILS leading to poor prognosis. Oral Oncology. 2020 Mar 6;104:104616:NA. https://doi.org/10.1016/j.oraloncology.2020.104616. Impact factor: 3.73

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 (Research), SingHealth Duke-NUS Lung Centre

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*

President's Chair Professor in Translational Neuroscience and Vice Dean (Research), Lee Kong Chian School of Medicine, Nanyang Technological University

Research Director for Biomedical and Life Sciences, Nanyang Technological University

Coordinating Director of NTU Integrated Medical, Biological and Environmental Sciences (NIMBELS), Nanyang Technological University

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

Contact: -

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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*

Clinical 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 Core Faculty Member, Pathology Residency Programme, SingHealth

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

Contact: 6326 5382

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

Research Summary

Prof Tony Lim's research interests revolve around 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 pancreatobilary cancers and lung cancer.

He is the Head of section of Translational Pathology centre a molecular diagnostic laboratory within the Molecular Pathology department. He is also the Clinical director of Personalized OMIC Lattice for Advanced Research and Improving Stratification (POLARIS)@GIS, Genomc institute of Singapore part of AStar 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)
CHEUNG Chun Chau Lawrence (Class of 2022)

Student Publications

NA

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

Professor and Senior Associate Dean, MD Programme (Clinical Lead), Duke-NUS Medical School

Deputy Group Chief Executive Officer (Research & Education), SingHealth

Deputy Medical Director (Clinical) and Senior Consultant, Division 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

Liow, Ming Han Lincoln *MBBS, DWD(CAW), MRCSED, MMED(ORTHO), FRCSED(ORTH), FAMS*

Clinical Assistant Professor, Duke-NUS Medical School

Consultant, Adult Reconstruction Service, Department of Orthopaedic Surgery, SGH

Physician Faculty, SingHealth Orthopaedic Surgery Residency Programme

Contact: 63262365

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Website: https://www.duke-nus.edu.sg/directory/detail/Liow-Ming-Han-Lincoln

Research Summary

Dr Liow is an academic arthroplasty surgeon and has published >100 peer reviewed articles. His work has been recognized at the international level, being nominated for the New Investigator Recognition Award (NIRA) during the 2016 Orthopaedic Research Society Annual Meeting, awarded the Jacques Duparc Award at the 2019 European Federation of National Associations of Orthopaedics and Traumatology (EFORT) and Top 100 posters of American Association of Hip and Knee Surgeons (AAHKS) Annual Meeting 2020. He serves as an editorial board member on several top-ranked Orthopaedic journals and is an invited peer-review for the British Medical Journal and Journal of Arthroplasty. He shares his knowledge on hip and knee replacement surgery as an invited speaker at international conference and webinars. As a clinical physician faculty, he is active in education of orthopaedic surgery residents.

Past and Current Duke-NUS MD Research Students

FOO Yong Xiang Wayne (Class of 2023)

Student Publications

1. **Foo WYX**, Liow MHL, Chen JY, Tay DKJ, Lo NN, Yeo SJ. All-polyethylene unicompartmental knee arthroplasty is associated with increased risks of poorer knee society knee score and lower satisfaction in obese patients. Arch Orthop Trauma Surg. 2022 Jan 30. doi: 10.1007/s00402-021-04325-w. Epub ahead of print. PMID: 35094135.

Liu, Jin *PhD*

Assistant Professor, Centre for Quantitative Medicine, 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*

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

Associate Professor, SingHealth Duke-NUS Global Health Institute

Contact: -

Email: liu.nan@duke-nus.edu.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)
Marcus Lee Aik Beng (Class of 2015; Co-mentor)
Mas'Uud Ibnu Samsudin (Class of 2018)
Stella Wu Xinzi (Class of 2019)
Jeremy PONG Zhenwen (Class of 2020)
ANG Yukai (Class of 2021)
HU, Zhongxun (Class of 2022)
LEOW Su Li (Class of 2022; Co-mentor)
Johannes Nathaniel LIEW Min Hui (Class of 2022)
TAN Kuo Ren (Class of 2022; Co-mentor)
CHEN, Xinru (Class of 2023)

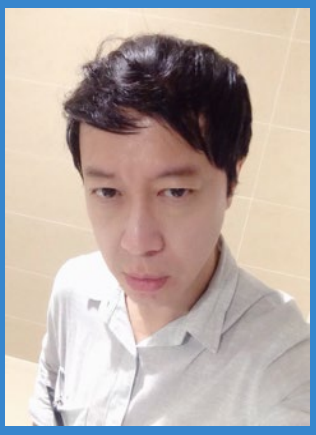
Student Publications

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

Deputy Medical Director & Senior Consultant and Head, Department of Neurology, National Neuroscience Institute

Senior Consultant, Department of Neurology, Singapore General Hospital

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

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Email: lo.yew.long@singhealth.com.sg

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 (Paeds Surgery)*

Assistant Professor, Duke-NUS Medical School and SingHealth Duke-NUS Global Health Institute

Deputy Chairman, Division of Surgery, KK Women's and Children's Hospital

Senior Consultant, Children's Surgery Centre and Paediatric Brain and Solid Tumour Programme, KK Women's and Children's Hospital

Deputy Director, KK Research Centre, KK Women's and Children's Hospital

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

Clinical Teacher, Content Expert, Clinical Practice Facilitator, Lee Kong Chian School of Medicine, Nanyang Technological University

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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

WONG Lai Yin, Rachel (Class of 2021)
Vanessa CHONG Wen-Li (Class of 2022)
LOKE Wen Qing, Benjamin (Class of 2023)

Student Publications

NA

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

Senior Consultant, 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*

Head, Centre of Psychosocial Support, Singapore Red Cross Academy

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

Patient Education and Support Advisor, Ostomy Association of Singapore

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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.

Examples of past research projects include ‘Effects of a psychoeducation intervention on improving outcomes of patients with colorectal cancer: A pilot randomised controlled trial’ and ‘Postoperative experiences of patients after colorectal cancer surgery: A focus group study’. Current ongoing project includes ‘Acupuncture for bowel dysfunction in patients after colorectal cancer surgery: a pilot 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

Gabriel FIGUEROA TORRES (Class of 2021)

Student Publications

NA

Lok, Shee Mei *PhD*

Provost's Chair Professor, PhD, Programme in Emerging Infectious Diseases, Duke-NUS Medical School

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Website: ResearchGate Profile

Research Summary

Professor Lok is a recipient for the prestigious National Research Foundation (NRF) fellowship (2009) and NRF Investigatorship (2016). The research in her laboratory focuses on understanding the pathology of flavivirus and alphavirus infections and the mechanism of neutralization by antibodies and other molecules so as to facilitate the development of suitable vaccines and therapeutics. Her lab uses a combination of molecular, immunological, biochemical and structural techniques (x ray crystallography and cryoEM image reconstruction techniques) are used to achieve these aims.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Low, Hsiu Ling Andrea

Clinical Associate 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*

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 the Singapore General Hospital and a Professor in the Programme in Emerging Infectious Diseases at Duke-NUS Medical School. Concurrently, she is the Deputy Medical and Scientific Director of the SingHealth Investigation Medicine Unit. Her research interest is to develop pathways for rapid bench-to-bedside translation of vaccines and therapeutics against acute viral diseases. Her approach is to combine novel trial design with state-of-the-art molecular investigations to generate deep data that enrich first-in-human and early phase clinical trials. Towards this goal, she co-founded and co-directs the Viral Research and Experimental Medicine Centre, SingHealth Duke-NUS Academic Medical Centre (ViREMiCS) to develop relevant molecular assays into ISO-accredited tests to support the translation of new vaccines and therapeutics into licensed products. This approach has been used to evaluate both small molecules as well as therapeutic antibodies against flaviviral diseases, such as dengue, Zika and yellow fever. More recently, she has expanded on this experimental medicine approach to rapidly develop a deeper understanding Covid-19 and the host response to SARS-CoV-2 infection, the knowledge of which was used to evaluate investigator-initiated and industry-sponsored therapeutic strategies and vaccine candidates against Covid-19. These efforts, apart from contributing to knowledge, have also increased Singapore's profile as a preferred site for early phase, proof-of-concept clinical trials for acute viral diseases. She has authored and co-authored more than 100 publications in peer-reviewed journals and has more than 5000 citations with H-index of 35 and i10-index of 59. She has been awarded the Singapore National Medical Research Council Clinician-Scientist Award in 2016 and 2019. For her contribution, she has also received a series of research awards from SingHealth/Duke-NUS since 2014.

Past and Current Duke-NUS MD Research Students

Tan Boon Hian (Class of 2014; Co-mentor)
Toh Liying (Class of 2014; Co-mentor)
Wang Xiaohui (Class of 2016)
Rene Gatsinga (Class of 2018; Co-mentor)
YIP Lijing, Samantha (Class of 2020)
Chia Wen Chong (Class of 2022; 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.

2. Low JG, **Gatsinga R**, Vasudevan SG, Sampath A. Dengue Antiviral Development: A Continuing Journey. Adv Exp Med Biol 2018; N.A.:319-332

3. Ong EZ, Kalimuddin S, **Chia WC**, Ooi SH, Koh CWT, Tan HC, Zhang SL,Low JG, Ooi EE, Chan KR. Temporal dynamics of the host molecular responses underlying severe COVID-19 progression and disease resolution. EBioMedicine 2021; 65:103262-N.A.

Low, Kin Huat *PhD*

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

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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)*

Clinical Associate Professor, Duke-NUS Medical School

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

Consultant, Family Medicine and Continuing Care, Singapore General Hospital

Head and Consultant, Outram Community Hospital

Director, Population Health and Integrated Care Office, Singapore General Hospital

Chief Medical Informatics Officer, SingHealth Office of Regional Health

Co-Director, Centre for Population Health Research and Implementation, SingHealth

Contact: 6326 5872

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

Research Summary

Assoc Prof 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 the currently the co-Director of the Centre for Population Health Research and Implementation in SingHealth. He 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, Assoc Prof Low had authored more than 80 publications, and published his work on readmission prediction, diabetes and integrated care delivery models in local and international peer reviewed journals and conferences.

Past and Current Duke-NUS MD Research Students

Michael Yan Shi (Class of 2019)
NG Choon Wee, Shawn (Class of 2020)
SENG Jun Jie, Benjamin (Class of 2021)
PEH Kai Qi, Elizabeth (Class of 2022; Co-mentor)
TAN Kuo Ren (Class of 2022)
Priscilla WEE Jia Ling (Class of 2022; Co-mentor)
MO Jiahui (Class of 2023)
NG Jun Hao (Class of 2023)
YAP Weiliang (Class of 2023)

Student Publications

1. Low LL, **Yan S**, Kwan YH, Tan CS, Thumboo J. Assessing the validity of a data driven segmentation approach: A 4 year longitudinal study of healthcare utilization and mortality. PloS one. 2018 Apr 5;13(4):e0195243.

2. **Seng JJ**, Kwan YH, Lee VS, Tan CS, Zainudin SB, Thumboo J, Low LL. Differential health care use, diabetes-related complications, and mortality among five unique classes of patients with type 2 diabetes in Singapore: a latent class analysis of 71,125 patients. Diabetes care. 2020 May 1;43(5):1048-56.

3. **Tan KR, Seng JJ,** Kwan YH, Chen YJ, Zainudin SB, Loh DH, Liu N, Low LL. Evaluation of Machine Learning Methods Developed for Prediction of Diabetes Complications: A Systematic Review. Journal of diabetes science and technology. 2021 Nov 3:19322968211056917.

4. **Wee PJ**, Kwan YH, Loh DH, Phang JK, Puar TH, Østbye T, Thumboo J, Yoon S, Low LL. Measurement Properties of Patient-Reported Outcome Measures for Diabetes: Systematic Review. Journal of medical Internet research. 2021 Aug 13;23(8):e25002.

5. **Peh KQ**, Kwan YH, Goh H, Ramchandani H, Phang JK, Lim ZY, Loh DH, Østbye T, Blalock DV, Yoon S, Bosworth HB. An Adaptable Framework for Factors Contributing to Medication Adherence: Results from a Systematic Review of 102 Conceptual Frameworks. Journal of general internal medicine. 2021 Mar 3:1-2.

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

Adjunct Associate Professor, Duke-NUS Medical School

Head & Senior Consultant, Department of Orthopaedic Surgery, KK Women's and Children's Hospital

Vice Chair (Education), SingHealth Duke-NUS Musculoskeletal Sciences (MSKSC) Academic Clinical Programme

Associate Programme Director, SingHealth Residency Programme (Orthopaedic Surgery)

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

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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 is 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

Jeselin Putri ANDONO (Class of 2021)
KOH Ling En (Class of 2021)
SEE Jia Wen, Faith (Class of 2022)
LEE Han Liang, Jonathan (Class of 2023)

Student Publications

NA

Malhotra, Rahul *MBBS, MD, MPH*

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

Head of Research, Centre for Ageing Research and Education, Duke-NUS Medical School

Assistant Professor, SingHealth Duke-NUS Global Health Institute

Contact: 6516 6721

Email: rahul.malhotra@duke-nus.edu.sg

Website: Google Scholar Profile

Research Summary

Dr. Malhotra's research focuses on the vulnerability – i.e., increased risk of adverse outcomes – associated with ageing. Within this area, his research agenda is to develop an evidence base that enables understanding, measurement, and alleviation of vulnerability, resulting from physical, psychological, social and health service factors, among older adults in Singapore and other Asian countries. He conducts primary data collection, using quantitative and qualitative methods, as well as secondary data analysis of population-based datasets of older adults from Singapore and other Asian countries, for his research. He has authored or co-authored over 170 peer-reviewed papers in the medical and public health literature.

Past and Current Duke-NUS MD Research Students

Carmen Lim Zhiruo (Class of 2016; Co-mentor)
Jeffrey Siow Yong Ming (Class of 2017)
I Gusti Ngurah Prawira Suartha Oka (Class of 2017; Co-mentor)
Guo Ying (Class of 2018; Co-mentor)
Sandra Lynn Jaya-Bodestyne (Class of 2018; Co-mentor)
Qian Lian (Class of 2019)
Fung Foon Yin (Class of 2019; Co-mentor)
CHUA Ing Loon, Sean (Class of 2020; Co-mentor)
Lim Muhammad Haikel Asyraf (Class of 2020; Co-mentor)
Sharon Hanna SUNNY (Class of 2021; Co-mentor)
PHUA Yan Lin, June (Class of 2023)
TAN Li Ting (Class of 2023; Co-mentor)

Student Publications

1. Chan YH, **Lim Z-R C**, Bautista D, Malhotra R, Østbye T. The wellbeing of caregivers of technology dependent children. *Global Pediatr Health*. 2019; 6. https://doi.org/10.1177/2333794X18823000
2. **Fung FY**, Koh YLE, Malhotra R, Østbye T, Lee PY, Shariff Ghazali S, Tan NC. Prevalence of and factors associated with sarcopenia among multi-ethnic ambulatory older Asians with type 2 diabetes mellitus in a primary care setting. *BMC Geriatr*. 2019;19(1):122. doi: https://doi.org/10.1186/s12877-019-1137-8
3. **Chua SIL**, Tan NC, Wong WT, Allen JC Jr, Quah JHM, Malhotra R, Østbye T. Virtual Reality for Screening of Cognitive Function in Older Persons: Comparative Study. *J Med Internet Res*. 2019; 21(8): e14821 doi: 10.2196/14821
4. **Lim HA**, Chua TE, Malhotra R, Allen JC, Teo I, Chern B, Tan KH, Chen H. Identifying trajectories of antenatal depression in women and their associations with gestational age and neonatal anthropometry: A prospective cohort study. *Gen Hosp Psychiatry*. 2019; 61: 26-33. doi: https://doi.org/10.1016/j.genhosppsych.2019.09.001
5. **Lim HA**, Chua TE, Malhotra R, Allen JC, Teo I, Chern B, Tan KH, Chen H. Trajectories of antenatal maternal psychological stress and their association with gestational age and neonatal anthropometry: A prospective cohort study of multi-ethnic Asian women in an urban setting. *Asian J Psychiatry*. 2020; 48: 101923. https://doi.org/10.1016/j.ajp.2019.101923
6. **Sunny SH**, Malhotra R, Ang SB, Lim CSD, Tan YSA, Soh TMB, Ho XY, Martyn G, Tsang LPM, Lock SHS, Yee KS, Ting JLY, Kayshini d/o Vijakumar, Tan NC. Facilitators and barriers to post-partum diabetes screening among mothers with a history of gestational diabetes mellitus – a qualitative study from Singapore. *Front Endocrinol*. 2020; 11: 602. https://doi.org/10.3389/fendo.2020.00602
7. **Jaya-Bodestyne SL**, Lee LH, Tan LK, Tan KH, Østbye T, Malhotra R, Allen J, Tan SSX, Tan MSY, Ng LCK, Yong Y, Tan TC. Risk factors for pregnancy-associated venous thromboembolism in Singapore. *J Perinat Med*. 2021; 49(2):153-158. https://doi.org/10.1515/jpm-2020-0298
8. **Lian Q**, Jafar HT, Allen JC, Ma S, Malhotra R. Association of systolic and diastolic blood pressure with all-cause mortality among community-dwelling older adults: A prospective observational study. *J Aging Health*. Published online 23 November 2021. https://doi.org/10.1177/08982643211055245
9. **Phua J**, Visaria A, Østbye T, Malhotra R. Association of vision and hearing impairments with quality of life: Mediation by psychosocial factors. *Geriatr Gerontol Int*. Accepted November 2021.

Matchar, David B. *MD, FACP, FAHA*

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

Professor, SingHealth Duke-NUS Global Health Institute

Professor, Medicine, Duke University

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Website: Google Scholar Profile

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)
LIM Xin Ya (Class of 2021)
ANG Wei Xiang (Class of 2023)
LEE Wen Di (Class of 2023)

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

Deputy Medical Director (Research), Singapore National Eye Centre

Professor, SingHealth Duke-NUS Global Health Institute

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

Contact: 6322 7478

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Website: Google Scholar Profile

Research Summary

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.

Milea, Dan *MD, PhD (Paris)*

Professor, Duke-NUS Medical School

Head, Visual Neuroscience Group, Singapore Eye Research Institute (SERI)

Senior Consultant, Neuro-Ophthalmology, Singapore National Eye Centre (SNEC)

Professor of Ophthalmology, Angers University Hospital, France

Honorary Professor, Neuro-Ophthalmology, Copenhagen University, Denmark

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Research Summary

I am a clinician scientist, currently Head of the Visual Neuroscience Group at the Singapore Eye Research Institute (SERI) and a Senior Consultant in the Neuro-Ophthalmology Department of the Singapore National Eye Centre (SNEC). As a practicing clinician scientist in Neuro-ophthalmology, I have strong research interests in applied Artificial Intelligence methods applied to Neuro-Ophthalmology, among other research areas in Visual Neuroscience and Clinical Neuro-Ophthalmology. For these purposes, I was awarded several competitive multimillion research grants in Europe and in Singapore. To illustrate my interest and achievements in the area of Optic Nerve and AI, the international Consortium that I created in 2018 has published its results in 2020, becoming the first AI study ever accepted by The New England Journal of Medicine[1].

Main Research Interests:

- Artificial Intelligence in Neuro-Ophthalmology
- Chromatic pupillometry in ocular and brain conditions
- Genetics of optic nerve diseases. Hereditary optic neuropathies
- Non-image forming visual function and circadian rhythms
- Visual Neurosciences and Clinical Neuro-Ophthalmology

[1]Milea D et al. Artificial Intelligence to Detect Papilledema from Ocular Fundus Images. New Engl J Medicine, 2020.

Past and Current Duke-NUS MD Research Students

CHAN Ebenezer (Class of 2023)

Student Publications

1. **CHAN E**, NAJJAR RP, TANG Z, MILEA D. Artificial Intelligence for Retinal Image Quality Assessment of Optic Nerve Head Disorders. Asia-Pacific Journal of Ophthalmology (Phila), 2021 May-Jun;10(3):282-288.

Narasimhalu, Kaavya *M.D, PhD*

Adjunct Assistant Professor, Duke-NUS Medical School

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

TAN Hong Kuang (Class of 2022)

Student Publications

NA

Neo, Hui Shan Shirlyn *MBBS, MRCP(UK), MMed(Int Med)*

Clinical Assistant Professor, Duke-NUS Medical School

Consultant, Division of Supportive and Palliative Care, National Cancer Centre Singapore

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

Clinician Physician Faculty Member, Singhealth Internal Medicine Residency Programme

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

Research Summary

My over-arching interest is to improve the provision of person centered care and there in the quality of life of patients (and caregivers of patients) who have serious illnesses. Specifically, I hope to be able to drive the development, evaluation and implementation of locally appropriate patient and caregiver centered outcome measures; including exploring the use of novel means of administration so in to reduce respondent burden. I also hope to design, pilot, evaluate and implement feasible acceptable and effective models of care for patients and caregivers. Lastly, I also believe in the importance of empowering patients and caregivers and clinicians to have effective conversations with each other, in order to ensure person centered, goal concordant care is delivered. I was recently awarded the MOH NMRC HSR New Investigator Grant – to pilot a culturally adapted nurse led health coaching program for heart failure patients and their caregivers

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

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

Senior 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)*

Professor, Duke-NUS Medical School

Chief Executive Officer. Changi General Hospital

Senior Consultant, Department of Neurosurgery, National Neuroscience Institute

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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)
Chan Yuan-Lang Brian (Class of 2017)
WU Yilong (Class of 2020)
Onittah Lola NAIR (Class of 2021)
KOK Chun Yen (Class of 2023; Co-mentor)

Student Publications

NA

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

Clinical Associate Professor, Duke-NUS Medical School

Assistant Dean, Professional Development and Support, Duke-NUS Medical School

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

Senior Consultant, Neurology Service, KK Women's and Children's Hospital

Senior Consultant, Department of Rehabilitation Medicine, Singapore General Hospital and Sengkang General Hospital

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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Website: https://scholar.google.com.sg/citations?user=9k0tA6wAAAAJ&hl=en

Research Summary

Dr Ng does clinical research widely on Rehabilitation, Medicine, Aging and Disability. His areas of work include:

1. Disability Epidemiology and Population Health including Life-Space sciences, Frailty, Sarcopenia and Rehabilitation Outcomes in Stroke, Traumatic Brain Injury, Minimally Responsive States, Aging and General Internal Medicine,
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; with the use of rehabilitation modalities including Non-Invasive Brain Stimulation and Music Therapy.
4. Rehabilitation and Medical Technology specifically Objective Assessments of Impairments, Rehabilitation Robotics, and Virtual Reality.

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)
Nicodemus Oey (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)
YEE Xianyang, Sherman (Class of 2021)
WU Zhiyi (Class of 2022)
LEE Jia Qi (Class of 2023; 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, **Oey NE, Choo M**, Ju H, Chan WY, Kok S, Ge Y, Van Dongen AM, Ng YS. Combining levodopa and virtual reality-based therapy for rehabilitation of the upper limb after acute stroke: pilot study Part II. *Singapore Med J*. 2017 Oct;58(10):610-617. PubMed PMID: 27311739.
3. **Oey NE**, Samuel GS, Lim JKW, VanDongen AM, Ng YS, Zhou J. Whole Brain White Matter Microstructure and Upper Limb Function: Longitudinal Changes in Fractional Anisotropy and Axial Diffusivity in Post-Stroke Patients. *J Cent Nerv Syst Dis*. 2019 Jul 30;11:1179573519863428.
4. **Lim YJ**, Ng YS, Sultana R, Tay EL, Mah SM, Chan CHN, Latib AB, Abu-Bakar HM, Ho JCY, Kwek THH, Tay L. Frailty Assessment in Community-Dwelling Older Adults: A Comparison of 3 Diagnostic Instruments. *J Nutr Health Aging*. 2020;24(6):582-590. PMID: 32510110
5. **Yee XS**, Ng YS, Allen JC, Latib A, Tay EL, Abu Bakar HM, Ho CYJ, Koh WCC, Kwek HHT, Tay L. Performance on sit-to-stand tests in relation to measures of functional fitness and sarcopenia diagnosis in community-dwelling older adults. *Eur Rev Aging Phys Act*. 2021 Jan 8;18(1):1. PubMed PMID: 33419399.
6. **Lee JQ**, Ding YY, Latib A, Tay L, Ng YS. INtrinsic Capacity and its RElAtionship With Life-SpacE Mobility (INCREASE): A Cross-Sectional Study of Community-Dwelling Older Adults in Singapore. *BMJ Open* (In Press)

Ngeow, Joanne *MBBS, MRCP, MPH*

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

Senior Consultant, Division of Medical Oncology, National Cancer Centre Singapore

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

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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

Nongpiur, Monisha Esther *MD, PhD*

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

Junior Principal Investigator, Singapore Eye Research Institute

Clinician Scientist, Singapore Eye Research Institute

Clinician (Ophthalmology), Singapore National Eye Centre

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Research Summary

Dr Monisha Nongpiur is a Clinician Scientist and balance both clinical and research related work in glaucoma at the Singapore Eye Research Institute and Singapore National Eye Centre. Her main research interest is in primary angle closure glaucoma (PACG) with a focus on characterizing the underlying mechanisms and also to develop risk assessment models for the condition. Her research on angle closure integrates clinical, imaging and genetics. She is a PI of several national grants and has co-authored >100 peer-reviewed papers with several first author publications in the foremost ophthalmic journal, Ophthalmology (IF 8+), and 6 book chapters. She is a member of the Associate Advisory Board (AAB) of the World Glaucoma Association (WGA), the WGA Education committee and the WGA Communication and Technology committee.

Past and Current Duke-NUS MD Research Students

WEI, Xin (Class of 2014; Co-mentor)

Student Publications

1. **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

2. 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 primary angle-closure glaucoma susceptibility loci and the ocular biometric parameters anterior chamber depth and axial length. Invest Ophthalmol Vis Sci. 2013 Aug 27;54(8):5824-8

Ong, Biauw Chi *MBBS, MMed (Anaes), FAMS (Anaes)*

Associate Professor and College Master, Duke-NUS Medical School

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

Group Chief Risk Officer, SingHealth

Senior Consultant, Department of Anaesthesiology, Sengkang General Hospital

Senior Consultant, Department of Cardiothoracic Anaesthesia, National Heart Centre 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)
Cassandra CHAN (Class of 2023)

Student Publications

NA

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

Assistant Professor, Duke-NUS Medical School

Consultant, Department of Sarcoma, Peritoneal and Rare Tumours (SPRinT), Singapore General Hospital and National Cancer Centre Singapore

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

Clinical Teacher, Content Expert, Clinical Practice Facilitator, Lee Kong Chian School of Medicine, Nanyang Technological University

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Research Summary

Dr Ong is a surgeon-scientist with a research interest in cancer metastasis, tumour microenvironment, as well as biomarkers and novel therapeutic strategies for peritoneal disease and rare cancers. He is particularly interested in deciphering tumour biology by understanding underlying molecular mechanisms. He received the NMRC Transition Award in 2017 and IRG in 2021, and has published >50 manuscripts including many in Top 10%/20% journals. Dr Ong has mentored >20 students of which many have presented in conferences and published in reputable journals. Accepted students will function as a team member within SPRinT and the laboratory. They can expect to join clinical tutorials and work with the clinical and scientific team to achieve the best outcome in research and clinical development. SPRinT and the laboratory have mentored 4 Duke-NUS students in the last 2 years. 3 published in Top20% journals (ASO, EJSO and Cancers) and 1 is currently under review.

Past and Current Duke-NUS MD Research Students

Lek Sze Min (Class of 2016)
Li Ke (Class of 2016; Co-mentor)
Koh Kay Nguan, Kelvin (Class of 2016; Co-mentor)
Nicholas Shannon (Class of 2017; Co-mentor)
Sasinthiran S/O THIAGARAJAN (Class of 2021)
LI, Zhenyue Maggie (Class of 2022)
Louis WONG Choon Kit (Class of 2022; Co-mentor)
ONG Xing-Yi, Sarah (Class of 2023)

Student Publications

1. 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 2017, **8**(45): 79556–79566. *Equal Contribution
2. **Shannon N. B.***, Tan J. W.-S.*, Tan H. L.*, **Wang W.**, … Ong C.-A. J.**, Teo M. C. C.** A set of molecular markers predicts chemosensitivity to Mitomycin-C following cytoreductive surgery and hyperthermic intraperitoneal chemotherapy for colorectal peritoneal metastasis. Sci Rep 2019, **9**: 10572 *Equal Contribution, **Co-corresponding authors
3. Ong C.-A. J., Tan Q. X., Lim H. J., **Shannon N. B.**, Lim W. K., Hendrikson J., Ng W. H., Tan J. W,-S., **Koh K. K. N.**, *et al.* An optimized protocol harnessing laser capture microdissection on matched primary and metastatic colorectal tumours. Sci Rep 2020, **10**: 682
4. **Lek S. M.**, **Li K.**, Tan Q. X., **Shannon N. B.**, Ng W. H., Hendrikson J., Tan J. W.-S., Lim H. J., Chen Y., **Koh K. K. N.**, … Ong C.-A. J. Pairing a prognostic target with potential therapeutic strategy for head and neck cancer. Oral Oncol 2020, **111**: 105035
5. **Thiagarajan S.***, Tan J. W.-S.*, Zhou S., … Ong C.-A. J. Postoperative inflammatory marker surveillance in colorectal peritoneal carcinomatosis. Ann Surg Oncol 2021, **28**(11): 6625-6635 *Equal Contribution
6. Tan J. W.-S., Thiagarajan S., Zhou S., … Ong C.-A. J. ASO Author Reflections: Postoperative inflammatory markers as a surveillance tool in colorectal peritoneal carcinomatosis. Ann Surg Oncol 2021, **28**(11): 6636-6637
7. **Shannon N. B.***, Tan Q. X.*, Tan J. W.-S., … Ong C.-A. J. Gene expression changes associated with dedifferentiation in liposarcoma predict overall survival. Cancers (Basel) 2021, **13**(12): 3049 *Equal Contribution
8. **Shannon N. B.***, Tan L. L. Y.*, Tan Q. X., … Ong C.-A. J. A machine learning approach to identify predictive molecular markers for cisplatin chemosensitivity following surgical resection in ovarian cancer. Sci Rep 2021, **11**: 16829 *Equal Contribution
9. **Ong X.-Y. S.**, Sultana R., Tan J. W.-S., … Ong C.-A. J. The role of total parenteral nutrition in patients with peritoneal carcinomatosis: a systematic review and meta-analysis. Cancers (Basel) 2021, **13**(16): 1456
10. **Wong L. C. K.***, **Li Z.***, Qiao F., … Ong C.-A. J. Cytoreducetive surgery (CRS) with hyperthermic intraperitoneal chemotherapy (HIPEC) in peritoneal sarcomatosis – A systematic review and meta-analysis. Eur J Surg Oncol 2021, S0748-7983(21)00761-7. *Equal Contribution

Ong, Choon Kiat *PhD*

Associate Professor, Cancer and Stem Cell Biology, Duke-NUS Medical SchoolConsultant,

Principal Investigator, Lymphoma Genomics Translational Research Laboratory, National Cancer Centre Singapore

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Website:https://www.nccs.com.sg/research-innovation/research-labs/lymphoma-genomic-translational-lab

Research Summary

Dr. Ong has led the genomic research in various cancers prevalent in Asia including lymphoma, cholangiocarcinoma and fibroepithelial tumors. His team currently focuses on improving the treatment outcome of lymphoma patients through genomic and therapeutic research. Some of his research interests include (i) identifying biomarkers of response to immune checkpoint therapy, (ii) overcoming drug resistance and (iii) devising novel therapeutic strategies. Besides cancer genomics and bioinformatics, the team also develops patient-derived xenograft (PDX) and transgenic mouse models for lymphoma, which are highly relevant for novel therapeutic studies. His team also focuses on bring discovery from the bench to clinical applications which will benefit the patients. Dr. Ong has authored more than 70 internationally peer-reviewed publications, 4 reviews and 1 book chapter. He has garner more than SGD$6M research funding and is one of the lead PIs for the SYMPHONY Large Collaborative Grant (NMRC).

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

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

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

Professor, SingHealth Duke-NUS Global Health Institute

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, SGH

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

Senior Consultant, Hospital Service Division, Ministry of Health

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Website: Google Scholar Profile

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

Annisa Dewi Utami Rakun (Class of 2018)
Lim Yen Yin, Jasmine (Class of 2019)
Jeremy PONG Zhenwen (Class of 2020; Co-mentor)
TAY Jia Min, Pamela (Class of 2020)
WONG Xiang Yi (Class of 2021)
TEO Jing Min (Class of 2021)
ANG Yukai (Class of 2021; Co-mentor)
WOO Ting Zhen, Cheryl (Class of 2021; Co-mentor)
Nurul Ain BINTE REJAP (Class of 2022; Co-mentor)
HU, Zhongxun (Class of 2022; Co-mentor)
LEOW Su Li (Class of 2022)
Johannes Nathaniel LIEW (Class of 2022; Co-mentor)
LIM Mei Qiu Cheryl (Class of 2022)
CHEN, Xinru (Class of 2023; Co-mentor)
CHONG Ning Hui Cherrie (Class of 2023)
HOE Pei Shan (Class of 2023; Co-mentor)
HUANG, Hai-En Henry (Class of 2023)

Student Publications

1. 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.
2. 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
3. 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.
4. 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.
5. 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.
6. **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.
7. **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

Contact: 6516 7763

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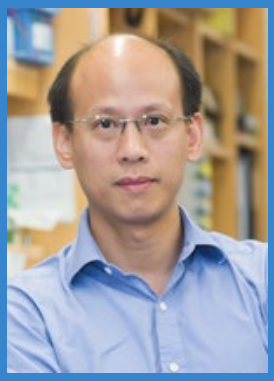

Research Summary

Our work is directed toward understanding mechanisms of drug resistance in human cancers including leukaemia, gliomas, and breast cancer. We have projects in all of these cancers, which span the breadth of basic discovery, mechanistic studies, and direct translation to the clinic. We collaborate extensively with full-time clinicians, computational biologists and basic scientists. Current projects including: 1. Understanding response heterogeneity in patients with CML; 2. Enhancing standard therapy of malignant gliomas; 3. Overcoming drug resistance in HER2+ and triple negative breast cancer.

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

Professor, SingHealth Duke-NUS Global Health Institute

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

Co-director, Viral Research and Experimental Medicine Centre @SingHealth Duke-NUS (ViREMiCS)

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Website: -

Research Summary

The global emergence of epidemic dengue and other *Aedes*-borne flaviviruses is fuelled in part by an incomplete understanding of the the molecular underpinnings of disease pathogenesis and immunity. My laboratory aims to address these critical gaps in knowledge at the interface between clinical epidemiology, virology and immunology. We combine molecular virology and host response investigations with epidemiological investigations and experimental medicine studies, including clinical trials. Specifically, we are interested in elucidating: (1) the mechanisms that govern the clinical and epidemiological fitness of flaviviruses; (2) the immune responses necessary for flaviviral immunity and infection enhancement; and (3) the molecular correlates of clinical outcome of flaviviral infection. By developing deeper understanding in these areas, we hope to contribute to the development of effective vaccines and treatment against dengue and other emerging viruses.

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)
CHIA Wen Chong (Class of 2023)

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.
5. Chan KR, **Wang X**, Saron WAA, Gan ES, Tan HC, Mok DZL, Zhang SL, Lee YH, Liang C, Wijaya L, Ghosh S, Cheung YB, Tannenbaum SR, Abraham SN, St John AL, Low JGH, Ooi EE. Cross-reactive antibodies enhance live attenuated virus infection for increased immunogenicity. Nat Microbiol. 2016;1(12):16164.
6. Sun B, Sundstrom KB, **Chew JJ**, Bist P, Gan ES, Tan HC, Goh KC, Chawla T, Tan CK, Ooi EE. Dengue virus activates cGAS through the release of mitochondrial DNA. Sci Rep. 2017;7(1):3594.

Ooi, Yaw Shin *PhD*

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

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Research Summary

Yaw Shin has a long-established interest in discovering cellular factors (i.e., host dependency factors and restrictions factors) that determine susceptibility and permissivity to virus infections. Host dependency factors are keys hijacked by viruses to penetrate cellular barriers and rewire host cells for promoting viral protein translation, genome replication, assembly, exit, and spread. In contrast, viruses must evade antiviral innate immunity to avoid tolls during the infection process, especially by antagonizing host restriction factors. To unbiasedly uncover host factors critical for virus infection and pathogenesis, Yaw Shin lab leverages the awesome power of functional genomics, such as genome-scale CRISPR editing, which has continuously driven the discovery of new knowledge about many emerging and re-merging viruses. These discoveries have shed light on the underlying molecular mechanisms of viral infections and diseases, which are crucial for innovating vaccine designs and antiviral strategies. Hitherto, his team's focus is centered on mosquito-borne RNA viruses and human respiratory RNA viruses – all pose serious threats to global public health.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Østbye, Truls *MD, MPH, PhD, FFPH (UK)*

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

Professor, SingHealth Duke-NUS Global Health Institute

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

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Website: Google Scholar Profile

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)
I Gusti Ngurah Prawira Suartha Oka (Class of 2017)
Jeffrey Siow Yong Ming (Class of 2017; Co-mentor)
Guo Ying (Class of 2017; Co-mentor)
Sandra Lynn Jaya (Class of 2018; Co-mentor)
Shi Qi Zhu (Class of 2018)
Fung Foon Yin (Class of 2019; Co-mentor)
CHUA Ing Loon, Sean (Class of 2020)
ZHANG Xiaoxuan (Class of 2020; Co-mentor)
KEONG Si Ying, Julienne (Class of 2021)
Nwe Nwe Linn OO (Class of 2021)
LOW Zhen Luan (Class of 2021; Co-mentor)
Tultul DAS (Class of 2023)
PHUA Yan Lin, June (Class of 2023; Co-mentor)
TAN Li Ting (Class of 2023)

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. **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]
7. **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.
8. **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

Assistant Professor, SingHealth Duke-NUS Global Health Institute

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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)
Teresa CHEN (Class of 2023; Co-mentor)

Student Publications

NA

Peres, Marco Aurelio de Anselmo *BDS, MPH, PhD*

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

Research Director, National Dental Centre Singapore

Senior Principal Investigator, National Dental Research Institute, National Dental Care Centre Singapore

Adjunct Professor, University of Adelaide, Australia

Visiting Professor, Griffith University, Australia

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Research Summary

Prof Peres's research areas of interest include health services research, global oral health, data linkage, oral health surveillance, the assessment of the effectiveness of programes, and polices to reduce oral diseases, use of fluorides, inequalities in oral health, life course epidemiology and the relationship between oral health and general health. Prof. has been involved in several population-based cohort studies in Brazil, Australia and Singapore. He has published three books, 17 book chapters and almost 300 peer reviewed papers.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

Pervaiz, Shazib *MBBS, PhD*

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

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Website: ResearchGate Profile

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

Puar, Hai Kiat Troy *MBBS, MRCP (UK), MCI (NUS YLLSOM)*

Adjunct Assistant Professor, Duke-NUS Medical School

Senior 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 dis-ease, 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 New Investigator award, he led a multi-centre trial, including all re-structured hospitals in Singapore, using 11C-metomidate PET/CT imaging to identify patients with surgically-curable primary aldosteronism. He has since been awarded a follow-on National TA grant to extend and lead this study in Singapore. 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

CHAN Hui Bin, Yvonne (Class of 2022)
TAN Yen Kheng (Class of 2022)
Shaun FONES Hong Xuan (Class of 2023)
NGUYEN Thi Bich Van (Class of 2023)

Student Publications

1. **Yen Kheng Tan**, Yu Heng Kwan, David Choon Liang Teo, Marieke Velema, Jaap Deinum, Pei Ting Tan, Meifen Zhang, Joan Joo Ching Khoo, Wann Jia Loh, Linsey Gani, Thomas F J King, Eberta Jun Hui Tan, Shui Boon Soh, Vanessa Shu Chuan Au, Tunn Lin Tay, Lily Mae Quevedo Dacay, Keng Sin Ng, Kang Min Wong, Andrew Siang Yih Wong, Foo Cheong Ng, Tar Choon Aw, **Yvonne Hui Bin Chan**, Khim Leng Tong, Sheldon Shao Guang Lee, Siang Chew Chai, Troy Hai Kiat Puar. Improvement in quality of life and psychological symptoms after treatment for primary aldosteronism: Asian Cohort Study. Endocr Connect. 2021 Jul 26;10(8):834-844. doi: 10.1530/EC-21-0125.

2. **Yvonne H B Chan**, Lih Ming Loh, Roger S Foo, Wann Jia Loh, Dawn S T Lim, Meifen Zhang, Rehena Sultana, **Yen Kheng Tan**, Keng Sin Ng, Donovan Tay, Du Soon Swee, Vanessa Au, Tunn Lin Tay, Joan Khoo, Ling Zhu, Lynette Lee, Sarah Y Tan, Peng Chin Kek, Troy H Puar. Re-evaluating absent clinical success after adrenalectomy in unilateral primary aldosteronism. Surgery. 2021 Nov;170(5):1389-1396. doi: 10.1016/j.surg.2021.05.038. Epub 2021 Jun 25.

Quah, Stella R. *PhD, MSc*

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

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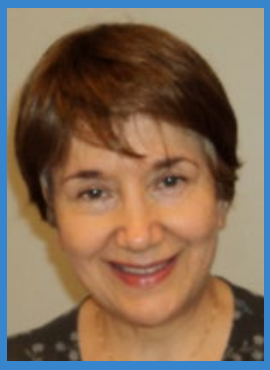

Research Summary

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

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

Clinical Professor, Duke-NUS Medical School

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

Adjunct Associate Professor of Paediatrics, Lee Kong Chian (LKC) School of Medicine, Nanyang Technological University

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Website: -

Research Summary

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.

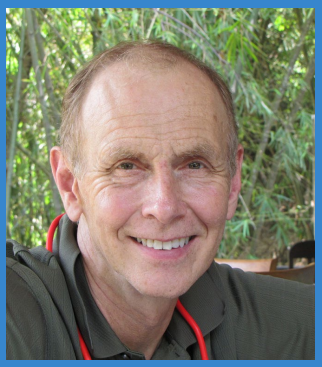
Past and Current Duke-NUS MD Research Students

Shruthi Suryaprakash (Class of 2016)
Ian Wang Huang (Class of 2017)

Student Publications

NA

Rozen, Steve *PhD*



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

Associate Dean, Research Informatics, Duke-NUS Medical School

Professor, SingHealth Duke-NUS Global Health Institute

Associate Professor Track V, Psychiatry and Behavioral Sciences, Duke University Medical Center

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Research Summary

Research areas: Cancer genomics, mutational signatures, bioinformatics, machine learning.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

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

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

Clinician Scientist, Singapore Eye Research Institute

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

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Research Summary

Dr. Charu's current research focuses on the epidemiology of diabetic retinopathy (DR) and diabetic kidney disease (DKD), role of novel biomarkers such as metabolites and risk prediction using traditional as well as machine learning models. Currently, she is developing a deep learning algorithm to detect chronic kidney disease using retinal images and also evaluating machine learning models to predict the risk of DR and DKD using multi-dimensional data. She has published ~257 peer reviewed papers (47 as first-author; 44 as senior-author; Google Scholar H-index=53). Her research work has been published in leading international journals including Lancet Diabetes & Endocrinology, Lancet Digital Health, Diabetologia, Journal of Clinical Endocrinology and Metabolism, European Journal of Epidemiology and Kidney International. She has mentored/co-mentored several Research Fellows, Clinicians, Residents and medical students on research projects. 22 of her mentees (both local and overseas) have published research articles as first-author 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 carious 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

Saffari, Seyed Ehsan *PhD*

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

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Research Summary

Dr Saffari's research interests fall into two areas: neuroscience and public health. He has been working with National Neuroscience Institute for the last few years, in different research areas such as dementia, Alzheimer, Parkinson, depression and biomarkers of cognition outcomes. He has co-mentored some MD and PhD students whose projects were in the neuroscience area, and has been Co-I of a few grant proposals whose main PI was NNI affiliated. The other area of his research is in health outcomes in emergency department (ED). His primary appointment is with HSSR at Duke-NUS and he is involved in several projects at HSSR. He has been co-mentor/quantitative mentor for several MD/PhD students and research fellows at HSSR. He is primarily interested in ED health outcomes such as inpatient mortality, ED waiting time and inpatient length of stay. His statistical research interest is in machine learning techniques which need statistical and computational background.

Past and Current Duke-NUS MD Research Students

FONG Hui Min Michelle (Class of 2023; Co-mentor)

Student Publications

YZ Ong, SE Saffari, PH Tang. Prospective randomised controlled trial on the effect of videos on the cooperativeness of children undergoing MRI and their requirement for general anaesthesia. Clinical Radiology, 2018; 73 (10):909. e15-909. e24

S Yan, EKM Wuan, ALH Peh, ATS Tay, SCW Ho, SE Saffari, DCL Teo. Impact of Experience-Based, Longitudinal Psychiatry Training on Family Medicine Residents' Attitudes Toward Depression and Psychiatry in Singapore: a Prospective Study. Academic Psychiatry, 2019; 43 (1): 6-12

ALH Peh, **MS Yan**, DCL Teo, EKM Wuan, ATS Tay, SCW Ho, SE Saffari. The impact of a novel psychiatry training program on family medicine residents' attitudes towards psychiatry. EUROPEAN PSYCHIATRY, 2019; 56: S548-S549

WXT Goh, S Leong, CW Too, LTE Cheng, SE Saffari, et al. Catheter-Directed Computed Tomography Hepatic Angiography for Yttrium-90 Selective Internal Radiotherapy of Hepatocellular Carcinoma Reduces Prophylactic Embolization of Hepatocellular Carcinoma Reduces Prophylactic Embolization of Extrahepatic Vessels. Cardiovascular and interventional radiology, 2020; 43 (3): 478-487

ALH Peh, **MS Yan**, DCL Teo, EKM Wuan, ATS Tay, SCW Ho, SE Saffari. The impact of a novel psychiatry training program on family medicine residents' attitudes towards psychiatry. EUROPEAN PSYCHIATRY, 2019; 56: S548-S549

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

SERI Professor of Ophthalmology Research, Program in Neuroscience and Behavioral 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.

1. SEED-HM: This project aims to determine the 10-year changes in PM and its effects on visual function and quality of life in adults with HM, offering a new means of characterising disease phenotypes in PM, and detailed evaluations of impacts on quality of life.

2. SCORM: This longitudinal cohort study aims to investigate the pattern of refractive error changes and its relationship with the risk factors over a 20-year period. It will help to predict children who have a higher risk of developing HM.

3. Aier high myopia cohort study: This is a prospective longitudinal cohort study of adults with HM in the Aier Hospital clinics in central China, aiming to evaluate the characteristics, prevalence and risk factors for PM, and its impact on quality of life, depression and social connections.

Past and Current Duke-NUS MD Research Students

Zhang Bei (Class of 2018)
ONG Shuyi, Andrea (Class of 2021)

Student Publications

NA

Schmetterer, Leopold *MSc, PhD*

Professor, Ophthalmology and Visual Sciences Academic Clinical Program, Duke-NUS Medical School

SNEC/SERI Professor in Ophthalmic Engineering & Technology, Nanyang Technological University

Director, SERI-NTU Advanced Ocular Engineering (STANCE) Program, Singapore Eye Research Institute and Nanyang Technological University

Scientific Director, Singapore Eye Research Institute

Professor and Head, Ocular Imaging Research Group, Singapore Eye Research Institute

Professor (Honorary), Department of Ophthalmology, Lee Kong Chian School of Medicine, Nanyang Technological University

Visiting Professor at Institute of Molecular and Clinical Ophthalmology, Basel, Switzerland

Professorship, Institute of Medical Physics, Medical University of Vienna, Austria

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Email: leopold.schmetterer@seri.com.sg

Website: -

Research Summary

I am an international expert in the areas of ocular and functional imaging with excellent sub-expertise in optical coherence tomography (OCT). I am involved in translational clinical research eye studies, particularly in retina and neurodegenerative diseases. I have published more than 420 publications in international peer reviewed journals and my current H-Index on Google Scholar is 77. I have been invited for more than 200 lectures including more than 22 keynote lectures, and has been awarded SGD 21,429,880.25 in research grant funding in Singapore since 2016. I am a member of the editorial boards of *the Progress in Retinal and Eye Research*, the *Scientific Reports*, the *Acta Ophthalmologica, the Journal of Ocular Pharmacology and Therapeutics, the Current Eye Research* and five other journals, as well as ad-hoc reviewers for more than 40 journals.

Past and Current Duke-NUS MD Research Students

NA

Student Publications

NA

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

Professor, Duke-NUS Medical School

Chief Executive Officer, KK Women's and Children's Hospital

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

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

Adjunct Professor, Engineering Design & Innovation Centre, National University of Singapore

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Website: https://scholar.google.com.sg/citations?user=2CjZ9DgAAAAJ&hl=en&oi=ao

Research Summary

The principal area of Alex Sia's research specialization is in the individualization of pain chronic and labour pain management. His research focuses 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. He has filed three patent applications in this area. The other area of his research is in the maintenance of haemodynamic stability in the perioperative period by exploring the contributions of genetic. He is also involved in research into the pharmacogenomics of pain, particularly in relation to the use of opioids.

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)
ZHANG Junyi (Class of 2021)
YEAM Cheng Teng (Class of 2021; Co-mentor)
ENG Zhiqing (Class of 2022; Co-mentor)
LIM Chu Hsien (Class of 2022)
T Agarthesh (Class of 2023; Co-mentor)

Student Publications

1. 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 June;27(4):277-84
2. Leong WL, Sng BL, **Zhang Q**, Han HLR, Sultana R, Sia ATH. A case series of vital signs-controlled, patient-assisted intravenous analgesia (VPIA) using remifentanil for labour and delivery. Anaesthesia 2017 Jul;72(7): 845-852.
3. Sng BL, **Ching YY**, Han NR, Ithnin FB, Sultana R, Assam PN, Sia ATH. Incidence and association factors for the development of chronic post-hysterectomy pain at 4- and 6- month follow-up: a prospective cohort study. J Pain Res. 2018 Mar 27;11:629 -636
4. Sng BL, **Du W**, Lee MX, Ithnin F, Mathur D, Leong WL, Sultana R, Han NR, Sia ATH. Comparison of double intravenous vasopressor automated system using nexfin versus manual vasopressor bolus administration for maintenance of haemodynamic stability during spinal anaesthesia for caesarean delivery: a randomized double-blind controlled trial. Eur J Anaesthesiol 2018 May;35(5):390 - 397
5. **Tan DJA**, Sultana R, Hand NLR, Sia ATH, Sng BL. Investigating determinants for patient satisfaction in women receiving epidural analgesia for labour pain: a retrospective cohort study. BMC Anesthesiol 2018 May 9;18(1):50
6. Chan JJI, **Gan YY**, Dabas R, Han NR, Sultana R, Sia ATH, Sng BL. Evaluation of association factors for labour episodic pain during epidural analgesia. J Pain Res 2019 Feb 15;12:679-687
7. JJI Chan, **CT Yeam**, HM Kee, CW Tan, R Sultana, ATH Sia, Sng BL. The use of pre-operative virtual reality to reduce anxiety in women undergoing gynaecological surgeries: a prospective cohort study. BMC Anaesthesiology 2020 Oct 9, 20(1):261
8. CW Tan, S Ozdemir, D Baid, S Rehena, **ZZY Tan**, ATH Sia , E Finkelstein, BL Sng. Patients' Preferences and Trade-Off During Labour Epidural Analgesia: A Discrete Choice Experiment. J Clin Anesth. 2020 Jun 19;66:109919.
9. BL Sng, **DJA Tan**, CW Tan, NLR Han, R Sultana, ATH Sia. A preliminary assessment of vital-signs-integrated patient-assisted intravenous opioid analgesia (VPIA) for postsurgical pain. BMC Anesthesiol. 2020 Jun 8;20(1):145.
10. JJI Chan, CW Tan, **CT Yeam**, R Sultana, ATH Sia, AS Habib, BL Sng. Risk Factors Associated with Development of Acute and Sub-Acute Post-Cesarean Pain: A Prospective Cohort Study. J of Pain Research 2020:13 2317 – 2328
11. Tan HS, Liu N, Sultana R, Han NR, Tan CW, **Zhang J,** Sia ATH, Sng BL. Prediction of breakthrough pain during labour neuraxial analgesia: comparison of machine learning and multivariable regression approaches. Int J Obstet Anesth. 2020 Aug 25:S0959-289X(20)30115-1.

Silver, David L. *PhD*

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

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

Lead (Research), SingHealth Duke-NUS Global Health Institute (SDGHI)

Co-director, Infectious Diseases Research Institute (IDRI), SingHealth Duke-NUS Academic Medical Centre

Faculty Member, Integrative Sciences and Engineering Programme, NUS Graduate School

Associate Research Professor, Duke Global Health Institute, Duke University, Durham, NC, United States

Member, NIAID/NIH Center of Excellence for Influenza Research and Response, St Jude Children's Research Hospital, Memphis, TN, USA

Contact: 6601 1109

Email: gavin.smith@duke-nus.edu.sg

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), MMed (Anaes), FANZCA (Anaes), FFPMANZCA, MCI, FAMS*

Associate Professor, Duke-NUS Medical School

Vice Chair (Research), SingHealth Duke-NUS Anaesthesiology and Perioperative Sciences (ANAES) Academic Clinical Programme

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

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Website: https://researchgate.net/profile/Ban_Sng

Research Summary

Dr Sng Ban Leong is the Head and Senior Consultant at the Department of Women's Anaesthesia, KK Women's and Children's Hospital. He is an Associate Professor at Duke-NUS Medical School and also a Clinician-Scientist Mentor and Core Faculty in the SingHealth Anaesthesiology Residency Programme. He received the National Medical Research Council (NMRC) Clinical Trials Grant, Transition Award, Clinician Scientist Award, NHIC I2D and NHIC I2I grants. He completed the Masters in Clinical Investigation. 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

Gan Yuan Ying (Class of 2018; Co-mentor)
Sng Dawei, David (Class of 2018)
Tan Jian'an, Daryl (Class of 2018; Co-mentor)
Wang Yijun (Class of 2019)
Tan Ze Yan (Class of 2019; Co-mentor)
CHIA Xintian (Class of 2020)
GOH Zhaohan (Class of 2020; Co-mentor)
TAN Chin Chuen (Class of 2020; Co-mentor)
YEAM Cheng Teng (Class of 2021)
ZHANG Junyi (Class of 2021; Co-mentor)
ENG Zhiqing (Class of 2022)
LIM Chu Hsien (Class of 2022; Co-mentor)
Teresa CHEN (Class of 2023)
QI, Yueyue (Class of 2023)
T Agarthesh (Class of 2023)

Student Publications

1. Sng BL, SN Nah, R Dabas, CSP Ong, **XT Chia**, R Sultana, D Mathur. Oxygen monitoring and management during transfer of high risk postoperative patients: a clinical audit. Trends in Anaes and Crit Care 2020 Feb vol 3
2. MJ Lim, HS Tan, **JY Zhang**, CW Tan, SY Li, WY Hao, R Sultana, Sng BL. Effects of obesity on laryngeal mask airway use in general anaesthesia for Caesarean delivery. Trends in Anaes and Crit Care. 2020 Feb Vol 30,
3. BL Sng, **DJA Tan**, CW Tan, NLR Han, R Sultana, ATH Sia. A preliminary assessment of vital-signs-integrated patient-assisted intravenous opioid analgesia (VPIA) for postsurgical pain. BMC Anesthesiol. 2020 Jun 8;20(1):145.
4. JJI Chan, CW Tan, **CT Yeam**, R Sultana, ATH Sia, AS Habib, BL Sng. Risk Factors Associated with Development of Acute and Sub-Acute Post-Cesarean Pain: A Prospective Cohort Study. J of Pain Research 2020:13 2317 – 2328
5. Tan HS, Liu N, Sultana R, Han NR, Tan CW, **Zhang J,** Sia ATH, Sng BL. Prediction of breakthrough pain during labour neuraxial analgesia: comparison of machine learning and multivariable regression approaches. Int J Obstet Anesth. 2020 Aug 25:S0959-289X(20)30115-1.
6. **EW Du**, HS Tan, CW Tan, R Sultana, BL Sng. Heart rate variability and haemodynamic factors associated with hypotension during spinal anaesthesia for caesarean delivery: A case–control study. Eur J Anaesthesiol 2021 Jun 7
7. Au-Yong PS, Tan CW, Tan WH, Tan KH, **Goh Z**, Sultana R, Sng BL. An investigation of factors associated with an increased risk of instrumental vaginal delivery in women with epidural analgesia for labour: A retrospective cohort study. Eur J Anaesthesiol. 2021 October Vol 38, 10: 1059-1066
8. Tan HS, **Agarthesh T**, Tan CW, Sultana R, Chen HY, Chua TE, Sng BL. Perceived stress during labor and its association with depressive symptomatology, anxiety, and pain catastrophizing. Sci Rep. 2021;1: 17005
9. Sim XLJ, Tan CW, **Yeam CT**, Tan HS, Sultana R, Sng BL. Association of Pain Catastrophizing and Depressive States with Multidimensional Early Labor Pain Assessment in Nulliparous Women Having Epidural Analgesia - A Secondary Analysis. J Pain Res. 2021 Oct 7;14:3099-3107
10. HS Tan, CW Tan, R Sultana, **CH Lim**, JJI Chan, AS Habib, BL Sng. Factors associated with postoperative nausea or vomiting in parturients undergoing caesarean delivery under spinal anaesthesia with intrathecal morphine: a prospective cohort study. Eur J Anaesthesiol 2022; 39:75–91.

St. John, Ashley L. *PhD*

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

Associate Professor, SingHealth Duke-NUS Global Health Institute

Associate Professor, Department of Microbiology and Immunology, NUS

Adjunct Associate Professor, Pathology Department, Duke University, Durham, NC, USA

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Website: Ashley St John Lab

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

NEO Zheng Wei, Kenneth (Class of 2022)

Student Publications

NA

Subramaniam, Mythily *MBBS, MD, PhD*

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

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

Consultant, Ministry of Health

Assistant Chairman Medical Board (Research), Institute of Mental Health

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Website: https://www.researchgate.net/profile/Mythily_Subramaniam / https://scholar.google.com.sg/citations?user=DWWYoH4AAAAJ&hl=en&oi=ao

Research Summary

Mythily graduated from the Lady Hardinge Medical College, India. She received her PhD from Monash University and is currently Director of the Research Division and Lead Investigator of the Programme of Mental Health Policy Studies at the Institute of Mental Health (IMH). She also has a concurrent teaching appointment at the Lee Kong Chian School of Medicine and Saw Swee Hock School of Public Health, National University Singapore.

Her main academic and research interests include psychiatric epidemiology, psychosis and addictions. She was the Co-Principal Investigator of several nation-wide studies that have established the prevalence of mental disorders in the Singapore population including the Singapore Mental Health Study (2010 and 2016); and the Well-being of the Singapore Elderly study. She is also well versed in qualitative and mixed method designs and has used them in her work related to mental health services research.

Past and Current Duke-NUS MD Research Students

KONG Man Cher (Class of 2021)

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)
POH Li Wen (Class of 2022; 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

Contact: 6516 4973

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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, Division of Endocrinology, National University Health System

Professor, 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, psochosocial 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*

Clinical Professor, Duke-NUS Medical School

Senior Consultant, Department of Vascular and Interventional 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 in 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

1. **Wong HL**, Chan SXJM, Ramamuthy S, Tay KH, Chong TT, Tan CS, Patel A, Too CW, Irani FG, Choong LHL, Chng SP, Tan BS. Mid-term Outcomes of Patients with Central Venous Occlusive Disease Undergoing Surveillance Venography and Intervention. Annals, Academy of Medicine, Singapore. 2020 June, 49 (6); 360-366.
2. **Goh WXT**, Leong S, Too CW, et al. Catheter-Directed Computed Tomography Hepatic Angiography for Yttrium-90 Selective Internal Radiotherapy of Hepatocellular Carcinoma Reduces Prophylactic Embolisation of Extrahepatic Vessels. Cardiovasc Intervent Radiol. 43(3):478-487. Epub 2019 Nov 8.
3. **Woon TK**, Sanamandra SK, Salkade PR, Venkatanarasimha N, Ganguly R, Ho CL, Bakar RA, Chua JME, Tan BS, Damodharan K. Subcentimetre thyroid nodules: Sonographic features associated with malignancy. Ultrasound. 2020 Aug, 28(3):155-163

Tan, Chieh Suai

Clinical Associate Professor, Duke-NUS Medical School

Head and Senior Consultant, Department of Renal Medicine, Singapore General Hospital

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Website:
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)
ZHANG Zezhou (Class of 2021)
Alon Ramos MENDEZ (Class of 2021; Co-mentor)

Student Publications

1. **Alicia Ong** et al. Assessment of dysfunctional hemodialysis vascular accesses during angioplasty using Syngo iflow. (Research Day 2016 – Best Poster Presentation Award)
2. **Zhang Zezhou** et al. Does Reducing Radiation Levels for Procedures Affect Image Quality and Radiation to Proceduralists? A Double-Blinded Randomized Study of Two Protocols. 3rd place Podium abstract, 17th Annual Scientific Meeting of the American Society of Diagnostic and Interventional Nephrology.
3. A pilot study on adjunctive use of parametric colour-coded digital subtraction angiography in endovascular interventions of haemodialysis access. Tan RY, Chong TT, Tsai FC, Pang SC, Lee KG, Gogna A, **Ong AH**, Tan CS. BMC Med Imaging. 2018 Sep 15;18(1):28. doi: 10.1186/s12880-018-0270-8. PMID: 30219054
4. Does reducing radiation levels for procedures affect image quality and radiation to proceduralists? A double-blinded randomized study of two protocols" [76 (2) e1-e10]. **Zhang Z**, Phang CC, Tan RY, Pang SC, Chandramohan S, Zhuang KD, Sulaiman MS, Tay KH, Chong TT, Tan CS. Clin Radiol. 2021 Jul;76(7):552.e1. doi: 10.1016/j.crad.2021.04.003. Epub 2021 May 8. PMID: 33975710

Tan, Ene Choo *PhD*

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

Chief Research Scientist & Principal Investigator, KK Research Centre, 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, Programme in Neuroscience and Behavioural Disorders, Duke-NUS Medical School

Academic Vice Chair, SingHealth Duke-NUS Neuroscience (NEUROSC) Academic Clinical Programme

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

Deputy Medical Director (Academic Affairs), National Neuroscience Institute

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

Associate Designated Institutional Official (ADIO), SingHealth Clinician Scientist Residency

Chairman, Research Accreditation of Mentors and Centers, Ministry of Health

Chief Editor, Annals of Academy of Medicine, Singapore

Co-director, Parkinson Foundation International Center of Excellence, USA

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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 Ming Hui (Class of 2012)
Lim Jing Wei (Class of 2012)
Swe Swe Thet Paing (Class of 2014)
Ng Kia Min (Class of 2014; Co-mentor)
Heng Xiao Wei (Class of 2015)
Cheng Yu-Ching (Class of 2015)
Ong Yi Lin (Class of 2019)
VOON Siew Lian (Class of 2020)
Arthur Edmond Cheng Nan BOO (Class of 2022)
NG Yuen Fann (Class of 2022)
Zi Hang PAN (Class of 2022; Co-mentor)
SIA Ming Wei (Class of 2022; Co-mentor)
XIAO Xiao (Class of 2022)
LEE Joon Yan, Selene (Class of 2023)

Student Publications

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

Tan, Hiang Khoon *MBBS, FRCS (Ed), PhD, FAMS*

Adjunct Associate Professor, Duke-NUS Medical School

Chairman and Senior Consultant, Division of Surgery and Surgical Oncology, Singapore General Hospital and National Cancer Centre Singapore

Academic Chair, SingHealth Duke-NUS Surgery Academic Clinical Programme

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

Clinical Teacher, Content Expert, Clinical Practice Facilitator, Lee Kong Chian School of Medicine, Nanyang Technological University

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Website: -

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)
LOW Zhen Luan (Class of 2021)
ZHAO Zhengzheng (Class of 2021)
KEONG Si Ying, Julienne (Class of 2021; Co-mentor)
Dylon PENG (Class of 2022)
HUANG Wenya, Naomi (Class of 2023)

Student Publications

NA

Tan, Hong Chang

Assistant Professor, Duke-NUS Medical School

Senior Consultant, Department of Endocrinology, Singapore General Hospital

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Website: -

Research Summary

Areas of research

1. Metabolic fuel utility and intermediary metabolism during physiological and pathological states.

2. Type 2 Diabetes, obesity, and metabolic syndrome

Research methods

In vivo human metabolism using stable-isotope tracers, insulin clamp studies, indirect calorimetry, nutritional supplementation

Past and Current Duke-NUS MD Research Students

Yao Jie (Class of 2019)

Student Publications

1. Effects of laparoscopic sleeve gastrectomy on concentration and composition of bile acids in an Asian population with morbid obesity. **Yao, J.**, Kovalik, J.-P., Lai, O. F., Lee, P. C., Eng, A. K. H., Chan, W. H., et al. (2020). Proceedings of Singapore Healthcare, 27, 201010582095248. http://doi.org/10.1177/2010105820952489
2. Comprehensive Assessment of the Effects of Sleeve Gastrectomy on Glucose, Lipid, and Amino Acid Metabolism in Asian Individuals with Morbid Obesity. **Yao, J.**, Kovalik, J.-P., Lai, O. F., Lee, P. C., Eng, A., Chan, W. H., Tan HC. Obesity Surgery (2018). http://doi.org/10.1007/s11695-018-3487-2

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

Associate Professor, Office of Academic and Clinical Development, Duke-NUS Medical School

Senior Consultant, Division 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

Contact: 6436 8574

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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)
CHEN Guanglin (Class of 2021)
Hye Yoon SONG (Class of 2022; Co-mentor)

Student Publications

NA

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

Senior Associate Dean, Office of Academic and Clinical Development, Duke-NUS Medical School

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

Group Director, SingHealth Duke-NUS Institute for Patient Safety and 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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Website: https://www.duke-nus.edu.sg/about/leadership/office-of-academic-and-clinical-development/tan-kok-hian

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 & 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), and studies of burnout and resilience of health professionals and patient safety.

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)
Cai Meijin (Class of 2019; Co-mentor)
Lim Muhammad Haikel Asyraf (Class of 2020; Co-mentor)
TAN Ruiling, Cherylin (Class of 2021)
CHEN Zhengyong (Class of 2023)

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.

3. **Lim HA**, Chua TE, Malhotra R, Allen JC, Teo I, Chern BSM, Tan KH, Chen H. Identifying trajectories of antenatal depression in women and their associations with gestational age and neonatal anthropometry: A prospective cohort study. Gen Hosp Psychiatry. 2019;61:26-33.

4. **Cai MJ**, Loy SL, Tan KH, Cheung YB, Lek N, Lee YS, Chan SY, Chan J, Yap F, Ang SB. Impact of elective and emergency cesarean section on early childhood overweight. JAMA Netw Open. 2018 Nov 2;1(7):e185025. doi: 10.1001/jamanetworkopen.2018.5025. PMID: 30646378

5. **Cai MJ**, Tan KH, Ang SB. I-ACT: Integrated study on effect of activity on complications in pregnancy: study protocol of a multiethnic prospective cohort study. BMJ Open 2019;9:e025970. doi:10.1136/bmjopen-2018-025970

Tan, Emile John *BSc (Hons), MBBS (UK), MD (Research) (UK), FRCS (UK)*

Clinical Associate Professor, Duke-NUS Medical School

Head and Senior Consultant, Department of Colorectal Surgery, Singapore General Hospital and National Cancer Centre Singapore

Director, SGH Gastrointestinal Function Unit

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

Master of Medicine (Surgery) Committee Member, Division of Graduate Medical Studies, NUS Yong Loo Lin School of Medicine

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

Content Expert, Clinical Teacher and Clinical Practice Facilitator, Lee Kong Chian School of Medicine, Nanyang Technological University

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Research Summary

A/Prof Tan's clinical interests are in robotic and laparoscopic Minimally Invasive Surgery (MIS), Cancer, IBD, and functional/pelvic floor disorders. His research interests align with his clinical expertise and additional commitments. They include Health Services Research, Qualitative and Quantitative analysis of surgical outcomes, Improving Healthcare efficiency and delivery through technology.

Cancer: His research into colorectal cancer (CRC) encompasses both short- and long-term studies involving quantitative and qualitative investigations. They include long-term survivorship quality-of-life and retrospective database studies, post-colorectal resection recovery with respect to treatment methods (neoadjuvant chemotherapy vs chemoradiotherapy studies) and psychosocial interventions for CRC patients.

Functional GI: Study of the metabolic consequences of chronic gastro-intestinal functional disorders, with a special interest in neuromodulation outcomes, biofeedback and Traditional Chinese Medicine (TCM) acupuncture in the treatment of functional bowel disorders (constipation and faecal incontinence).

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.

A/Prof Tan has been PI on national and international grants and is widely published 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)
XUE, Bai (Class of 2020)
LIM Wen Lin Mark (Class of 2020; Co-mentor)
Julia CHUANG (Class of 2021)
Gabriel FIGUEROA TORRES (Class of 2021; Co-mentor)

Student Publications

NA

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

Adjunct Professor, Duke-NUS Medical School

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

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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Website: -

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)
Wee Jian-Ting, Natalie (Class of 2016)
Huang Xinxin (Class of 2019)
LUM Xian Jun, Nathaniel (Class of 2020)
Emily SOH Ming Li (Class of 2021)
SIA Ming Wei (Class of 2022)
GOH Si Wei (Class of 2023)

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 Oct;55:50-54.
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 2019, Mar;26(3):400-406.
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, 33(12):1970-71.
9. **Huang X**, Tan LCS. Reply to: 'Non-motor symptoms in postural instability/gait difficulty subtype in early stage of Parkinson's disease'. Eur J Neurol 2019, Mar;6(3):e38.

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

Clinical 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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Research Summary

Assoc Prof 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 Centre and publishes over 160 publications in peer-reviewed journals and two book chapters.

Assoc Prof 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 trainees in the 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)
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)
CHUA Ing Loon, Sean (Class of 2020; Co-mentor)
LIM Jie En (Class of 2021)
Sharon Hanna SUNNY (Class of 2021; Co-mentor)
Tultul DAS (Class of 2023; Co-mentor)
QUAK Xin En Stephanie (Class of 2023)

Student Publications

1. **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.
2. **Moon EW**, Tan NC, Allen JC, Jafar TH. The Use of Wireless, Smartphone App-Assisted Home Blood Pressure Monitoring Among Hypertensive Patients in Singapore: Pilot Randomized Controlled Trial. JMIR Mhealth Uhealth. 2019 May 28;7(5):e13153. doi: 10.2196/13153. PMID: 30905872; PMCID: PMC6658261.
3. **Foon Yin Fung,** Yi Ling Eileen Koh, Rahul Malhotra, Truls Ostbye, Ping Yein Lee, Sazlina Shariff Ghazali, Ngiap Chuan Tan. Prevalence of and factors associated with sarcopenia among multi-ethnic ambulatory older Asians with type 2 diabetes mellitus in a primary care setting. BMC Geriatr. 2019 Apr 29;19(1):122. doi: 10.1186/s12877-019-1137-8. PMID: 31035928
4. **Sean Ing Loon Chua**, Ngiap Chuan Tan, Wei Teen Wong, John Carson Allen Jr, Joanne Hui Min Quah, Rahul Malhotra, Truls Østbye. Virtual Reality for Screening of Cognitive Function in Older Persons: Comparative Study. J Med Internet Res 2019;21(7):e14821. doi:10.2196/14821
5. **Sun Joon Hwang,** Ngiap Chuan Tan, Sungwon Yoon, Chandrika Ramakrishnan, Muthulakshmi Paulpandi, Shihying Gun, Jia Ying Lee, Zi Ying Chang, Tazeen H Jafar. Perceived barriers and facilitators to chronic kidney disease care among patients in Singapore: a qualitative study. BMJ Open. 2020 Oct 16;10(10):e041788. doi: 10.1136/bmjopen-2020-041788. PMID: 33067304
6. **Lim JE,** Wong WT, Teh TA, Lim SH, Allen JC Jr, Quah JHM, Malhotra R and Tan NC (2021) A Fully-Immersive and Automated Virtual Reality System to Assess the Six Domains of Cognition: Protocol for a Feasibility Study. Front. Aging Neurosci. 12:604670. doi: 10.3389/fnagi.2020.604670
7. **Sunny SH,** Malhotra R, Ang SB, Lim CSD, Tan YSA, Soh YMB, Ho XYC, Gostelow M, Tsang LPM, Lock SHS, Kwek SY, Lim YTJ, Vijakumar K and Tan NC (2020). Facilitators and Barriers to Post-partum Diabetes Screening Among Mothers With a History of Gestational Diabetes Mellitus–A Qualitative Study From Singapore. Front. Endocrinol. 11:602. doi: 10.3389/fendo.2020.00602
8. Wong WT, Tan NC, **Lim JE**, Allen JC Jr, Lee WS, Quah JHM, Paulpandi M, Teh TA, Lim SH and Malhotra R (2021) Comparison of Time Taken to Assess Cognitive Function Using a Fully Immersive and Automated Virtual Reality System vs. the Montreal Cognitive Assessment. Front. Aging Neurosci. 13:756891. doi: 10.3389/fnagi.2021.756891

Tan, Patrick *MD, PhD*

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

Professor, SingHealth Duke-NUS Global Health Institute

Executive Director, Genome Institute of Singapore

Executive Director, Precision Health Research Singapore (PRECISE)

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 multicentre 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

CHEN Lianghe (Class of 2019, Co-Mentor)

Student Publications

NA

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

Professor, Duke-NUS Medical School

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

Academic Chair, SingHealth Duke-NUS Pathology Academic Clinical Programme (ACP)

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

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Research Summary

Dr Tan Puay Hoon has active interests in breast, urologic and renal pathology, and is a Standing Editorial Board member of the 5th series of the WHO Classification of Tumours, IARC. She was a Volume Editor of the 2012 WHO Classification of Tumours of the Breast. She sits on several Editorial Boards, including Modern Pathology, Breast Cancer Research, 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 500 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

CHANG Huan Ying (Class of 2021)
Kelvin WIRAWAN (Class of 2023)
Runyi Adeline Lam (Class of 2023)

Student Publications

1. **Chang HY**, Koh VCY, Md Nasir ND, Ng CCY, Guan P, Thike AA, Teh BT, Tan PH. MED12, TERT and RARA in fibroepithelial tumours of the breast. J Clin Pathol. 2020 Jan;73(1):51-56. doi: 10.1136/jclinpath-2019-206208. Epub 2019 Oct 29.
2. **Runyi Adeline Lam**, Tracy Zhijun Tien, Craig Ryan Joseph, Johnathan Xiande Lim, Aye Aye Thike, Jabed Iqbal, Puay Hoon Tan and Joe Poh Sheng Yeong. Cancer-Testis Antigens in Triple-Negative Breast Cancer: Role and Potential Utility in Clinical Practice.cancers 2021 PMD34359776

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

Clinical 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)
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)
LIM En Ning (Class of 2020)
Panyachote KETYUNGYOENWONG (Class of 2021)
NEO Yu Pei (Class of 2022)
LEE Jing Kai (Class of 2023)

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)*

Adjunct Associate Professor, Duke-NUS Medical School

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

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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)
CHIAM Paula (Class of 2022)

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.
7. **He S**, Allen JC, Malhotra R, Østbye T, Lek SM and Tan TC. Association of maternal serum progesterone in early pregnancy with low birth weight and other adverse pregnancy outcomes. *J Mat Fetal Neonatal Med* 2015;3:1-6
8. **Lek SM**, Ku CW, Allen JC, Malhotra R, Østbye T, Tan NS and Tan TC. Validation of serum progesterone <35nmol/L as a predictor of miscarriage among women with threatened miscarriage. *BMC Pregnancy and Childbirth* 2017;17(1):78
9. **Ku CW**, Tan ZW, Li M, Tam ZY, Tan TC, Tan NS. Spontaneous miscarriage in first trimester pregnancy is associated with altered urinary metabolite profile. *BBA Clinical* 2017;8:48-55.
10. **Tang L**, Liew HM, Koh MJ. Allen JC, Tan TC. Prevalence of striae gravidarum in a multi-ethnic Asian population and the associated risk factors. *Australas J Dermatol* 2017;58(3):154-155
11. **Ku CW**, Allen JC, Lek SM, Chia ML, Tan NS, Tan TC. Serum progesterone distribution in normal pregnancies compared to pregnancies complicated by threatened miscarriage from 5 to 13 weeks gestation: a prospective cohort study. *BMC Pregnancy and Childbirth* 2018;18:30
12. **Siew JYS**, Allen JC, Hui CYY, Malhotra R, Ostbye T, Tan TC. The randomised controlled trail of micronized progesterone and dydrogesterone (TROMAD) for threatened miscarriage. *Eur J Obstet Gynecol Reprod Biol* 2018;228:319-324
13. **Zhu CS**, Tan TC, Chen HY, Malhotra R, Allen JC, Ostbye T. Threatened miscarriage and depressive and anxiety symptoms among women and partners in early pregnancy. *J Affect Disord* 2018 Sep;237:1-9

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

Medical Director and Consultant Dermatologist, The Skin Specialists and Laser Clinic, Mount Alvernia Medical Centre

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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*

Clinical Assistant Professor, Duke-NUS Medical School

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

Director (Adult & Paediatric Body Imaging Research; Paediatric Imaging), SingHealth Duke-NUS Radiological Sciences (RADSC) Academic Clinical Programme

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

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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 radiofequency 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

1. **Hou W**, Tang PH, Agarwal P. The most useful cranial ultrasound predictor of neurodevelopmental outcome at 2 years for preterm infants. Clinical Radiology 2020;75:278-286

2. **Ong YZ**, Saffari SE, Tang PH. Prospective Randomised Controlled Trial on the Effect of Videos On the Cooperativeness of Children Undergoing MRI and Their Requirement for General Anaesthesia. Clinical Radiology. 2018 Oct;73(10):909.e15-909.e24.

3. **Evelyn Gabriela Utama**, Seyed Ehsan Saffari, Tang Phua Hwee. Improving children's cooperativeness during MRI scans using interactive educational animated videos: a prospective, randomized, non-inferiority trial. SMJ. 2021 Oct, 1-21.

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, China

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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 *MA (Hons), MB BChir (Surg), MRCS, MD (UK), FRCS (Gen), FAMS, CWSP*

Adjunct Assistant Professor, Duke-NUS Medical School

Senior Consultant, Department of Vascular Surgery, Singapore General Hospital and National Cancer Centre Singapore

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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

Gideon Yosua PURWONO (Class of 2023)

Student Publications

NA

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

Clinical Associate Professor, Duke-NUS Medical School

Head & 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)
LOW Wan Li (Class of 2021)
LIM Chun Chai (Class of 2023)

Student Publications

NA

Tay, Kiang Hiong *MBBS, FRCR, FAMS*

Clinical Professor, Duke-NUS Medical School

Vice Chair (Clinical Services Operations) and Director (Vascular & Interventional Radiology), SingHealth Duke-NUS Radiological Sciences (RADSC) Academic Clinical Programme

Head and Senior Consultant, Department of Vascular and Interventional Radiology, Singapore General Hospital

Senior Consultant. Interventional Radiology, Sengkang General Hospital

Adjunct 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)
LAU Chin Cheung (Class of 2021)
Timothy TAY Kai Cheng (Class of 2022)

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)**
3. **Ni WW**, Leong S, Irani F, Patel A, Damodharan K, Venkataranasimha N, Chandramohan S, Kumar P, Chua J, Gogna A, Zhuang KD, Chong TT, Tang TY, Chng SP, Tay KH. "Angioplasty-First" Approach for Limb Salvage in Asian Patients with Critical Limb Ischemia: Outcomes from 3,303 Angioplasties on 2,402 Limbs in a Single Tertiary Hospital. Journal of Vascular and Interventional Radiology. 2020 Dec;31 (12):1969-1977.e1 **(2020 JVIR Editor's Honoree for Clinical Research)**
4. **Ni W**, Leong S, Chng JK, Tay KH. Extrinsic Compression of the Ovation Stent-Graft Following Glue Embolisation for Type II Endoleak: An Unusual Complication. Endovasc Ther. 2018 Apr;25(2):252-254.
5. **Loy LM**, Chua JME, Chong TT, et al. Type 2 Endoleaks: Common and Hard to Eradicate yet Benign? Cardiovasc Interventl Radiol. 2020 May.

Teh, Bin Tean *MD, PhD*

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

Professor, SingHealth Duke-NUS Global Health Institute

Deputy Medical Director (Research), National Cancer Centre Singapore

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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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)
CHANG Huan Ying (Class of 2021; Co-mentor)

Student Publications

NA

Tenen, Daniel *MD*

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 (Ebralidze, 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

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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)
POH Li Wen (Class of 2022)
SEE Jia Wen, Faith (Class of 2022; Co-mentor)

Student Publications

NA

Tey, Hong Liang *MBBS, FRCP(Edin), MRCPS(Glasg), FAMS, Dip.(Geriatric Med.)*

Senior Consultant, Clinician Researcher and Research Director, National Skin Centre

Associate Professor & co-Director of Skin Research Programme, Lee Kong Chian Medicine, Nanyang Technological University

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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)
Charmaine TAY Jieying (Class of 2022)

Student Publications

NA

Thumboo, Julian *MBBS (S'pore), MMed (Int Med), MRCP (UK), FAMS (Rheumatology), FRCP (Edin)*

Professor, Duke-NUS Medical School

Director, Research Office, Singapore General Hospital

Senior Consultant, 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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Website: -

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)
PEH Kai Qi, Elizabeth (Class of 2022)

Student Publications

NA

Ting, Shu Wei Daniel *MBBS (Hons), BSciMed, FRCOphth, M Med(Ophth), FAMS, PhD (UWA)*

Associate Professor, Ophthalmology and Visual Science, Duke-NUS Medical School

Associate Professor, SingHealth Duke-NUS Global Health Institute

Director, SingHealth AI Program, SingHealth

Associate Professor (Courtesy), Biomedical Engineering, National University of Singapore

Clinician Mentor, SUTD-Duke-NUS Special Track programme

Head, AI and Digital Innovation, Singapore Eye Research Institute

Deputy Director, Digital Transformation Office, Singapore National Eye Centre

Deputy Clinical Director, Regional Eye System, Singapore National Eye Centre

Consultant, Vitreo-retinal, Singapore National Eye Centre

Contact: -

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Website:https://www.duke-nus.edu.sg/academic-medicine/about-academic-medicine/academic-clinical-programmes/ophthalmology-and-visual-sciences/regular/Detail/Daniel-Ting-Shu-Wei

Research Summary

In collaboration with 30 clinical and technical scientists, A/Prof Ting developed a deep learning system, called SELENA+, for automatic detection of diabetic retinopathy (DR), glaucoma and age-related macular degenerations (AMD). It has now been patented, licensed to a spin-off company, obtained approval from the Singapore Health Sciences Authority (HSA) and European CE Mark, widely tested in China, HK, Malaysia, South Africa, and has recently been listed as one of the National AI strategy algorithms. A/Prof Ting also developed a Dr Covid chatbot during Covid-19 pandemic, and deployed it as a broadcasting and clinical operational tool for medical measures and social contents at the largest community isolation facilities (CIF) @ EXPO.

A/Prof Ting has published >200 peer-reviewed papers in highly prestigious journals such as JAMA, NEJM, Lancet, Nature Medicine, Nature Biomedical Engineering, Lancet Digital Health and etc. In 2021, he is also ranked the world's most influential deep learning researcher across all domains in healthcare for the past 10 years (2010-2021) by the ExpertScape. At the global setting, A/Prof Ting serves in several AI executive committee (American Academy of Ophthalmology, STARD-AI, QUADAS-AI, DECIDE-AI), AI editorial boards (Associate Editors for Nature Digital Medicine, Frontiers in Medicine and Frontiers in Digital Health; Section Editor for British Journal of Ophthalmology; Editors for Ophthalmology, Ophthalmology Retina, British Journal of Ophthalmology and Asia-Pacific Journal of Ophthalmology) and Chair of AI and Digital Innovation Standing Committee, Asia-Pacific Academy of Ophthalmology.

Past and Current Duke-NUS MD Research Students

Michelle Yip (Class of 2020)
Wang Zhaoran (Class of 2023)

Student Publications

1. Xie Y, Nguyen QD, Hamzah H, Lim G, Bellemo V, Gunasekeran DV, **Yip MYT**, Qi Lee X, Hsu W, Li Lee M, Tan CS, Tym Wong H, Lamoureux EL, Tan GSW, Wong TY, Finkelstein EA, Ting DSW. Artificial intelligence for teleophthalmology-based diabetic retinopathy screening in a national programme: an economic analysis modelling study. Lancet Digit Health. 2020 May;2(5):e240-e249. doi: 10.1016/S2589-7500(20)30060-1.
2. Sim SS, **Yip MY**, **Wang Z**, Tan ACS, Tan GSW, Cheung CMG, Chakravarthy U, Wong TY, Teo KYC, Ting DS. Digital Technology for AMD Management in the Post-COVID-19 New Normal. Asia Pac J Ophthalmol (Phila). 2021 Jan-Feb 01;10(1):39-48. doi: 10.1097/APO.0000000000000363.
3. Bellemo V, Lim ZW, Lim G, Nguyen QD, Xie Y, **Yip MYT**, Hamzah H, Ho J, Lee XQ, Hsu W, Lee ML, Musonda L, Chandran M, Chipalo-Mutati G, Muma M, Tan GSW, Sivaprasad S, Menon G, Wong TY, Ting DSW. Artificial intelligence using deep learning to screen for referable and vision-threatening diabetic retinopathy in Africa: a clinical validation study. Lancet Digit Health. 2019 May;1(1):e35-e44. doi: 10.1016/S2589-7500(19)30004-4. Epub 2019 May 2.
4. **Wang Z**, Lim G, Ng WY, Keane PA, Campbell JP, Tan GSW, Schmetterer L, Wong TY, Liu Y, Ting DSW. Generative adversarial networks in ophthalmology: what are these and how can they be used? Curr Opin Ophthalmol. 2021 Sep 1;32(5):459-467. doi: 10.1097/ICU.0000000000000794.
5. **WANG, Z.**, KEANE, P. A., CHIANG, M., CHEUNG, C. Y., WONG, T. Y. & TING, D. S. W. 2020. Artificial Intelligence and Deep Learning in Ophthalmology. In: LIDSTRÖMER, N. & ASHRAFIAN, H. (eds.) Artificial Intelligence in Medicine. Cham: Springer International Publishing
6. Ng WY, Zhang S, **Wang Z**, Ong CJT, Gunasekeran DV, Lim GYS, Zheng F, Tan SCY, Tan GSW, Rim TH, Schmetterer L, Ting DSW. Updates in deep learning research in ophthalmology. Clin Sci (Lond). 2021 Oct 29;135(20):2357-2376. doi: 10.1042/CS20210207.
7. Tan TE, Xu X, **Wang Z**, Liu Y, Ting DSW. Interpretation of artificial intelligence studies for the ophthalmologist. Curr Opin Ophthalmol. 2020 Sep;31(5):351-356. doi: 10.1097/ICU.0000000000000695.

Toh, Han Chong *BSc (London), MB Bchir (Cambridge), FRCP Edin, FAMS*

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

Associate Professor, SingHealth Duke-NUS Global Health Institute

Senior Consultant and Deputy Medical Director (Strategic Partnerships), 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)
LAU Kin Mun (Class of 2021)
CHU Jun Ming, Axel (Class of 2022)
LOH Jia Ling, Celestine (Class of 2023)

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

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Research Summary

Prof 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. Prof 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.

Vasudevan, Subhash *PhD*

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

Joint Professor, Department of Microbiology & Immunology, NUS

Adjunct Professor, Institute for Glycomics (G26), Griffith University, Gold Coast campus

Editor, Antiviral Research (Elsevier)

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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 ineteractome of flaviviruses using yeast-two hybrid technology as well as biochemically using immuneprecipitation 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 School of Medicine, Duke University

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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*

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

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

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Website: Duke-NUS Webpage

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 are the intrinsic mechanisms underlying NSC reactivation? What are the molecular signatures of quiescent NSCs? What are the extrinsic signals “waking up” quiescent NSCs? 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, Programme in Emerging Infectious Diseases, Duke-NUS Medical School

Professor, SingHealth Duke-NUS Global Health Institute

Professor, Duke Global Health Institute, Duke University School of Medicine

Executive Director, Programme for Research in Epidemic Preparedness and Responses (PREPARE)

Honorary Professor, University of Melbourne and Chinese Academy of Sciences

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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 450 scientific publications (with a current h-index of 98), including papers in Science Nature, NEJM and Lancet. He is currently the Editor-in-Chief for the open access Virology Journal. Prof Wang was elected to the Australian Academy of Technological Sciences and Engineering in 2010 and The American Academy of Microbiology in 2021.

Past and Current Duke-NUS MD Research Students

Matae Ahn (Class of 2018)
Geraldine Goh (Class of 2016)
Wharton O Yinn Chan (Class of 2019)
Charles Kevin Dee Tiu (Class of 2019)

Student Publications

1. **Ahn M** and Wang L-F (2021) Translation from bats to humans beyond infectious diseases. **J Exp Med** 218(9):e20211223. doi: 10.1084/jem.20211223.
2. Irving A, **Ahn M, Goh G**, Anderson AE, Wang L-F (2021) Lessons from the host defences of bats, a unique viral reservoir. **Nature** 589 (7842): 363-370. doi.org/10.1038/s41586-020-03128-0
3. Wang L-F, **Ahn M**, Anderson DE (2021) Bats and Coronaviruses in the Context of COVID-19. **China CDC Weekly** 3(7): 153-155. doi: 10.46234/ccdcw2021.045
4. 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.
5. **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.
6. Leeansyah, E., Hey, Y.Y., Sia, W.R., Jia Ng, J.H.J., Gulam, M.Y., Boulouis, C., Zhu, F., **Ahn, M**., Mak, J.Y.W., Fairlie, D.P., Kwa, A.L.H., Sandberg, J.K. & Wang, L.-F. (2020) MR1- restricted T cells with MAIT-like characteristics are functionally conserved in the pteropid bat Pteropus alecto, **iScience**, doi: https://doi.org/10.1016/j.isci.2020.101876.
7. Gamage, A. M., Zhu, F., **Ahn, M**., Foo, R.J.H., Hey, Y.Y., Low, D.H.W., Mendenhall, I.H., Dutertre, C.-A. & Wang, L.-F. (2020) Immunophenotyping monocytes, macrophages and granulocytes in the Pteropodid bat Eonycteris spelaea. **Scientific Reports** 10, 309, doi:10.1038/s41598-019-57212-1.
8. **Goh G, Ahn M**, Zhu F, Lee LB, Luo D, Irving AT, Wang L-F. (2020) Complementary regulation of caspase-1 and IL-1β reveals additional mechanisms of dampened inflammation in bats. **Proc Natl Acad Sci U S A**. 26:202003352. doi: 10.1073/pnas.2003352117.
9. 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.
10. Chia WN, Zhu F, Ong SWX, Young BE, Fong SW, Le Bert N, Tan CW, **Tiu C**, Zhang J, Tan SY, Pada S, Chan YH, Tham CYL, Kunasegaran K, Chen MI, Low JGH, Leo YS, Renia L, Bertoletti A, Ng LFP, Lye DC, Wang L-F (2021) Dynamics of SARS-CoV-2 neutralising antibody responses and duration of immunity: a longitudinal study. **Lancet Microbe**. doi: 10.1016/S2666-5247(21)00025-2. PMID: 33778792
11. Chia, WN, Tan CW, Foo R, Kang AEZ, Peng Y, Sivalingam V, **Tiu C**, Ong XM, Zhu F, Young BE, Chen MI-C, Tan Y-J, Lye DC, Anderson DE, Wang L-F (2020) Serological differentiation between COVID-19 and SARS infections. **Emerg Microbes Infect** 9: 1497-1505.
12. Tan CW, Chia WN, Qin X, Liu P, Chen MI-C, **Tiu C**, Hu Z, **Chen VC-W**, Young BE, Sia WR, Tan Y-J, Foo R, Yi Y, Lye DC, Anderson DE, Wang, L.-F (2020) A SARS-CoV-2 surrogate virus neutralization test based on antibody-mediated blockage of ACE2-spike protein-protein interaction. **Nat Biotech** 38: 1073-1078. DOI: 10.1038/s41587-020-0631-z
13. Wang L-F, Gamage AM, **Chan WOY**, Hiller M and Teeling EC (2021) Decoding bat immunity: the need for a coordinated research approach. Nat Rev Immunol doi: 10.1038/s41577-021-00523-0.

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 Icmt, 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 Icmt 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 Icmt 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 Icmt 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

Emeritus Consultant, University Spine Centre, , Department of Orthopaedic Surgery, NUH

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Website: -

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 Interbody Fusion Model. *Spine 40*. No.13 (2015):964-73

Wong, Tien Yin *MBBS, MMED(Ophth), MPH, PHD, FRCSE, FRANZCO, FAMS*

Arthur Lim Professor of Ophthalmology and Provost Chair Professor, Duke-NUS Medical School

Head and Chair Professor, Tsinghua Medicine, Tsinghua University (Beijing, China)

Senior Advisor, SingHealth Board

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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)
Hee Seung YANG (Class of 2021)
WANG Zhaoran (Class of 2022; Co-mentor)
Grace May CHUANG (Class of 2023)

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, Tzee Ling Tina

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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Research Summary

Prof Wong conducts clinical research on glaucoma with a focus on quality of life, new therapeutics and interventions (medications and surgical treatments), drug delivery systems to better deliver drugs into the eye. Prof Wong has a lab in the 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 state of the art imaging tools that are also used in patients in the clinics.

Prof Wong has a strong collaboration with the Laboratory for Translational and Molecular Imaging, Duke NUS and a new collaboration in the upcoming Nanomedicine Building in NUS.

Current projects

1. Evaluation of surgery effectiveness in managing glaucoma – patient reported outcomes and quality of life
2. Investigation of siRNA treating ocular fibrosis
3. Genetic basis for aggressive scarring in glaucoma surgical patients

Past and Current Duke-NUS MD Research Students

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

Student Publications

Semra Ozdemir, **Hong King Wu**, Eric A. Finkelstein, Tina T Wong. Parents' views on their children's use of eyedrops and willingness to accept a new sustained-release subconjunctival injection. Clin Ophthalmol. 2017, 25;11:1903-09

Yang, Meijuan Grace

Assistant Professor, Lien Centre for Palliative Care, Duke-NUS Medical School

Senior Consultant, Division of Supportive & Palliative Care, National Cancer Centre Singapore

Senior Consultant, Palliative Medicine, Department of General Medicine, Sengkang General Hospital

Director, Research, SingHealth Duke-NUS Supportive & Palliative Care Centre

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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)
Victoria Jane En LONG (Class of 2022)
LIM Sut Yee (Class of 2023)

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. Additonally, 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 deaetylase (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)
Nang Mo HOM (Tracy) (Class of 2023)

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

Senior Consultant, Neonatal and Developmental Medicine, Singapore General Hospital

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)
Hwarng Yung Hsin Gwen (Class of 2018)
LEE Li Wen (Class of 2020)
ONG Wei Jie (Class of 2023)

Student Publications

NA

Yeo, George Seow Heong *MBBS, FRCOG, FAMS*

Professor, Duke-NUS Medical School

Visiting Consultant, Department of Maternal Fetal Medicine, KK Women's and Children's Hospital

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

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

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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)*

Clinical Associate Professor, Duke-NUS Medical School and SingHealth Duke-NUS Global Health Institute

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

Scientific Lead, Databases and Biostatistics Core, National Heart Research Institute Singapore

Deputy Group Chief Medical Informatics Officer (Research), SingHealth

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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)
Freda Jawan (Class of 2016)
Billy Yonathan Wijaya (Class of 2017)
Xie Yufei (Class of 2019)
KOH Tracy (Class of 2020)
TAN Hui Cheng, Candy (Class of 2021)
YEO Ching Yee, Ivory (Class of 2022)
FONG Ru Ying (Class of 2023)
LOW Yi Hua (Class of 2023)
Sakura NAKADA (Class of 2023)

Student Publications

NA

Yeo, Seng Jin *MBBS, FRCS*

Clinical Professor, Duke-NUS Medical School

Senior Consultant, Adult Reconstruction Service, Department of Orthopaedic Surgery, Singapore General Hospital

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Website: -

Research Summary

Dr Yeo conducts clinical research on orthpaedic 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)
FOO Yong Xiang, Wayne (Class of 2023)

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, Rikhraj 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
8. **Yeh JZY**, Chen JY, Bin Abd Razak HR, Loh BH, Hao Y, Yew AK, Chia SL, Lo NN, Yeo SJ. Preoperative haemoglobin cut-off values for the prediction of post-operative transfusion in total knee arthroplasty. Knee Surg Sports Traumatol Arthrosc. 2016 Oct;24(10):3293-3298.
9. **Yeh JZY**, Chen JY, Lee WC, Chong HC, Pang HN, Tay DKJ, Chia SL, Lo NN, Yeo SJ. Identifying an Ideal Time Frame for Staged Bilateral Total Knee Arthroplasty to Maximize Functional Outcome. J Knee Surg. 2017 Sep;30(7):682-686.
10. **Yeh JZY**, Chen JY, Lim JW, Pang HN, Tay DKJ, Chia SL, Lo NN, Yeo SJ. Postoperative fixed flexion deformity greater than 10° lead to poorer functional outcome 10 years after unicompartmental knee arthroplasty. Knee Surg Sports Traumatol Arthrosc. 2018 Jun;(26(6):1723-1727.
11. Ng CK, Chen JY, **Yeh JZY**, Ho JPY, Merican AM, Yeo SJ. Distal Femoral Rotation Correlates With Proximal Tibial Joint Line Obliquity: A Consideration for Kinematic Total Knee Arthroplasty. J Arthorplasty. 2018 Jun;33(6):1936-1944.
12. Lo LWT, **Suh J**, Chen JY, Liow MHL, Allen JC, Lo NN, Yeo SJ, Howe TS, Koh JSB. Early Postoperative Pain After Total Knee Arthroplasty Is Associated With Subsequent Poorer Functional Outcomes and Lower Satisfaction. J Arthroplasty. 2021 Feb 25:S0883-5403(21)00204-7.
13. **Suh J**, Liow MHL, Pua YH, Chew ESX, Chia SL, Lo NN, Yeo SJ, Chen JY. Early postoperative straight leg raise is associated with shorter length of stay after unilateral total knee arthroplasty. J Orthop Surg(Hong Kong). Jan-Apr 2021;29(1):23094990211002294.

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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Website: -

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)
Sharon Poh Shuxian (Class of 2013)
Wong Hai Liang Marc (Class of 2015)
Chen Lianghe (Class of 2019)

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)*

Emeritus Consultant, Department of Obstetrics and Gynaecology, National University Hospital

Professor, Department of Obstetrics & Gynaecology, Yong Loo Lin School of Medicine, National University of Singapore

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Website: -

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)
ZHAO Zhengzheng (Class of 2021; Co-mentor)
PEH Kai Qi, Elizabeth (Class of 2022; Co-mentor)
Priscilla WEE Jia Ling (Class of 2022)
HOE Pei Shan (Class of 2023)
MO Jiahui (Class of 2023; Co-mentor)
YAP Weiliang (Class of 2023; Co-mentor)

Student Publications

NA

Zhang, Su-Chun *MD, PhD*

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

Professor, Department of Neuroscience, Department of Neurology, University of Wisconsin

Adjunct Professor, Department of Neurology, Duke University

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Website: https://www.duke-nus.edu.sg/nbd/the-team/faculty-members/faculty-member-staff-details/Detail/zhang-suchun

Research Summary

Professor Zhang is a pioneer in stem cell biology and regenerative medicine. He has developed technology to guide human stem cells, including induced pluripotent stem cells (iPSCs), to functionally specialized nerve cell types that are lost in many neurological and psychiatric conditions like Parkinson's disease, Huntington's disease, ALS, Alzheimer's disease, and spinal cord injury. Using iPSCs derived from patients and stem cells genetically modified, Professor Zhang is dissecting the cellular and molecular mechanism underlying neural degenerative diseases like ALS, Downs syndrome, Alzheimer's disease and Parkinson's disease. He also uses patient stem cells for drug discovery. In parallel, he is conducting cell therapy studies in animal models of neurological diseases like Parkinson's disease and spinal cord injury before moving to clinics. Available projects for students include "cellular and molecular mechanism of aging and age-related neurodegeneration" as well as "development of cell therapy for neurological conditions".

Past and Current Duke-NUS MD Research Students

HAN Tianzhuo (Class of 2022)

Student Publications

NA

Zhong, Liang *PhD*

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

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 hemodyanics 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*

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

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

Deputy Director, Centre for Translational MR Research, Yong Loo Lin School of Medicine, National University of Singapore

Adjunct Associate Professor, Department of Electrical and Computer Engineering, National University of Singapore

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Website: https://medicine.nus.edu.sg/tmr/ | https://medicine.nus.edu.sg/csc/

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)
Terrence Tay WS (Class of 2016; Co-mentor)
Ching Yin Ying (Class of 2017; Co-mentor)
LIM Kai Wei, Joseph (Class of 2020)
Nella CHUA Qi Yu (Class of 2021)

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.
2. Sng BL, **Tay WS**, Loke YM, Wang CH, Zhou J. Resting state functional magnetic resonance imaging connectivity changes in postsurgical chronic pain. Australian Pain Society Annual Meeting, 2016 (Oral presentation).

Zhou, Lei *PhD*

Associate Professor, Ophthalmology and Visual Sciences Academic Clinical Research Program, Duke-NUS Medical School

Principal Investigator I, Singapore Eye Research Institute

Senior Principal Research Scientist, Singapore Eye Research Institute

Head, Ocular Proteomics Laboratory, Singapore Eye Research Institute

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Website: -

Research Summary

A/P 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 115 peer-reviewed publications including papers in Progress in Retinal and Eye Research, Signal Transduction and Targeted Therapy, Nature Communications, Ophthalmology, Journal of Advanced Research, Diabetes, Molecular & Cellular Proteomics, Analytical Chemistry, and several patents.

Past and Current Duke-NUS MD Research Students

Nicodemus Oey (Class of 2012, Co-mentor)
Timothy Twonlee CHUANG (Class of 2021; 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.