



**Master of Research in Medicine (MRes[Med]) 2020-2021
Research Topics**

Research Topic	Supervisor(s)
Department of Anaesthesiology	
1. Effects of peripheral stimulation on acupuncture points for pain relief of low back pain patients	Professor CW Cheung
2. Effects of spinal cord stimulation on epigenetic regulation in an animal model of neuropathic pain	Professor CW Cheung
3. Propofol Keo	Professor MG Irwin Dr GTC Wong
School of Biomedical Sciences	
4. Understanding progenitor cells in the formation of the skeleton for regenerative medicine	Professor D Chan
5. Adult-born neurons re-open plasticity of neural circuitry for rescuing dysfunctions in motor learning and navigation	Professor YS Chan
6. Molecular mechanism of synaptic plasticity on motor learning and navigation	Professor YS Chan
7. Mechanistic insights into intervertebral disc degeneration by single cell transcriptomics and lineage tracing	Professor KSE Cheah
8. The role of the integrated stress response in the pathogenesis of fibrosis	Professor KSE Cheah
9. Functional characterization of patient-derived aberrated genes in gynecological cancers	Dr LWT Cheung
10. A study of the expression and therapeutic potential of DLC1 isoform 1 in spinal muscular atrophy	Dr MCH Cheung
11. Small Rho GTPases in cancer metastasis	Dr YP Ching
12. Artificial intelligence, mHealth and big data in medicine	Dr JWK Ho
13. Metagenomics and cancer	Dr JWK Ho
14. Comparison of analytical tools for somatic mutation identification in precision medicine	Dr A Javed
15. Molecular basis of hepatitis B virus cccDNA transcription and maintenance	Professor DY Jin
16. Molecular mechanism of Epstein-Barr virus persistence and transformation	Professor DY Jin
17. The role of kinesin in experience-dependent dendritic spine plasticity in neurodevelopment	Dr CSW Lai
18. A knock-in strategy to study protein localization and transport in human neuron through genome editing	Dr KO Lai
19. Investigating the regulatory role of protein arginine methylation in dendritic spine development in neurons	Dr KO Lai
20. Effects of social enrichment on stress resilience and vulnerability	Dr LW Lim
21. Investigation of neuroplasticity-dependent and –independent mechanisms of electrical deep brain stimulation in animal models of dementia and depression	Dr LW Lim
22. Expanded potential stem cells for studying human disease and for regenerative medicine and cancer	Professor PT Liu
23. Development of Nucleic Acid Aptamers for Therapeutics and Diagnostics	Dr JA Tanner
24. Cellular and molecular biology of nasopharyngeal cancer	Professor GSW Tsao
25. Molecular basis of cell immortalization and malignant transformation	Professor GSW Tsao

Research Topic	Supervisor(s)
26. Evaluation of commercial next-generation sequencing mutation testing for targeted cancer therapy	Dr JWH Wong
27. Chemical and optogenetical approaches to investigate cellular phosphatidylinositol biogenesis	Dr CH Yu
28. Integrin-mediated signaling in cell adhesion, migration and invasion	Dr CH Yu
29. Contribution of stem cell maintenance to aging	Professor ZJ Zhou
30. Stem cell decline in SIRT6 deficient aging mice	Professor ZJ Zhou
Department of Clinical Oncology	
31. Identification and characterization of metastatic associated genes in gastric cancer	Professor XY Guan
32. Blood immune biomarkers to guide personalized adjuvant immunotherapy in lung cancer	Professor SFM Kong
33. Blood immune biomarkers to guide personalized immunotherapy in solid tumors	Professor SFM Kong
34. Understanding the interplay between host immunity and tumor cells in Nasopharyngeal Carcinoma	Professor DLW Kwong Dr YNW Kam
35. Autoimmunity in Cardiopulmonary Toxicities (CPT) from Radiotherapy and Immunotherapy	Professor B Lu
36. Role of Tumor-Expressed PD-1	Professor B Lu
37. Genomics approaches to the study of inherited genetic susceptibility to nasopharyngeal and esophageal carcinomas development and the study of tumor suppressor genes (TSGs) contributing to cancer pathogenesis	Professor ML Lung
Department of Family Medicine & Primary Care	
38. Health, health-related quality of life and primary care services utilization of low-income families	Professor CLK Lam
39. Non-Communicable Diseases Indicators, Diabetes Mellitus and Cardiovascular Disease Risks and Metabolic Allostatic Load of the Hong Kong General Population	Professor CLK Lam Dr ETY Tse Dr CKH Wong Dr EYT Yu
40. Optimization in Hong Kong Public Health Service using Big Data research	Dr EYF Wan Dr ETY Tse Dr EYT Yu Professor CLK Lam
41. Health utility valuation and measurement for paediatric population	Dr CKH Wong Dr JPY Cheung Dr P Ip
42. Self-reported Health, Health status, Health Service Utilization, and Sleeping Quality of the Hong Kong General Population	Dr CKH Wong Dr ETY Tse Dr EYT Yu Professor CLK Lam
Department of Medicine	
43. Immuno-pathogenetic mechanisms in kidney disease of systemic lupus erythematosus	Professor TM Chan Dr SSY Yung
44. Pathogenic mechanisms of fibrosis in the kidney and other organs	Professor TM Chan Dr SSY Yung
45. Obesity, metabolic syndrome, cardiovascular and non-cardiovascular complications	Professor BMY Cheung Dr CL Cheung
46. Functional brain mapping using high resolution electroencephalography	Professor RTF Cheung
47. Neuroprotection in rodent stroke models	Professor RTF Cheung
48. Molecular basis of neuronal mitochondria functions in normal aging and Parkinson's disease using in vitro and in vivo experimental models	Professor SL Ho Dr PWL Ho
49. Adjuvant antivirals therapy for influenza	Professor IFN Hung

Research Topic	Supervisor(s)
50. Influenza vaccination	Professor IFN Hung
51. Inflammasomes and Systemic Lupus Erythematosus	Professor CS Lau Dr VSF Chan
52. Role of the gut microbiome in vascular and brain health	Dr GKK Lau Professor IFN Hung
53. Use of digital health platforms, wearables and machine learning to improve the management and prognosis of stroke and dementia	Dr GKK Lau
54. In search for novel treatments for acute myeloid leukaemia	Professor AYH Leung
55. Zebrafish model of human leukaemia	Professor AYH Leung
56. Fibrosis, cirrhosis and steatosis in chronic liver disease	Dr WK Seto
57. 1. Circulating stem cells in cardiovascular medicine 2. Outcome prediction of cardiac arrhythmias 3. Heart and hormones 4. Vascular function and diet 5. Genetic basis of cardiac arrhythmias and cardiomyopathy 6. Cardiac stem cell therapy 7. Modeling of heart disease with stem cell	Professor HF Tse Professor DCW Siu
58. Adipokines as diagnostic markers and therapeutic targets for cardiovascular complications of obesity and diabetes	Professor AM Xu Professor PMGR Vanhoutte
59. Predictors of adverse events following valvular heart surgery: Chinese Valvular Heart Disease Study	Dr KH Yiu
60. Impact of feeding mode on advanced dementia patients with feeding problems	Dr JKY Yuen
61. Measuring the quality of patient-centered advance care planning communication	Dr JKY Yuen
Department of Microbiology	
62. Discovery and mechanistic evaluation of novel antivirals for emerging and re-emerging viral infections	Dr JFW Chan
63. AIDS Vaccine and Immunological Cure of HIV Infection	Professor ZW Chen
64. Functional cure of HIV infection	Professor ZW Chen
65. Emerging and zoonotic infectious diseases	Professor SKP Lau
66. Novel pathogen discovery and microbial genomics	Professor PCY Woo
67. Study of a novel cell entry pathway for enterovirus infection	Dr PML Yeung
Department of Obstetrics & Gynaecology	
68. Regulation and mechanistic studies on endometrial receptivity: in vitro screening and characterization of small molecules	Dr CKF Lee Professor WSB Yeung
69. Cardiometabolic parameters in women with polycystic ovary syndrome	Dr RHW Li
70. Perception of menopause-related symptoms and hormone replacement therapy in the Hong Kong Chinese population	Dr RHW Li
71. Biomolecular studies in gynaecological cancers	Professor HYS Ngan Dr DW Chan
72. Roles of microRNAs in endometrial cells during implantation	Professor WSB Yeung
Department of Ophthalmology	
73. A Pilot Clinical Trial on the Potential Therapeutic Effect of Photobiomodulation in Glaucoma Patients	Dr JYK Chan Dr JKW Wong
74. An intraoperative microsurgical instrument for effective silicone oil removal in vitreoretinal surgery	Dr JYK Chan Professor WC Lam
75. Immune modulatory effects of the traditional Chinese medicine Lycium barbarum in Alzheimer's disease-related vision loss	Dr K Chiu

Research Topic	Supervisor(s)
76. Trans-scleral electrical stimulation in traumatic optic neuropathy, retinal ischemia reperfusion injury, and chronic glaucoma models	Dr K Chiu
77. Photobiomodulation in the treatment of glaucoma	Professor JSM Lai Dr JKW Wong
Department of Orthopaedics & Traumatology	
78. Clinical Studies in Spine Imaging and Pain	Dr JPY Cheung
79. School screening for scoliosis	Dr JPY Cheung
80. Clinical and basic research in low back pain	Professor KMC Cheung Dr KYH Kwan Dr JPY Cheung
81. Clinical and basic research in scoliosis	Professor KMC Cheung Dr KYH Kwan Dr JPY Cheung
82. Clinical electrophysiology in orthopaedics	Dr Y Hu
83. Intraoperative spinal evoked potential monitoring	Dr Y Hu
84. Bone cement and biomaterial application	Professor WW Lu
85. Application of nanomedicine in orthopaedic trauma; Immune modulating therapy in spinal cord regeneration	Dr GKH Shea Dr MKT To
86. Use of autologous bone marrow-derived neural progenitors for cell therapy in the injured CNS and PNS	Dr GKH Shea Professor YS Chan
Department of Paediatrics & Adolescent Medicine	
87. Biology of human mesenchymal stem cells (hMSCs)	Professor GCF Chan
88. Evaluate the efficacy and mechanisms of novel cytotoxic agents on neurogenic tumours	Professor GCF Chan
89. Genetic manipulation in vivo and in vitro to study function of novel genes	Dr SY Chan
90. Novel 4-dimensional Echocardiographic Evaluation of Cardiac Function in Children with Congenital and Acquired Heart Diseases	Professor YF Cheung
91. Next generation sequencing of Epstein-Barr virus genomes in cancer tissues and saliva	Dr AKS Chiang
92. Translational research in novel therapy for EBV-associated lymphoproliferative diseases and epithelial cancers	Dr AKS Chiang
93. Whole exome sequencing in Paediatric Rare Diseases	Dr BHY Chung
94. Primary immunodeficiencies	Professor YL Lau
95. Analysis of genomic data for clinical diagnosis and personalized treatment	Dr WL Yang Professor YL Lau
Department of Pathology	
96. Molecular biology of endocrine-resistant breast cancer	Professor US Khoo
97. Identification of novel oncogenes and tumour suppressor genes involved in gastrointestinal cancer development and stem cell regulation based on gene expression profiling, chromosomal copy number profiling and epigenetic studies in genomics scale	Professor SY Leung
98. Lymphopoiesis and apoptosis in the development of autoimmune diseases	Professor LW Lu
Department of Pharmacology & Pharmacy	
99. Vascular protective functions of the anti-aging protein SIRT1	Dr Y Wang Professor PMGR Vanhoutte
Department of Psychiatry	
100. Clinical high-risk for psychosis: prediction, progression and early intervention	Dr WC Chang

Research Topic	Supervisor(s)
101. Reward learning and biased inferential decision-making in early psychosis, bipolar disorder and at-risk mental state for psychosis	Dr WC Chang
102. Cognitive neuropsychology and psychopathology of psychotic disorders	Professor EYH Chen
103. Early intervention for psychosis	Professor EYH Chen
104. Mindfulness intervention for relapse in psychosis	Dr CLM Hui
105. Genetic analysis of complex diseases	Professor PC Sham
School of Public Health	
106. Unraveling the causes of cardiovascular disease and type 2 diabetes using nature's randomized trial	Dr RSL Au Yeung
107. Characterization of host factors involved in virus infections	Professor R Bruzzone
108. Targeting deubiquitylases as therapeutic strategies against viral infections	Professor R Bruzzone
109. Risk assessment of influenza A viruses using experimental models derived from human respiratory tract	Dr MCW Chan Dr KPY Hui
110. Obesity and physical activity in students	Dr DSY Ho
111. Lifestyle, lifecourse and molecular epidemiology study in Guangzhou	Professor TH Lam Dr CQ Jiang
112. Tobacco and alcohol control in Hong Kong and China Mainland	Professor TH Lam
113. Cancer rehabilitation – how to prevent lost in transition	Dr WWT Lam
114. Optimization of cancer care	Dr WWT Lam
115. Behavioural economics-based incentives in adults with diabetes: randomized control trial	Professor GM Leung Dr JC Quan
116. The economic cost of diabetes	Professor GM Leung Dr JC Quan
117. Study on the anti-viral effect of amantadine modified drug in cell model	Dr KP Mok
118. Exploring upstream factors related to physical, mental and social well-being: leveraging a ten-year large prospective cohort	Dr MY Ni Professor GM Leung
119. 1. Population determinants of depression 2. Developing the World Health Organization World Mental Health Composite International Diagnostic Interview-5 (WHO WMH-CIDI-5) for Hong Kong 3. Social media and mental health 4. Biological markers of stress and their association with depression 5. Does where and who do you live with matter? Role of built and social environment in health 6. How to improve detection of depression 7. Social dynamics, resilience, and mental health 8. Why do Hong Kong people have the longest life expectancy in the world?	Dr MY Ni Professor GM Leung
120. Life course influences on health	Dr CM Schooling
121. Exercise for obesity and metabolic syndrome in children and young adults	Dr PMF Siu
122. Exercise for sleep and mental health in elderly	Dr PMF Siu
123. Promotion of respiratory health by improving awareness of environmental exposure to air toxics among school children	Dr LW Tian Dr DKM Ip
124. Public health effects of air pollution on mortality and admissions to hospitals	Dr LW Tian Dr TQ Thach
125. Immune correlates of protection to influenza: role of adaptive immunity	Dr S Valkenburg

Research Topic	Supervisor(s)
126. Infectivity and transmission potential of aerosols in the exhaled breath of influenza patients	Dr HL Yen Professor JSM Peiris Professor BJ Cowling Professor YG Li
Department of Surgery	
127. Prospective evaluation of outcomes of HBV-related acute-on-chronic liver failure in Hong Kong	Dr KSH Chok
128. Biomarkers and chemoresistance in esophageal squamous cell carcinoma (ESCC)	Professor SYK Law
129. Neuroprotection for ischaemic and haemorrhage stroke	Professor GKK Leung
130. Novel treatment approach for chemoresistant malignant glioma	Professor GKK Leung
131. Preventing and improving outcomes of small-for-size syndrome after living donor liver transplantation (LDLT)	Professor CM Lo Dr TCL Wong
132. Genomics - Stem cell biology of biliary atresia (BA)	Dr VCH Lui Professor PKH Tam
133. Molecular signatures linked to graft injury and tumour recurrence after liver transplantation	Professor K Man
134. Novel therapies for liver cancer recurrence after transplantation	Professor K Man
135. Genomics of Hirschsprung disease	Professor PKH Tam Dr CSM Tang
136. Molecular diagnosis and treatment of head and neck cancers	Dr TS Wong Dr W Gao

November 6, 2019

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