



Master of Research in Medicine (MRes[Med]) 2019-2020 – Research Topics

Area & Topic of Research	Supervisor(s)
AIDS Institute	
1. AIDS Vaccine and Immunological Cure of HIV Infection	Professor ZW Chen
Department of Anaesthesiology	
2. Effects of peripheral stimulation on acupuncture points for pain relief of low back pain patients	Professor CW Cheung
3. Effects of spinal cord stimulation on epigenetic regulation in an animal model of neuropathic pain	Professor CW Cheung
4. Propofol Keo	Professor MG Irwin Dr GTC Wong
5. The effects of an alpha 2 receptor agonist on perioperative renal function	Dr GTC Wong Professor MG Irwin
School of Biomedical Sciences	
6. Understanding progenitor cells in the formation of the skeleton for regenerative medicine	Professor D Chan
7. Adult-born neurons re-open plasticity of neural circuitry for rescuing dysfunctions in motor learning and navigation	Professor YS Chan
8. Molecular mechanism of synaptic plasticity on motor learning and navigation	Professor YS Chan
9. Molecular signaling of neuronal death in neurodegenerative diseases	Dr RCC Chang
10. Neuroprotective effects of Chinese medicine in neurodegenerative diseases	Dr RCC Chang
11. The role of the integrated stress response in the pathogenesis of fibrosis	Professor KSE Cheah
12. Functional characterization of patient-derived aberrated genes in gynecological cancers	Dr LWT Cheung
13. Elucidating the role of DEPDC1B in melanoma development	Dr MCH Cheung
14. Investigating the role of SoxE genes (Sox8, Sox9 and Sox10) in tumor metastasis	Dr MCH Cheung
15. Small Rho GTPases in cancer metastasis	Dr YP Ching
16. Therapeutic neoantigen vaccine against gastrointestinal tract cancers	Professor JD Huang Dr TCC Yau
17. Therapeutic neoantigen vaccine against liver cancer	Professor JD Huang Dr TCC Yau
18. Molecular basis of hepatitis B virus cccDNA transcription and maintenance	Professor DY Jin
19. Molecular mechanism of Epstein-Barr virus persistence and transformation	Professor DY Jin
20. The role of kinesin in experience-dependent dendritic spine plasticity in neurodevelopment	Dr CSW Lai
21. A knock-in strategy to study protein localization and transport in human neuron through genome editing	Dr KO Lai
22. Investigating the regulatory role of protein arginine methylation in dendritic spine development in neurons	Dr KO Lai
23. Cytoskeletal regulation in axonal growth and guidance	Dr CW Lee
24. Effects of social enrichment on stress resilience and vulnerability	Dr LW Lim

Area & Topic of Research	Supervisor(s)
25. Investigation of neuroplasticity-dependent and –independent mechanisms of electrical deep brain stimulation in animal models of dementia and depression	Dr LW Lim
26. Live-cell Imaging analysis of abnormal cell migration in enteric nervous system disorder	Professor MH Sham
27. Regenerate motor neurons from spinal cord stem cells	Professor MH Sham
28. Development of Nucleic Acid Aptamers for Therapeutics and Diagnostics	Dr JA Tanner
29. Cellular and molecular biology of nasopharyngeal cancer	Professor GSW Tsao
30. Molecular basis of cell immortalization and malignant transformation	Professor GSW Tsao
31. Evaluation of commercial next-generation sequencing mutation testing for targeted cancer therapy	Dr JWH Wong
32. Targeting ER-stress/Unfolded protein response as a means for annihilating cancer cells	Dr NS Wong
33. Viral infection and cellular stress response mechanisms	Dr NS Wong
34. Chemical and optogenetical approaches to investigate cellular phosphatidylinositol biogenesis	Dr CH Yu
35. Integrin-mediated signaling in cell adhesion, migration and invasion	Dr CH Yu
36. Contribution of stem cell maintenance to aging	Professor ZJ Zhou
37. Stem cell decline in SIRT6 deficient aging mice	Professor ZJ Zhou
Department of Clinical Oncology	
38. Identification and characterization of metastatic associated genes in gastric cancer	Professor XY Guan
39. 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 Diagnostic Radiology	
40. Structural Brain Connectivity Networks in Stroke and Neurodegenerative Patients	Dr HKF Mak Dr ES Hui
41. Cardiac MRI to assess microvascular ischaemia in patients with stable angina and non-obstructed coronary arteries	Dr V Vardhanabhuti Dr MY Ng
42. Quantitative Radiomics in Predicting Cancer Outcomes incorporating Machine Learning	Dr V Vardhanabhuti
Department of Family Medicine & Primary Care	
43. A prospective practice-based study of the patterns of health problems, diagnoses and management in Hong Kong primary care	Dr JY Chen
44. Health, health-related quality of life and primary care services utilization of low-income families	Professor CLK Lam
45. 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
46. Knowledge, attitudes and practices of primary care doctors towards antibiotic use and resistance in Hong Kong	Professor TP Lam
47. Health utility valuation and measurement for paediatric population	Dr CKH Wong Dr JPY Cheung Dr P Ip
48. 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

Area & Topic of Research	Supervisor(s)
Department of Medicine	
49. Immuno-pathogenetic mechanisms in kidney disease of systemic lupus erythematosus	Professor TM Chan Dr SSY Yung
50. Pathogenic mechanisms of fibrosis in the kidney and other organs	Professor TM Chan Dr SSY Yung
51. Functional brain mapping using high resolution electroencephalography	Professor RTF Cheung
52. Neuroprotection in rodent stroke models	Professor RTF Cheung
53. Molecular basis of neuronal mitochondria functions in normal aging and Parkinson's disease using in vitro and in vivo experimental models	Dr PWL Ho Professor SL Ho
54. Influenza vaccination	Professor IFN Hung
55. Management of multiple drug resistant organisms	Professor IFN Hung
56. Therapeutic drug screening model for lung cancer	Dr DCL Lam Dr LWT Cheung
57. Inflammasomes and Systemic Lupus Erythematosus	Professor CS Lau Dr VSF Chan
58. Role of the gut microbiome in the pathogenesis of stroke	Dr GKK Lau Professor IFN Hung
59. Stroke and vascular cognitive impairment – understanding risk factors, mechanisms and prognosis using advanced magnetic resonance imaging (MRI) techniques	Dr GKK Lau Dr HKF Mak Dr ES Hui
60. In search for novel treatments for acute myeloid leukaemia	Professor AYH Leung
61. Zebrafish model of human leukaemia	Professor AYH Leung
62. Screening of natural products or Chinese herbal medicines in the management of cigarette smoke-induced lung injury using an animal model	Dr JCW Mak
63. Fibrosis, cirrhosis and steatosis in chronic liver disease	Dr WK Seto
64. 1. Circulating stem cells in cardiovascular medicine 2. Outcome prediction of cardiac arrhythmias 3. Heart and hormones 4. Vascular function and diet 5. Genetic basic of cardiac arrhythmias and cardiomyopathy 6. Cardiac stem cell therapy 7. Modeling of heart disease with stem cell	Professor HF Tse Professor DCW Siu
65. Adipokines as diagnostic markers and therapeutic targets for cardiovascular complications of obesity and diabetes	Professor AM Xu Professor PMGR Vanhoutte
66. Predictors of adverse events following valvular heart surgery: Chinese Valvular Heart Disease Study	Dr KH Yiu
Department of Microbiology	
67. Discovery and mechanistic evaluation of novel antivirals for emerging and re-emerging viral infections	Dr JFW Chan
68. Emerging and zoonotic infectious diseases	Professor SKP Lau
69. Novel pathogen discovery and microbial genomics	Professor PCY Woo
70. Study of a novel cell entry pathway for enterovirus infection	Dr PML Yeung
Department of Obstetrics & Gynaecology	
71. Oviductal Secretory Proteins on Embryo Development	Dr CKF Lee Professor WSB Yeung
72. Cardiometabolic parameters in women with polycystic ovary syndrome	Dr RHW Li

Area & Topic of Research	Supervisor(s)
73. Knowledge, attitude and practice of contraceptive use in the Hong Kong population	Dr RHW Li
74. Biomolecular studies in gynaecological cancers	Professor HYS Ngan Dr DW Chan
75. Roles of microRNAs in endometrial cells during implantation	Professor WSB Yeung
Department of Ophthalmology	
76. Immune modulatory effects of the traditional Chinese medicine Lycium barbarum in Alzheimer's disease-related vision loss	Dr K Chiu
77. Trans-scleral electrical stimulation in traumatic optic neuropathy, retinal ischemia reperfusion injury, and chronic glaucoma models	Dr K Chiu
78. Photobiomodulation in the treatment of glaucoma	Professor JSM Lai Dr JKW Wong
79. Pathogenesis of retinopathy of prematurity	Dr ACY Lo
80. Protecting the aging retina and brain in ischemia/reperfusion injury and stroke	Dr ACY Lo
Department of Orthopaedics & Traumatology	
81. Clinical Studies in Spine Imaging and Pain	Dr JPY Cheung
82. School screening for scoliosis	Dr JPY Cheung
83. 3D assessment of scoliosis	Professor KMC Cheung Dr KYH Kwan
84. Assessment of three dimensional flexibility in scoliosis	Professor KMC Cheung Dr KYH Kwan
85. Clinical and basic research in low back pain	Professor KMC Cheung Dr YW Wong Dr WY Cheung Dr KYH Kwan Dr JPY Cheung Dr PA Koljonen Dr MKT To Dr A Zhu
86. Clinical and basic research in scoliosis	Professor KMC Cheung Dr YW Wong Dr WY Cheung Dr KYH Kwan Dr JPY Cheung Dr PA Koljonen Dr MKT To Dr A Zhu
87. Harnessing MicroRNA in treatment of osteosarcoma	Dr KSC Cheung
88. Matrix metalloproteinase 9 targeted by miR-494 promotes osteosarcoma	Dr KSC Cheung
89. Clinical electrophysiology in orthopaedics	Dr Y Hu
90. Intraoperative spinal evoked potential monitoring	Dr Y Hu
91. Motion analysis and electromyography of upper limb in neurological conditions	Dr WY Ip
92. Bone cement and biomaterial application	Professor WW Lu
93. Bone Nano structure and Nano Biomechanics	Professor WW Lu
94. Application of nanomedicine in orthopaedic trauma; Immune modulating therapy in spinal cord regeneration	Dr GKH Shea Dr MKT To
95. Use of autologous bone marrow-derived neural progenitors for cell therapy in the injured CNS and PNS	Dr GKH Shea Professor YS Chan

Area & Topic of Research	Supervisor(s)
Department of Paediatrics & Adolescent Medicine	
96. Biology of human mesenchymal stem cells (hMSCs)	Professor GCF Chan
97. Evaluate the efficacy and mechanisms of novel cytotoxic agents on neurogenic tumours	Professor GCF Chan
98. Modeling neuromuscular disease with patient's derived induced pluripotent stem cells	Professor GCF Chan Dr SHS Chan
99. Genetic manipulation in vivo and in vitro to study neuron function	Dr SY Chan
100. Novel 4-dimensional Echocardiographic Evaluation of Cardiac Function in Children with Congenital and Acquired Heart Diseases	Professor YF Cheung
101. Next generation sequencing of Epstein-Barr virus genomes in cancer tissues and saliva	Dr AKS Chiang
102. Translational research in novel therapy for EBV-associated lymphoproliferative diseases and epithelial cancers	Dr AKS Chiang
103. Whole exome sequencing in Paediatric Rare Diseases	Dr BHY Chung
104. - Susceptibility genes in SLE - Primary immunodeficiencies	Professor YL Lau
105. Analysis of genomic data for clinical diagnosis and personalized treatment	Dr WL Yang Professor YL Lau
Department of Pathology	
106. Genetic and cell biological studies of gynaecological diseases: Exploration for molecular biomarkers of clinical use	Professor ANY Cheung
107. Molecular biology of endocrine-resistant breast cancer	Professor US Khoo
108. 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
109. Lymphopoiesis and apoptosis in the development of autoimmune diseases	Professor LW Lu
Department of Pharmacology & Pharmacy	
110. Vascular protective functions of the anti-aging protein SIRT1	Dr Y Wang Professor PMGR Vanhoutte
Department of Psychiatry	
111. Reward learning and risky decision-making in early psychosis, bipolar disorder or high-risk state for psychosis	Dr WC Chang
112. Cognitive neuropsychology and psychopathology of psychotic disorders	Professor EYH Chen
113. Early intervention for psychosis	Professor EYH Chen
114. Understanding healthcare decisions in mental health*	Professor EYH Chen Dr WC Chan
115. Mindfulness intervention for relapse in psychosis	Dr CLM Hui
116. Genetic analysis of complex diseases	Professor PC Sham
School of Public Health	
117. Obesity and physical activity in students	Dr DSY Ho
118. Lifestyle, lifecourse and molecular epidemiology study in Guangzhou	Professor TH Lam Dr CQ Jiang
119. Tobacco and alcohol control in Hong Kong and China Mainland	Professor TH Lam

* This topic will only be offered on a one-off basis in the academic year 2019-2020.

Area & Topic of Research	Supervisor(s)
120. Psychosocial aspects of cancer care	Dr WWT Lam
121. The impact of cancer diagnosis on return to work and work productivity	Dr WWT Lam
122. Use of digital data for disease surveillance	Dr EHY Lau
123. The economic cost of diabetes	Professor GM Leung Dr JC Quan
124. Study on the anti-viral effect of amantadine modified drug in cell model	Dr KP Mok
125. 1. Social media and mental health 2. Biological markers of stress and their association with depression 3. Does where and who do you live with matter? Role of built and social environment in health 4. How to improve detection of depression 5. Social dynamics, resilience, and mental health 6. Why do Hong Kong people have high life expectancy but low life satisfaction? 7. Population determinants of depression	Dr MY Ni Dr FCK Cheung Professor GM Leung
126. FAMILY Cohort: Exploring upstream factors related to physical, mental and social well-being	Dr MY Ni Dr FCK Cheung Professor GM Leung
127. Characterization of host factors involved in virus infections	Dr S Sanyal
128. Targeting deubiquitylases as therapeutic strategies against viral infections	Dr S Sanyal
129. Life course influences on health	Professor CM Schooling
130. Exercise for obesity and metabolic syndrome in children and young adults	Dr PMF Siu
131. Exercise for sleep and mental health in elderly	Dr PMF Siu
132. Promotion of respiratory health by improving awareness of environmental exposure to air toxics among school children	Dr LW Tian Dr DKM Ip
133. Public health effects of air pollution on mortality and admissions to hospitals	Dr LW Tian Dr TQ Thach
134. Immune correlates of protection to influenza: role of adaptive immunity	Dr S Valkenburg
Department of Surgery	
135. Prospective evaluation of outcomes of HBV-related acute-on-chronic liver failure in Hong Kong	Dr KSH Chok
136. Epidemiology and prognostic factors for peptic ulcer perforation	Professor KM Chu
137. Molecular biology of gastric adenocarcinoma or gastrointestinal stromal tumour (GIST)	Professor KM Chu
138. Biomarkers and chemoresistance in esophageal squamous cell carcinoma (ESCC)	Professor SYK Law
139. Neuroprotection for haemorrhagic stroke	Professor GKK Leung
140. Novel treatment approach for chemoresistant malignant glioma	Professor GKK Leung
141. Molecular signatures linked to graft injury and tumor recurrence after liver transplantation	Professor CM Lo Professor K Man
142. Novel therapies for liver cancer recurrence after transplantation	Professor CM Lo Professor K Man
143. Preventing and improving outcomes of small-for-size syndrome after living donor liver transplantation (LDLT)	Professor CM Lo Dr TCL Wong

Area & Topic of Research	Supervisor(s)
144. Genomics - Stem Cell Biology of Biliary atresia (BA)	Dr VCH Lui Dr MM Garcia-Barcelo Professor PKH Tam
145. Genomics of Hirschsprung disease	Professor PKH Tam Dr MM Garcia-Barcelo Dr CSM Tang
146. Molecular diagnosis and treatment of head and neck cancers	Dr TS Wong Dr W Gao Dr JYW Chan

April 25, 2019

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