<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>1</td>
</tr>
<tr>
<td>Introduction</td>
<td>2</td>
</tr>
<tr>
<td>Mission</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>4-5</td>
</tr>
<tr>
<td>Teaching and Research</td>
<td>6-7</td>
</tr>
<tr>
<td>Professors</td>
<td></td>
</tr>
<tr>
<td>Professor CHAN Li-chong</td>
<td>8</td>
</tr>
<tr>
<td>Professor CHEUNG Nga-yin Annie</td>
<td>9</td>
</tr>
<tr>
<td>Professor KHOO Ui-soon</td>
<td>10</td>
</tr>
<tr>
<td>Professor LAM Ching-wan</td>
<td>11</td>
</tr>
<tr>
<td>Professor LEUNG Suet-yi</td>
<td>12</td>
</tr>
<tr>
<td>Professor NG Oi-lin Irene</td>
<td>13</td>
</tr>
<tr>
<td>Professor John Malcolm NICHOLLS</td>
<td>14</td>
</tr>
<tr>
<td>Professor Gopesh SRIVASTAVA</td>
<td>15</td>
</tr>
<tr>
<td>Associate Professors</td>
<td></td>
</tr>
<tr>
<td>Dr BEH Swan-lip Philip</td>
<td>16</td>
</tr>
<tr>
<td>Dr CHAN Kwok-wah</td>
<td>17</td>
</tr>
<tr>
<td>Dr LU Liwei</td>
<td>18</td>
</tr>
<tr>
<td>Dr SO Chi-chiu Jason</td>
<td>19</td>
</tr>
<tr>
<td>Dr WONG Pik Maria</td>
<td>20</td>
</tr>
<tr>
<td>Assistant Professors</td>
<td></td>
</tr>
<tr>
<td>Dr CHAN Tsun-leung Chris</td>
<td>21</td>
</tr>
<tr>
<td>Dr CHOI Wai-lap William</td>
<td>22</td>
</tr>
<tr>
<td>Dr LAW Chun-yiu Eric</td>
<td>23</td>
</tr>
<tr>
<td>Dr LO Cheuk-lam Regina</td>
<td>23</td>
</tr>
<tr>
<td>Dr LEE Kin-wah Terence</td>
<td>24</td>
</tr>
<tr>
<td>Dr NG Kit Ray</td>
<td>25</td>
</tr>
<tr>
<td>Dr WONG Chun-Ming Jack</td>
<td>26</td>
</tr>
<tr>
<td>Dr YAM Wai-ping Judy</td>
<td>27</td>
</tr>
<tr>
<td>Research Assistant Professor</td>
<td></td>
</tr>
<tr>
<td>Dr MA Kwai-yee Stephanie</td>
<td>28</td>
</tr>
</tbody>
</table>
CONTENTS

Teaching - Innovations in Curriculum Design and Delivery ................................................. 29-31
Postgraduate Diploma and Postgraduate Certificate Courses ............................................. 32
Honorary Teachers ............................................................................................................. 33
Technical and Administrative Support .............................................................................. 34

Research
Research Themes and Directions ...................................................................................... 35
Research Postgraduate Programme ................................................................................... 36-37
Research Infrastructure and Core Facilities ..................................................................... 38
State Key Laboratory for Liver Research .......................................................................... 39

Clinical Services
Consultation and Expertise ............................................................................................ 40-42
Clinical Services to the Community ................................................................................. 43-47
Partnership with the Department of Pathology and Clinical Biochemistry, Queen Mary Hospital 48-49
FOREWORD

New challenges

The science of Pathology is at the heart of modern medicine, vital for the diagnosis of disease and its clinical management. As pathologists, we have the unique advantage of bridging clinical bedside practice with basic science. Our excellence in research is reputable amongst our peers, and our achievements internationally recognized, with publications in journals referenced by the worldwide medical and scientific communities. Our research strengths and enthusiasms in cancers, stem cells/cancer stem cells, immunology, hematological diseases and forensic pathology give us tremendous opportunities to contribute towards the understanding of diseases.

As teachers we are committed to and well-equipped for teaching and its innovation. Some of us are already heavily involved in the design and running of the new 3+3+4 curriculum, however all of us are fully prepared for the challenges that lie ahead. We are also in a unique position to contribute to educating our future generations on ethics, medico-legal issues and the legal aspects of medical practice in Hong Kong. In 2010, our taught postgraduate program in Molecular and Diagnostic Pathology was launched and has been very well received since its inception. With the recent addition of a Clinical Assistant Professor, we are in an elevated position to offer more in-depth chemical pathology education to our medical students.

With modernizing pathology in mind, we provide state-of-the-art clinical diagnostic and referral services in all our sub-disciplines. In the coming years, endeavors of new hospital services will be both opportunities and challenges to us in the provision of first-class pathology service.

Looking forward, we shall strive to maintain our role as a world-class Pathology Department by fostering excellence in research and education and provision of modern pathology services. Building upon existing strengths is no easy task, nurturing junior clinical academics and scientists has become one of our priorities to ensure sustainability and succession.

We are well aware of the importance of upholding our professional image both to the general public and our fellow colleagues. Knowledge transfer would be an important element and it would be done through many means, including the public media and open symposia to share our knowledge and past, present and new discoveries. It will be our continual effort to instill in students and health-care professionals the importance of pathology as a scientific foundation for the understanding of diseases and all applied aspects of medicine.

Last but not least, as the new Head of Department, it gives me great pleasure to pay tribute to the eminent contribution of Professor LC Chan, who led our Department for almost a decade until November 2011. Professor Chan played a significant role in the Department’s achievements; his vision and guidance were instrumental in advancing and sustaining the excellent reputation we now enjoy. As part of the University family we will continue to witness his excellence in leadership, as he takes on other strategic roles in the University while remaining as a core member of our Department. We offer him our heartfelt appreciation and gratitude.

Individually we excel and together we move forward

Irene O.L. Ng
Chair Professor and Head
INTRODUCTION

The Department welcomes the incoming Head, Professor Irene Ng, and bids farewell to the outgoing Head, Professor LC Chan. Professor Ng will build on the excellence in basic and clinical research fostered over the past decade by Professor Chan, who both increased the clinical strength of the Department and established a robust, highly competitive basic science program. The research excellence of the Department’s faculty continues to win awards, including several prestigious Croucher Senior Research Fellowships. Also this year, we witnessed the establishment of the state-of-the-art State Key Laboratory for Liver Research under the leadership of Professor Ng as well as a cutting-edge metabolomics laboratory guided by Professor Lam Ching Wan. The faculty members continue to produce impressive results. Professor SY Leung’s discovery of a key tumour suppressor gene in gastric cancers and two independent reports by Dr Terence Lee and Dr Stephanie Ma on the novel properties of liver cancer tumour-initiating cells were published.

TW Mak
January 2012

Professor Tak Mak
Director
The Campbell Family Institute for Breast Cancer Research
Ontario Cancer Institute, Princess Margaret Hospital, Canada

Senior Scientist
Division of Stem Cell and Developmental Biology
Advanced Medical Discovery Institute / Ontario Cancer Institute, Canada

Honorary Professor
Department of Pathology
The University of Hong Kong

Honorary Fellow
Hong Kong College of Pathologists

“The only constant in Tak Mak’s career has been change. After jumping from a Jesuit seminary to engineering, to immunology and genetics, the scientific vagabond says he has finally found his true passion” - Nature Medicine 2003

In 1984, Tak Mak published a groundbreaking scientific paper on the cloning of the T cell receptor gene, a key component of the human immune system, and shaped the direction of research in immunology and genetics. His pioneering work in designing and advancing the use of genetically altered mice has provided key insights into molecular pathways of cancer at the cellular level.

He has won international recognition in the forms of the Emil von Behring Prize, the King Faisal Prize for Medicine, the Gairdner Foundation International Award, the Sloan Prize of the General Motors Cancer Foundation, the Paul Ehrlich Prize and the Novartis Prize in Immunology.

He is an Officer of the Order of Canada, a Foreign Associate of the National Academy of Sciences (USA) and a Fellow of the Royal Society of London (UK).
**MISSION**

**A world class Department of Pathology**

**Objectives**

To develop and provide the highest quality in diagnostic pathology and screening services in Hong Kong, Mainland China and the Asia-Pacific Region.

To instill in students and health-care professionals the importance of pathology as a scientific foundation for understanding diseases and all applied aspects of medicine.

To foster excellence in research into the pathogenesis of human diseases through harnessing the frontiers of scientific knowledge and technology.

To provide the highest quality of patient care and management through synergistic partnership and collaboration with clinicians.
The growth and development of the Department of Pathology owes a great deal of gratitude to the Universities of Scotland. Professor C.Y. Wang, a graduate of the Hong Kong College of Medicine obtained his M.D. from Edinburgh, and was the first Professor of Pathology and was appointed in 1920. At the time the predominant causes of mortality were tropical diseases, mainly infections and parasites. Professor Wang's research concentrated on tuberculosis and he was to die of the disease in 1930. He was succeeded by Professor L.J. Davis (1899-980) who had previously worked at the Wellcome Tropical Disease Research Laboratories from 1927-1930 until 1939 when he left to become director of medical laboratories in Bulawayo in Southern Rhodesia. His position was taken over by Professor R.C. Robertson who was a graduate from Glasgow University.

Professor Robertson had previously headed the Lester Institute of Research in Shanghai before coming to Hong Kong. Almost as soon as he was appointed he began to organize a diploma course in tropical medicine and hygiene. He was regarded as a man of boundless physical and moral courage, a keen humanitarian, and a champion of the cause of the Chinese. He strove zealously to improve the hygiene of the Chinese populations but his efforts were curtailed with the invasion of Hong Kong in 1941. He was held under house arrest following the Japanese invasion and later died in 1942.

After the war Professor Hou Pao-Chang held the Chair from 1948 to 1960. He had previously been Professor at Cheloo University and West China University and was well-respected within and outside China. His main research area was hepatobiliary disease and the relationship between the liver fluke, Clonorchis sinensis and bile duct carcinoma. During his tenure he oversaw the completion of a new Pathology Building in the grounds of the Queen Mary Hospital which was completed in 1958. This new building facilitated the integration of pathology teaching with research and with a clinical pathology service for Queen Mary Hospital.

Professor Hou was succeeded first by Professor R. Kirk (another Glaswegian) in 1960 and then by Professor James Gibson in 1963. Professor Kirk had previously worked at the Stack Laboratories in Khartoum, Sudan and then accepted the post of Professor of Pathology at Singapore in 1955 before coming to Hong Kong. Professor Kirk made numerous contributions to medicine in the tropics and was remembered for his work on leishmaniasis. In 1962, a few months before his death his work on that disease was recognized by the Brazilian Government's award of the Gaspar Vianna Medal. He frequently said “How coulda Glasgow man help but work on leishmaniasis? You see, at the beginning there was Leishman”.

When Professor Gibson took over after Robert Kirk's death, one of his first achievements was the formation of a separate Department of Microbiology established in 1968. The Department still consisted of the disciplines of histopathology, cytology, haematology, clinical biochemistry and later immunology. Medical jurisprudence was also taught by part-time staff. In 1970 Professor Gibson helped negotiate an agreement between the University and the Hong Kong government resulting in a grant to run what became known as the ‘Hospital Pathology Service’ (HPS). This enabled the Department to provide a high quality pathology service to a modern teaching hospital of international standing. It also enabled the University to use its expertise to enhance the quality and scope of the clinical laboratory service.

Professor Gibson’s other achievements included the setting up of a central electron microscope unit in the University, a new Clinical Pathology Building adjacent to the ‘old’ University Pathology Building in 1972, the setting up of a medical laboratory technician training programme on a territory-wide basis, the development of a cytology service, the setting up of an Immunology Section in 1975, and a tissue typing service in 1981, which now serves the whole of Hong Kong. He also oversaw the evolution of the Clinical Biochemistry Unit.
into a separate entity in 1982. While all this was going on he supervised the first students to obtain postgraduate research degrees in pathology at the University. The Department was also the organisational centre for a multicentre collaborative study of the classification of liver tumours sponsored by the WHO. This resulted in the publication of a WHO ‘blue book’ on the histological typing of tumours of the liver, biliary tract and pancreas.*

Professor Faith Ho was head of the Department from 1985 and chief of service from 1994 until her early retirement in 1996. She was a visionary in promoting excellence in research, clinical service and teaching. Professor Ho initiated and developed research employing molecular biology technique and recognized the vital importance of a multidisciplinary approach to the diagnosis and management of diseases. She contributed new knowledge in the pathogenesis of lymphomas particularly in nasal / NK lymphomas. She strengthened the five divisions of pathology – anatomical pathology, haematology, clinical biochemistry, immunology and tissue typing – by establishing new clinical posts in all divisions and academic posts in molecular biology, haematology, forensic pathology and clinical biochemistry. Professor Ho also promoted the recruitment of postgraduate students to the department and ensured a high standard of infrastructural support to enhance research and teaching.

*The above was adapted from “Constancy of Purpose”, by Dalydd Emrys Evans, Hong Kong University Press, 1987.
### Academic Staff

#### Professors

<table>
<thead>
<tr>
<th>Professor</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor CHAN Li-chong</td>
<td>Haematology</td>
</tr>
<tr>
<td>MA Cantab; PhD Lond; FRCP (UK); FHKAM (Pathology); FHKAM (Medicine)</td>
<td><a href="mailto:chanlc@pathology.hku.hk">chanlc@pathology.hku.hk</a></td>
</tr>
<tr>
<td>Professor CHEUNG Nga-yin Annie</td>
<td>Gynaecological Pathology</td>
</tr>
<tr>
<td>MBBS HK; MD HK; PhD HK; FRCPath; FHKCPath; FHKAM (Pathology)</td>
<td><a href="mailto:anycheun@pathology.hku.hk">anycheun@pathology.hku.hk</a></td>
</tr>
<tr>
<td>Professor KOOO Ui-soon</td>
<td>Breast Pathology</td>
</tr>
<tr>
<td>MBBSc; BAO; MD HK; MMedSc (Path) Irel; FRCPath; FHKCPath; MIAC; FHKAM (Pathology)</td>
<td><a href="mailto:uskhoo@pathology.hku.hk">uskhoo@pathology.hku.hk</a></td>
</tr>
<tr>
<td>Professor LAM Ching-wan</td>
<td>Chemical Pathology and Genetics</td>
</tr>
<tr>
<td>MBChB; PhD; MAACB; FAACB; FRCP; FRCPA; FHKCPath; FHKAM(Pathology); FFSc (RCPA); DABOT</td>
<td><a href="mailto:ching-wanlam@pathology.hku.hk">ching-wanlam@pathology.hku.hk</a></td>
</tr>
<tr>
<td>Professor LEUNG Suet-yi</td>
<td>Gastrointestinal Pathology</td>
</tr>
<tr>
<td>MBBS HK; MD HK; FRCPath; FRCPA; FHKAM (Pathology)</td>
<td><a href="mailto:suetyi@hku.hk">suetyi@hku.hk</a></td>
</tr>
<tr>
<td>Professor NG Oi-lin Irene</td>
<td>Hepatopathology</td>
</tr>
<tr>
<td>MBBS HK; MD HK; PhD HK; FRCPath; FHKCPath; FHKAM (Pathology)</td>
<td><a href="mailto:iolng@hku.hk">iolng@hku.hk</a></td>
</tr>
<tr>
<td>Professor John Malcolm NICHOLLS</td>
<td>Paediatric Pathology</td>
</tr>
<tr>
<td>MBBS Adel; FRCPA; FHKCPath; FHKAM (Pathology)</td>
<td><a href="mailto:nicholls@pathology.hku.hk">nicholls@pathology.hku.hk</a></td>
</tr>
<tr>
<td>Professor Gopesh SRIVASTAVA</td>
<td>Molecular Pathology</td>
</tr>
<tr>
<td>BSc (Hon); MSc (Hon) Pun; PhD Adel</td>
<td><a href="mailto:gopesh@pathology.hku.hk">gopesh@pathology.hku.hk</a></td>
</tr>
</tbody>
</table>

#### Associate Professors

<table>
<thead>
<tr>
<th>Professor</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr BEH Swan-lip Philip</td>
<td>Forensic Pathology</td>
</tr>
<tr>
<td>MBBS HK; DMJ (Clin et Path) Lond; CTLHE HK; FHKCPath; FHKAM (Pathology)</td>
<td><a href="mailto:philipbeh@pathology.hku.hk">philipbeh@pathology.hku.hk</a></td>
</tr>
<tr>
<td>Dr CHAN Kwok-wah</td>
<td>Renal Pathology</td>
</tr>
<tr>
<td>MBBS HK; FRCPath; FHKCPath; FHKAM (Pathology)</td>
<td><a href="mailto:kwchan@pathology.hku.hk">kwchan@pathology.hku.hk</a></td>
</tr>
<tr>
<td>Dr LU Li-wei</td>
<td>Immunology</td>
</tr>
<tr>
<td>MMed Norman Bethune; PhD McGill</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:liweilu@hkucc.hku.hk">liweilu@hkucc.hku.hk</a></td>
<td></td>
</tr>
<tr>
<td>Dr SO Chi-chiu Jason</td>
<td>Haematology</td>
</tr>
<tr>
<td>BSc (Hon) HK; MBBS HK; MRCP (UK); FRCPath; FHKCPath; FHKAM (Pathology)</td>
<td><a href="mailto:scc@pathology.hku.hk">scc@pathology.hku.hk</a></td>
</tr>
<tr>
<td>Dr WONG Pik Maria</td>
<td>Pulmonary Pathology</td>
</tr>
<tr>
<td>MBBS HK; MD HK; FHKAM (Pathology); FHKCPath; FIAC</td>
<td><a href="mailto:mwpik@hkucc.hku.hk">mwpik@hkucc.hku.hk</a></td>
</tr>
</tbody>
</table>
## DEPARTMENT OF PATHOLOGY

### TEACHING AND RESEARCH

#### Academic Staff

<table>
<thead>
<tr>
<th>Assistant Professors</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dr CHAN Tsun-leung Chris</strong>&lt;br&gt;BSc UK; PhD HK; FFSc (RCPA)&lt;br&gt;<a href="mailto:tlchan@pathology.hku.hk">tlchan@pathology.hku.hk</a></td>
<td>Molecular Gastrointestinal Pathology</td>
</tr>
<tr>
<td><strong>Dr CHOI Wai-lap William</strong>&lt;br&gt;MBBS HK; PDipID HK; MRCP (UK); DABPath; DABPath(CP); FHKCPath&lt;br&gt;<a href="mailto:wlchoi@pathology.hku.hk">wlchoi@pathology.hku.hk</a></td>
<td>Haematopathology</td>
</tr>
<tr>
<td><strong>Dr LAW Chun-yiu Eric</strong>&lt;br&gt;BMedSc (Hon) CUHK; MBChB CUHK&lt;br&gt;<a href="mailto:ericlaw@pathology.hku.hk">ericlaw@pathology.hku.hk</a></td>
<td>Chemical Pathology</td>
</tr>
<tr>
<td><strong>Dr LO Cheuk-lam Regina</strong>&lt;br&gt;MBChB CUHK; FRCPA; FHKCPath&lt;br&gt;<a href="mailto:reginalo@pathology.hku.hk">reginalo@pathology.hku.hk</a></td>
<td>Translational Cancer Biology</td>
</tr>
<tr>
<td><strong>Dr NG Kit Ray</strong>&lt;br&gt;BSc CUHK; MPhil CUHK; PhD Cantab&lt;br&gt;<a href="mailto:rayng@pathology.hku.hk">rayng@pathology.hku.hk</a></td>
<td>Hepatopathology</td>
</tr>
<tr>
<td><strong>Dr WONG Chun-ming Jack</strong>&lt;br&gt;BSc HK; MMedSc HK; PhD HK&lt;br&gt;<a href="mailto:jackwong@pathology.hku.hk">jackwong@pathology.hku.hk</a></td>
<td>Molecular Haematology</td>
</tr>
<tr>
<td><strong>Dr YAM Wai-ping Judy</strong>&lt;br&gt;BSc Washington; MSc HK; PhD HK&lt;br&gt;<a href="mailto:judyyam@pathology.hku.hk">judyyam@pathology.hku.hk</a></td>
<td>Cancer Epigenetics</td>
</tr>
</tbody>
</table>

#### Research Assistant Professor

<table>
<thead>
<tr>
<th>Research Assistant Professor</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dr MA Kwai-yee Stephanie</strong>&lt;br&gt;BSc Canada; MSc Canada; PhD HK&lt;br&gt;<a href="mailto:sma@pathology.hku.hk">sma@pathology.hku.hk</a></td>
<td>Cancer Stem Cells and Molecular Cancer Biology</td>
</tr>
</tbody>
</table>
What causes leukaemia? How to make better and caring doctors?

CHAN Li-chong

EDUCATION
- Co-Ordinator, Task Force in Medical Humanities, LKS Faculty of Medicine
- Co-Director, The Centre for the Humanities and Medicine, the University of Hong Kong
- Leader, Working Group on the AoI in Scientific & Technological Literacy, Common Core Curriculum Committee
- Member, Common Core Curriculum Steering Committee

RESEARCH
- Aetiology, cellular and molecular biology of leukaemias

TEACHING PHILOSOPHY AND MEDICAL HUMANITIES
My teaching philosophy is driven by the recognition that “The student of today is the teacher of tomorrow.” Implicit in this statement is our responsibility to nurture students to develop not only self directed learning and critical thinking skills but also a spirit of inquisitiveness and the courage to challenge scientific and medical dogma.

I am delighted that the Li Ka Shing Faculty of Medicine will be introducing medical humanities as part of the core curriculum for medical students from 2012. The practice of medicine, a science as well as an art, will require students to understand the limits of medicine, the nature of human suffering and the dangers of the medicalisation of life in terms of its social, ethical and economic impact.

Through the teaching and learning of medical humanities, students can generate new inquiries and reflections which will enable them to understand illness and health in the wider context of the lives of people. They should become aware of the complexities and ambiguities of issues involved in medical care and practice; and explore the nature of suffering & healing so as to enable patients to live a life of meaning despite their illness.

AWARDS AND HONORS
- Faculty Teaching Medal 2006
- Outstanding Teaching Award 2009, The University of Hong Kong
- Ron Harden Innovation in Medical Education Award, 7th International Medical Conference, International Medical University, Kuala Lumpur in March 2010 (based on a medical humanities special study module developed by Julie Chen, LC Chan and DJ Salter)

SELECTED PUBLICATIONS
Research:


- Sun Q, Kong CT, Huang FP, CHAN LC. Aberrant dendritic cell differentiation initiated by the Mll-Een fusion gene does not require leukemic transformation. J Leukoc Biol 2008.

- Kong CT, Sham MH, So CWE, Cheah KSE, Chen SJ, CHAN LC. The Mll-Een knock-in fusion gene enhances proliferation of myeloid progenitors derived from mouse embryonic stem cells and causes myeloid leukemia in chimeric mice. Leukemia 2006.


Teaching:
- CHAN LC, Beh PSL, Yip ALM. Young Chinese medical students adapt well to problem-based learning. Medical Teacher 2011, 33:506
- Chen JY, Salter DJ, CHAN LC. Pen, brush and camera: outcomes-based medical humanities. Medical Education 2010, 44:1139.
- CHAN LC. The role of a PBL tutor: A personal perspective. 2007 International Problem-Based Learning Workshop, Kaohsiung Medical University, Taiwan. Kaohsiung Journal of Medical Sciences 2008.
To better women’s health

CHEUNG Nga-yin Annie

EDUCATION
- Chairman, Faculty Teaching and Quality Committee
- Professor FHKAM (Pathology)
- FHKCPath
- FRCPath
- PhD (HK)
- MD (HK)
- MBBS (HK)

RESEARCH
Studies on gynaecological cancers
- Genetic and epigenetic mechanisms in endometrial and ovarian carcinogenesis
- Application of novel technical platforms including HPV assays in cervical cytology for cervical cancer screening
- Role of stem cells in gynaecological cancers
- Molecular signaling in gynaecological cancers

Studies on Gestational Trophoblastic Diseases (GTD) including hydatidiform mole and choriocarcinoma
- Epigenetic and Molecular cytogenetic studies in GTD
- Proliferative and apoptotic activities in GTD
- Molecular signaling and cell biological studies in GTD
- Role of stem cells in GTD

RESEARCH FUND
- RGC - Competitive Earmarked Research Grants
  - Akt and p21-activated kinase signaling pathways in gestational trophoblastic disease (2006)
  - AOE grant on Centre for Research into Circulating Fetal Nucleic Acids (CUHK/HKU) (2007, Co-investigator)
  - FPI-1 (Pokemon) in Gestational Trophoblastic Disease (2011)

- SK Yee Foundation
  - HPV detection as an adjunct for triage of atypical cervical cytology in screening for cervical cancer (2009, 2011)

- Research Fund for the Control of Infections Diseases & Health and Health Services Research Fund
  - Integrated Human Papilloma Virus Analysis as Adjunct for Triage of Atypical Cervical Cytology (2007)

CLINICAL SERVICES
- Pathologist in charge, Cervical Cytology Screening Laboratory, The University of Hong Kong
- Director (Molecular Pathology), University Pathology Laboratory, The University of Hong Kong

COMMUNITY SERVICES
- Vice-President, Hong Kong College of Pathologists
- Chairman, Training and Examination Committee, Hong Kong College of Pathologists
- Medical Consultant, International Academy of Cytology

AWARDS AND HONORS
- Best Teachers Award (Medical Society, H.K.U.S.U.) (1996)
- Faculty Teaching Medal (2002)
- University Teaching Fellow (2005)
- Award for Innovative Excellence in Teaching, Learning & Technology in 17th International Conference on College Teaching and Learning (2008)

SELECTED PUBLICATIONS
Molecular genetics and genomics of breast cancer

KHOO Ui-soon

EDUCATION
- MBBS Year II - Program Director
- MBBS Urogenital System Block - System Coordinator
- Chairman of the Special Focus Group ‘Genetics and its clinical applications’; LKS Faculty of Medicine
- Course Coordinator for the Postgraduate Diploma in Molecular and Diagnostic Pathology

RESEARCH
Breast Cancer
- BRCA1 and BRCA2 genes - mutations in Chinese; epigenetics; functional variants
- Genetic association studies for breast cancer in the Chinese population
- Alternatively spliced variants in Chinese breast cancer
- Molecular biology studies on the mechanisms leading to the development of endocrine- and chemo-resistance in breast cancer

RESEARCH GRANTS
RGC - Competitive Earmarked Research Grants
- Gene-based and haplotype analysis of the estrogen receptor genes for breast cancer susceptibility
- The role of L-SIGN (CD290L) in SARS coronavirus infection
- Splicing variant profiling in relation to Estrogen Receptor gene expression in Chinese breast cancer

COMMUNITY SERVICE
- President, Hong Kong Society of Cytology (2009, 2010)
- Hon Treasurer, Hong Kong Museum of Medical Sciences (2008-2011)
- SK Yee Medical Foundation project to provide HER2 FISH test for breast cancer patients requiring financial assistance

AWARDS AND HONORS
Faculty Teaching Medal, The University of Hong Kong (2007)

SELECTED PUBLICATIONS
Department of Pathology

Chemical Pathology, Metabolomics, and Personalized Medicine

LAM Ching-wan

MBChB
PhD
MAACB
FAACB
FRCP
FHKCPath
FHKAM (Pathology)
FFSc (RCPA)
DABOT

Professor

Education

• Chairman, Task Force in Chemical Pathology teaching of the MBBS curriculum, Faculty of Medicine, The University of Hong Kong
• Committee member, Committee for MSc in the field of Food Safety and Toxicology, Faculty of Science, The University of Hong Kong

Research

• Molecular basis of inherited human diseases through the identification of disease-causing genes, the elucidation of the mutation spectrums, and establishment of diagnostic protocols for Chinese populations worldwide
• Clinical Metabolomics and Personalized Medicine
• Toxic Exposure Surveillance and Biomonitoring

Editorship

• Associate Editor, Clinica Chimica Acta
• Editorial Board, Journal of Chinese Clinical Medicine

Research Grants

RGC – General Research Funding
Research Fund for the Control of Infectious Diseases Commissioned Study 2009-2014-Phase 2-Part A1-Bacterial, fungal and antimicrobial resistant diseases
Theme-based Research Grant on Personalized Medicine for Cardiovascular Diseases: From Genomic Testing and Biomarkers to Human Pluripotent Stem Cell Platform, 2011-2015

Awards and Honors

• Examination Prize, MAACB (1994)
• Most Outstanding Teacher Award, CUHK (1997/98)
• Fellowship, The Croucher Foundation (1999)
• Best oral presentation award, AACB (2005)

Selected Publications


Molecular genetics and genomics of gastrointestinal tract cancer

LEUNG Suet-yi

RESEARCH

My research interests are focused on the molecular genetics and genomics of gastric and colorectal cancers. We have performed genomics studies on large series of gastric and colorectal cancers using microarray, DNA SNP chip and next-generation sequencing. The studies have revealed the diversity of gene expression reflecting intrinsic properties of tumour and normal cells, tumour-stroma interaction, host immune response and pathways of stem cell regulation. This information has led to the identification of new tumour suppressor genes frequently mutated or silenced in gastrointestinal cancers, genes that can modify tumour aggressive behaviour and patient outcome, and genes that contribute to maintenance of stem cell niche.

Our team has extensively characterized the genetic basis for the exceptionally high incidence of early-onset colorectal cancer (CRC) in Hong Kong. We have uncovered the mutation spectrum of germline DNA mismatch repair gene, and revealed a founder mutation that is common in the Southern Chinese population which originated between 22 and 103 generations ago. We have described the first example of heritable germline methylation of MSH2 gene promoter as a cause of hereditary colon cancer, and uncovered a novel mechanism of methylation induction and gene silencing through abrogation of transcriptional termination signal in an upstream neighbouring gene. These data have enabled our laboratory to formulate a rational strategy for genetic testing, management and prophylactic screening of early-onset colorectal cancer patients and their family. We have also studied in depth the role of the BRAF mutation in colorectal cancers, and discovered an interesting relationship between the BRAF mutation and various pathways of colorectal carcinogenesis.

The long term goal of our laboratory is to utilize genomics technology to identify novel pathways of carcinogenesis and hereditary predisposition for colorectal and gastric cancers, and to identify biomarkers for early detection, patient stratification, prognostication or drug targets.

RESEARCH GRANTS

- Hong Kong Cancer Fund

AWARDS AND HONORS

- Croucher Senior Medical Research Fellowship (2007)
- Outstanding Research Award, The University of Hong Kong (2007)
- Research Output Prize, The University of Hong Kong (2007 and 2009)
- Outstanding Young Researcher Award, The University of Hong Kong (2001)

SELECTED PUBLICATIONS

- Leung SY, Yuen ST, Chung LP, Chu KM, Chan ASY and Ho JCI. HMLH1 promoter methylation and lack of hMLH1 expression in sporadic gastric carcinomas with high-frequency microsatellite instability. Cancer Res 1999, 59:159-164.
**RESEARCH**

Liver cancer - molecular genetics and cell signaling:
- Finding and characterizing new genes and microRNA
- Delineation of important cell signaling pathways

In studying the molecular and cellular mechanisms in liver cancer, my laboratory focuses on identifying new and important genes and microRNAs, characterizing novel genes and molecular targets, and understanding how aberrant cell signaling drives liver cancer formation. Genetic and epigenetic alterations exert their influence by altering cell signaling pathways. We are currently characterizing critical oncogenic signaling pathways in liver cancer, including DLC1/RhoROCK, Wnt/β-catenin, and PTEN/Akt/mTOR, and investigating the cooperation and crosstalk of these pathways with other critical genes and pathways. We are currently investigating the molecular mechanisms leading to liver cancer metastasis. We aim to identify the key molecules that govern cell motility and invasion of cancer cells and the tumor microenvironment that enhances metastasis.

With molecular profiling and genome-wide association study, we have established useful databases in liver cancer and for delineation of genetic susceptibility to liver cancer. We are using next generation sequencing to look for novel liver cancer-related genes involved in the disease’s development, biological mechanism and metastasis.

**RESEARCH GRANTS**

- RGC Collaborative Research Fund on liver cancer (2007 & 2010)
- Innovation & Technology Fund on liver cancer (2011)
- NSFC/RGC Joint Research Grant on liver cancer (2002 and 2006)
- Research Fund for the Control of Infectious Diseases (RFCD) on HBV and liver cancer (2006)
- Michael and Betty Kadoorie Cancer Genetics Research Program on liver cancer (2 grants in 2004)
- Association for International Cancer Research Grant on liver cancer (2003)

**AWARDS AND HONORS**

- Director, State Key Laboratory for Liver Research
- Loke Yew Endowed Professorship in Pathology
- Outstanding Research Student Supervisor Award 2007-08, HKU
- Croucher Senior Medical Research Fellowship 2005-06
- Outstanding Researcher Award 2005, HKU
- Croucher Foundation awards to organize Advanced Study Institute on “Molecular genetics & cell signaling in cancers” (2005) and “Molecular genetics & cell signaling in cancer and cancer metastasis” (2006), as Director

**SELECTED PUBLICATIONS**

- Chan DW, Chan CY, Yam JWP, Ching YP, Ng IOL. Prickle-1 promotes degradation of Dishevelled by ubiquitination in liver cancer. *Gastroenterology* 2006, 131:1218-27.
How do viruses interact with cells? What can we do to enhance student learning?

John Malcolm NICHOLLS

DEPARTMENT OF PATHOLOGY

EDUCATION

• Pathology discipline coordinator, MBBS Years 3-5
• Professional Development, IMHSE
• Assessment Subcommittee Chairman

RESEARCH

Viruses are involved in a number of infectious and neoplastic diseases of the respiratory tract in humans. I have been investigating what role the Epstein-Barr virus plays in nasopharyngeal carcinoma (NPC), and in particular two of the viruses proteins (LMP1 and BARF1) which have been implicated in the development of NPC. In particular I have been looking at whether there is “good” or “bad” LMP or BARF1 and how these proteins differ in NPCs from different geographical regions. This work involves collaboration with EBV experts from Europe and North America. I have also collaborated with researchers from the Queensland Institute of Medical Research to exploit the expression of these viral proteins using a novel CTL based immunotherapy approach for NPC patients which has finished a Phase I clinical trial.

In addition I have worked closely with colleagues from the Department of Microbiology in investigating why certain new and emerging viruses such as SARS and H5N1 appear to be so lethal in humans. Is it because they are attacking cells which are not normally attacked by viruses? Is it because they are triggering cells to release too many cytokines, or is it because they are interacting with cell receptors which are not normally expressed in normal conditions? Whatever the results, the main aim of my research is to put a clinical perspective on reducing the damage caused by viruses in the human and investigating what factors determine which cells may be bound by particular influenza viruses.

AWARDS AND HONORS

• University Teaching Fellowship (1997-98)
• Croucher Senior Medical Fellowship 2009-10
• Faculty Outstanding Research Output Award 2008

SELECTED PUBLICATIONS

• Nicholls JM, Chan, RWY; Russell, RJ; Air, GM; Peiris, JSM. Evolving complexities of influenza virus and its receptors. Trends in Microbiology 2008, 16 (4): 149-157.
Molecular Targeting of Malignant Lymphoma

Gopesh SRIVASTAVA

RESEARCH

The main focus of my group current research is aimed at better understanding of the molecular pathogenesis of (1) NK-cell neoplasms and (2) gastric B-cell lymphoma; with the overall aim to find better molecular diagnostic and prognostic biomarkers, and novel therapeutic targets for these lymphoid malignancies.

NK-cell neoplasms consist of two separate entities: aggressive NK-cell leukemia (ANKL) and extranodal NK-cell lymphoma, nasal type (ENKL). Both of them are aggressive diseases with poor survival. We have previously reported constitutively active nuclear factor-kB signaling in ENKL, and this finding has given us a promising lead for NK-cell neoplasm treatment. Bortezomib, the proteasome inhibitor, targets nuclear factor-kB activation and can be used to treat multiple myeloma and mantle-cell lymphoma patients. We have recently shown that bortezomib also has anticancer activity against ANKL and ENKL. Our results from both in vitro cytotoxic assay and in vivo animal model give substantial support for planning a high priority clinical trial.

Gastric B-cell lymphoma is the most common extranodal lymphoma in Hong Kong Chinese. Many subtypes of B-cell non-Hodgkin’s lymphomas are associated with specific chromosomal translocations, which may play a pivotal role in the pathogenesis of disease. In lymphomas of mature B-cells, these translocations frequently involve the immunoglobulin (IG) loci and are usually caused by errors in two developmentally regulated DNA recombination processes: V(D)J and switch recombination. We are currently in the process of cloning the known and novel genes which are targets of IG translocations in gastric lymphoma, and characterizing these novel IG translocation partner genes for their biological function to evaluate their role in the pathogenesis of B-cell malignancies. Detection of both known and novel IG-related translocations has a diagnostic utility− can be used to monitor the clinical course of the disease and might help us to identify new potential oncogenes involved in the pathogenesis of gastric lymphoma.

RESEARCH GRANTS

Recent RGC/GRF research grants received:

- Molecular features and functional consequences of a novel recurrent t(14;20)(q32;q13.12)/IGHSμ-PRKCBP1 translocation in gastric lymphoma (2011)
- Imbalance in the expression of PRDM1 α and β isoforms in NK-cell malignancies (2009)
- Genetic and epigenetic mechanisms of the silencing of a 6q22.33-q23.2 putative tumour suppressor PTPRK gene in NK-cell neoplasms (2007)
- Therapeutic potential of proteasome inhibitor bortezomib in NK-cell neoplasms (2006)
- Molecular mechanisms of the aberrant nuclear BCL10 expression and constitutive NF-kB activation in NK-cell neoplasms (2005)

SELECTED PUBLICATIONS

Giving a voice to the dead and the injured - forensic medicine

BEH Swan-lip Philip

RESEARCH
Current research has focused on the development and maintenance of a Hong Kong Homicide Monitoring Database. The data collected in this ongoing project is proving to be important for research into the many different types of homicides. A successful example of its utilization has been the study report on Homicide-Suicide in Hong Kong, a comprehensive description and analysis of the many aspects of the tragic circumstances that lead to homicide-suicides in Hong Kong. Other examples include a study that associates injuries on victims of homicides with the victim-offender relationship and post-killing behavior of offenders correlated their relationship with the victim and other offender attributes. Studies into many other areas are on-going. The other area of expertise and study has been the issues surrounding sexual assaults in Hong Kong. Studies on prevalence, and victim and offender characteristics have been published, as well as a recent study on attrition rates. Continuous advocacy for the improvement of services to these victims and studies to fill gaps in current knowledge are being pursued.

An emerging area of interest is that of exploring the reasons for a decline in autopsies; even in medicolegal cases. Attempts are made to explore the attitudes of the key players: Coroners, pathologists, police officers, next-of-kin as well as those of the general public and assessing their impact on the likelihood of an autopsy.

Cooperation with colleagues in the HK Jockey Club Centre for Research and Prevention of Suicides have led to some publications looking at the impact of suicide on survivors and the identification of needs for bereavement services for survivors of suicides as well as for those of other forms of sudden deaths. Forensic pathology and clinical forensic medicine is a rich field for applied research and continuous efforts are made to collaborate with and support colleagues with a common interest.

AWARDS AND HONORS
• Member of Editorial Board of Forensic Science International. 2011-13
• Member of International Editorial Board Medicine & Law 2009-2010
• Member of Scientific Advisory Committee. International Academy of Legal Medicine 2009-2011
• President Hong Kong Forensic Science Society 2009-1010
• President – World Police Medical Officers 2009-2008
• President-elect Hong Kong Forensic Science Society 2006-2008
• Chief Examiner (Forensic Pathology) – Hong Kong College of Pathologists 2006-2010
• Vice-President – International Association of Forensic Sciences 2002-2005
• Faculty Teaching Medal – Faculty of Medicine, HKU 2003
• SEDA Accredited Teacher in Higher Education
• Co-Investigator in RGC Grant on Homicide in Three Chinese Cities
• Co-Investigator in Lotteries Fund Study Grant on Homicide-Suicide in Hong Kong
• Associate Editor, Journal of Clinical Forensic Medicine
• Editorial Advisory Board Member, Encyclopedia of Forensic and Legal Medicine (Elsevier) (2005)

SELECTED PUBLICATIONS
• Book Chapters in:-
  • Current Practice in Forensic Medicine ISBN 978-0-470-74487-1
• Chan ACY, Beh PSL and Broadhurst RG. To Flee or Not: Postkilling Responses Among Intimate Partner Homicide Offenders in Hong Kong. Homicide Studies 2010, 14(4) 400-418.
• Wong PWC., Chan WSC. and Beh SL. What can we do to help and understand survivors of suicide in Hong Kong? Crisis 2007, 28
• Beh SL. In Hong Kong teaching autopsies have been championed in public mortuaries. Letters to Editor. BMJ 17 Jan 2004, 328:168.
**Prostatic cancer, cancer stem cell and renal pathology**

**CHAN Kwok-wah**

MBBS (HK)  
FRCPath  
FHKCPath  
FHKAM (Pathology)

**Associate Professor**

**EDUCATION**

Department Co-ordinator  
• MMedSc  
• BDS  
• BChinMed  

Module Co-ordinator  
• Endocrine System, MBBS  
• Urogenital, MBBS

**RESEARCH**

• Molecular genetics of prostatic cancer  
• Study of cancer stem cell biology in collaboration with Department of Clinical Oncology  
• The effects of new immunosuppressants on kidney functions and treatment of lupus nephritis using an animal model of lupus nephritis, in collaboration with Department of Medicine  
• Molecular genetics of esophageal cancer in collaboration with Departments of Anatomy, Surgery, and Clinical Oncology

**RESEARCH GRANTS**

RGC - Competitive Earmarked Research Grants  
• Growth and functions of human kidney tubular cells and transgenic mouse kidneys affected by mutated adult polycystic kidney disease gene, PKD1 (1998)  

Sir Michael and Lady Kadoorie Funded Research into Cancer Genetics  
• Identification, Characterization and Therapeutic Targeting of Turnourigenic Liver Cancer Stem Cells (2007)

RGC – General Research Fund  
• The role of interleukin-8 (IL-8) and efficacy of IL-8 targeted therapy in CD133+ cancer stem cells-driven hepatocellular carcinoma (2011)

**SELECTED PUBLICATIONS**


Lymphocyte development and its dysregulation in immune disease

LU Li-wei

Associate Professor

RESEARCH
My research has been focusing on lymphocyte development and its dysregulation in autoimmune diseases. Studies in normal and mutant mice have aimed to examine lymphocyte apoptosis and its role in maintaining quality control and homeostasis in the immune system. We are also interested in studying the dysregulated cytokine production and lymphocyte function during the pathogenesis of autoimmune disorders. Further knowledge of the regulatory mechanisms underlying lymphocyte development and function should shed light on the prophylaxis and therapy of immune diseases.

Research Interest
- Identification of genes involved in regulating lymphocyte development and function
- Regulation of lymphocyte apoptosis in quality control and homeostatic regulation
- Gene silencing of novel TNF family cytokines for treating autoimmune disease

RESEARCH GRANTS
RGC - Competitive Earmarked Research Grants
- Role of leptin in regulating B cell function
- Plasma cell and its regulation in autoimmunity
- Natural killer cells and autoimmunity
- B cell apoptosis and its regulation in autoimmunity

Innovation and Technology Support Programme
- Innovative development of a gene-targeted therapy for rheumatoid arthritis

National Science Foundation of China and Research Grants Council of Hong Kong Joint Research Scheme
- Regulation of dendritic cell function and its therapeutic application in autoimmune diabetes
- Functional interaction between dendritic cells and B cells in autoimmunity

National Key Basic Research Program of China
- Role of antigen-presenting cells in immune response and tolerance

AWARDS AND HONORS
- Croucher Senior Research Fellowship Award (2012)
- David Rae Memorial Award, Leukemia Research Fund of Canada (2000)
- Young Investigator Award, Hong Kong Society for Immunology (2003)
- Faculty Teaching Medal, Faculty of Medicine, The University of Hong Kong (2008)
- Chairman, Hong Kong Society for Immunology (2008-)

SELECTED PUBLICATIONS
- (featured as Research Highlight in Nature Reviews Rheumatology, 5:62,2009)
Diagnostic Haematology and Red Cell Disorders

SO Chi-chiu Jason

Associate Professor

RESEARCH

I am interested in various fields of diagnostic haematopathology including peripheral blood and bone marrow morphology, immunophenotyping, haemoglobin study, coagulation and blood banking. My current research interests are on genetics of thalassaemia and its phenotypic modulation, and genetic basis of other inherited and acquired red cell disorders.

AWARDS AND HONOURS

Fellowship, Ho Hung Chiu Education Foundation 2003

SELECTED PUBLICATIONS

RESEARCH

Our research focuses on the molecular genetics and carcinogenic mechanisms of human lung cancers. Lung cancer is common and the most lethal of all cancers in HK for both genders. Incidence and mortality are similar to Western countries, with >85% chronic smokers. For women, the incidence is similar to the West, only 10%-25% smoke. The mechanisms of this unusual epidemiology are not fully understood. Genetic factors could play a role since lung cancer is also common in female non-smokers in other populations of Chinese ancestry. Environmental factors such as passive smoking, genotoxic cooking oil or fossil fuel vapors have also been implicated but evidences are inconclusive.

Through our studies, we hope to achieve a better understanding of lung cancer biology, to improve tumour diagnosis, prognostication and to contribute to cancer therapy.

Current research themes:

- Cancer stem cells in lung cancer. The cancer stem cell theory has been shown to hold true for certain leukaemias and solid cancers, but its role in lung cancer is unclear. Our studies aim at understanding the roles of lung cancer stem cells in tumour progression and developing cancer stem cell-targeting strategies.
- Molecular genetics of lung cancer. We have found somatic activating mutations in EGFR occur in >70% of non-smokers and around 20% of smokers. ALK fusion genes such as EML4-ALK occur in about 5% of tumours. These mutations render the tumours responsive to specific anti-EGFR or anti-ALK molecular targeted therapy but drug resistance soon develops. Our research aims to study the genetic and non-genetic mechanisms of drug resistance based on clinical cancer samples and experimental models.
- Candidate cancer genes in lung cancers. Potential cancer-related genes are identified through integrative analysis of genomic and expression arrays. Candidate genes are selected based on putative roles in cell proliferation, survival, tumour-host interaction, angiogenesis and other tissue remodeling functions.

SELECTED PUBLICATIONS

- Wong DW, Leung EL, So, KK, Tam IY, Sihoe AD, Cheng LC, Ho KK, Au JS, Chung LP and Wong MP. The EML4-ALK fusion gene is involved in various histologic types of lung cancers from nonsmokers with wild-type EGFR and KRAS. Cancer 2009, 115(8):1723-33.
Molecular Genetics of Colorectal Cancer

CHAN Tsun-leung Chris

**RESEARCH**

My main research interests are in the epidemiology, molecular genetics and epigenetics of colorectal cancer (CRC). My research focuses on the genetic factors affecting the development of early-onset CRC. My group has successfully performed a series of studies to illustrate the role of DNA mismatch repair genes and their association with the high frequency of early-onset CRC in the local population. Protocols have been developed for the genetic diagnosis of a variety of familial CRC syndromes, including hereditary non-polyposis colorectal cancer (HNPCC) and familial adenomatous polyposis (FAP), etc. Hundreds of at-risk families are included in the studies and have been genetically screened following such protocols at the Hereditary Gastrointestinal Cancer Genetic Diagnosis Laboratory established and conducted by our research team in Queen Mary Hospital. We have also characterized the mutation spectrum of DNA mismatch repair genes prevalent in Hong Kong, which constitutes the first and the most comprehensive data available for the Chinese population to date. Furthermore, we have recently obtained evidence to demonstrate the contribution of founder mutations to a quarter of the germline mutations present amongst the patients under study.

In addition, we have identified the first case of heritable methylation of the MSH2 promoter in the world in a family affected by Lynch Syndrome. A mosaic methylation pattern and disease haplotype were cosegregated with a specific chromosome across three consecutive generations. Further analysis revealed that a deletion event involving the removal of the polyadenylation site proximal to the disease gene could elicit the generation of an aberrant transcript though active transcription of the upstream gene, which is followed by promoter methylation thus silencing of the disease gene. Such novel mechanism has recently been published jointly with our collaborator in the Netherlands and has subsequently been demonstrated to affect over 100 families who were diagnosed with unknown pathogenicity. Our findings open up new potential for the therapeutic control of genetic disease in human.

**AWARDS AND HONORS**

- Outstanding Young Researcher Awards, The University of Hong Kong, 2008
- Research Output Prize, The University of Hong Kong, 2007 and 2009
- AACR-ITO EN Scholar-in-Training Award from the American Association for Cancer Research 95th Annual Meeting, Florida U.S.A, 2004

**SELECTED PUBLICATIONS**


**MSH2 Founder Mutation in Chinese**
Haematological malignancies

CHOI Wai-lap William

RESEARCH

I am an American board-certified haematopathologist who has cultivated an interest in translational research of haematological malignancies during his haematopathology fellowship. To this end, I have developed a new immunohistochemical algorithm, which aims at accurately approximating the gene expression profiling classification of diffuse large B-cell lymphoma (DLBCL) into the prognostically significant germinal centre-B-cell-like (GCB) and activated B-cell-like (ABC) subgroups. This new algorithm will enhance future research on DLBCL when only paraffin-embedded tissue is available to the investigators.

Most recently, my team is attempting to unravel the role of different FOXP1 isoforms in the pathogenesis of gastric and nodal DLBCL. FOXP1 is highly expressed in the ABC subgroup of DLBCL and is associated with a poor prognosis. Recent studies showed that N-terminally truncated short isoforms of FOXP1 are highly expressed in the ABC-DLBCL cell lines, but not the GCB-DLBCL cell lines, suggesting that these isoforms may be implicated in the pathogenesis. My team has also determined the isoform expression pattern of the FOXP1 isoforms in gastric DLBCL and nodal DLBCL cell lines. Further experiments are under way to find out the specific molecular mechanisms of these smaller FOXP1 isoforms.

SELECTED PUBLICATIONS

I joined the Department of Pathology in February 2012 as a Clinical Assistant Professor. My main duties include undergraduate teaching in Chemical Pathology for medical students and pharmacy students in the University, and serving as a duty biochemist in the Department of Pathology and Clinical Biochemistry, Queen Mary Hospital.

SELECTED PUBLICATIONS

• Niu H, Leung DT, Ma CH, Law EC, Tam FC, Lim PL. Cells that produce deleterious autoreactive antibodies are vulnerable to suicide. The Journal of Immunology 2008, 181: 2246-57.

My current research interests focus on:

• Identification of molecular targets in tumorigenesis and tumor progression of HCC
• Elucidation of cellular signaling pathways in HCC

SELECTED PUBLICATIONS


My current research interests focus on:

• Identification of molecular targets in tumorigenesis and tumor progression of HCC
• Elucidation of cellular signaling pathways in HCC

SELECTED PUBLICATIONS

Molecular pathogenesis and therapeutic targeting of hepatocellular carcinoma (HCC)

LEE Kin-Wah Terence

RESEARCH
My current research work focuses on:

- Molecular mechanism of HCC development and metastasis
- Characterization and therapeutic targeting of liver cancer stem cells
- Investigation of novel natural compounds for HCC cancer therapy

EDITORSHIP
- PLoS One – Academic editor
- American Journal of Stem Cell Research – Academic editor

RESEARCH GRANTS
- RGC – General Research Fund (2011) (PI)
- CRF – Collaborative Research Fund (2009) (Co-I)

AWARDS AND HONORS
- Hong Kong Young Scientist Award (Life Sciences), Hong Kong Institution of Science (2006)
- Young Investigator Award, Hong Kong – Shanghai International Liver Congress (2006)
- Li Ka Shing Prize for the best MPhil Thesis, the University of Hong Kong (2000)

SELECTED PUBLICATIONS

**Epigenetic regulation in Stem Cells**

**NG Kit Ray**

**BSc**  
**MPhil (CUHK)**  
**PhD (Cantab)**  
**Assistant Professor**

**RESEARCH**

Stem cell research provides new insights into the area of regenerative medicine. My research focuses on the epigenetic mechanisms, e.g. DNA methylation and histone modifications, involved in the cellular properties (self-renewal and differentiation) of embryonic and adult stem cells. We are particularly interested in the differentiation of stem cells into haematopoietic and placental cell lineages, which opens up new strategies to generate essential cell types for clinical applications.

Another research focus is on the aberrant epigenetics in human leukaemia. Leukaemia is a cancer with dysregulation of normal haematopoiesis by a primitive population of blast cells in bone marrow. The discovery of leukaemic stem cell (LSC) reveals its critical role in initiating and sustaining clonal proliferation of blast cells in leukaemia patients. We therefore aim to delineate the dysregulated epigenetic mechanism in the generation of LSC, which helps us to develop an effective therapeutic strategy to leukaemias.

**RESEARCH GRANTS**

**RGC General Research Fund**

- Role of Sirt1 in generation of mouse induced pluripotent stem cells (2011) (Co-Investigator)
- The functional roles of histone H3K9 demethylase Jmjd2 family in determination of trophoblast lineages (2010)
- Genome-wide analysis of DNA methylation patterns in MLL-rearranged leukaemia stem cells (2009)

**Seed Funding Programme for Basic Research**

- The functional role of Bmi-1 in self-renewal of haematopoietic stem cell (2010)
- The role of Jarid1 histone demethylases in the development of haematopoietic stem cell (2009)
- Leukaemogenic potential of *ex vivo* expanded cord blood haematopoietic stem cells by epigenetic modifying agents (2009) (Co-Investigator)

**SELECTED PUBLICATIONS**

- Ng RK, Gurdon JB. Epigenetic memory of active gene transcription is inherited through somatic cell nuclear transfer. *Proc Natl Acad Sci USA* 2005, 102(6):1957-1962.
Cancer epigenetics and molecular pathogenesis of liver cancer

WONG Chun-ming Jack

Assistant Professor

BSc (HK) MMedSc (HK) PhD (HK)

RESEARCH

- Epigenetic alterations in liver cancer
- MicroRNA deregulation in liver cancer
- Mechanisms of epigenetic gene regulation
- Epigenetic-miRNA regulatory circuitry

Liver cancer (hepatocellular carcinoma, HCC) is one of the most common malignancies worldwide and is particularly prevalent in Asia. Liver cancer is an aggressive cancer associated with a poor prognosis that is often due to late presentation of symptoms and frequent tumor metastasis. However, the molecular mechanisms underlying hepatocarcinogenesis are unclear. In addition to genetic alterations, recent evidences have indicated that epigenetic abnormalities also play a very important role in hepatocarcinogenesis. Epigenetic, as implied by the Greek prefix, Epi- (means “in addition to”), refers to an additional regulatory layer on top of genetic information stored in DNA sequence. DNA methylation and histone modifications are two major epigenetic events that work very closely in regulating chromatin structure and gene expression pattern. We and others have previously shown that epigenetic alterations play a crucial role in silencing tumor suppressor genes in human cancers. We are interested to elucidate the molecular basis and pathological roles of various epigenetic alterations in human HCC. MicroRNA is a class of small non-coding RNA profoundly involved in post-transcriptional gene regulation and recently implicated in human carcinogenesis. We are also interested to study the expression profiles, epigenetic alterations and molecular functions of microRNAs and their roles in liver cancer development and metastasis. Our recent studies particularly focus on delineating the interplay between miRNA and epigenetic machinery and how deregulation of this epigenetic-miRNA regulatory circuit implicated in liver cancer progression and metastasis. We believe that a better knowledge of the underlying molecular mechanisms of hepatocarcinogenesis and cancer metastasis is of crucial importance for the development of new diagnostic tools and therapeutic interventions for this lethal cancer.

EDITORSHIP

PLoS ONE (Academic editor)

RESEARCH GRANTS

- Research Grant Council- General Research Fund (2008-P1, 2011-P1)
- Research Grant Council-Collaborative Research Fund (2010-Col)

SELECTED PUBLICATIONS

Molecular biology in human cancers

YAM Wai-plng Judy

Assistant Professor

RESEARCH

Our research interest focuses on the characterization of tumor suppressors and oncogenes and elucidation of associated cellular signaling pathways which contribute to the pathogenesis of liver cancers. We have particular interest in focal adhesion proteins which form structural links between extracellular matrix and actin cytoskeleton, and are important sites of signal transduction. A number of diverse focal contact proteins are interconnected at the focal adhesions. Dysregulation of focal adhesion proteins has been implicated in various cancers and contributed to the acquired metastatic behavior of cancer cells. We believe a better understanding of the functional effects of focal adhesion proteins in the aggressive phenotypes of cancer cells will have profound implications for the diagnosis and therapeutic interventions for liver cancer.

RESEARCH GRANTS

RGC - General Research Fund

- Interplay of caveolin-1 and Met receptor in liver cancer metastasis
- Nucleocytoplasmic shuttling mechanism of DLC1 tumor suppressor in liver cancer
- Characterization of tensin2, the binding partner of DLC1 tumor suppressor in liver cancer

AWARDS AND HONORS

- Outstanding Young Researcher Award 2010, HKU

SELECTED PUBLICATIONS

- Yam JWP, Wong CM, Ng IOL. Molecular and functional genetics of hepatocellular carcinoma. Frontiers in Bioscience (Schol Ed) 2010, 2:117-134.
- Yam JWP, Jin DY, SO CW, Chan LC. Identification and characterization of EBP, a novel EEN binding protein that inhibits Ras signaling and is recruited into the nucleus by the MLL-EEN fusion protein. Blood 2004, 103:1445-1453.
Cancer stem cells / molecular pathogenesis of liver, prostate and esophageal cancers

MA Kwai-yee Stephanie

Research Assistant Professor

BSc (Canada)  
MSc (Canada)  
PhD (HK)

RESEARCH
My current research work focuses on:
• Identification and characterization of liver cancer stem cells / tumor-initiating cells
• Role of microRNAs in the development and progression of liver and prostate cancers
• Identification of novel oncogenes and tumor suppressor genes involved in liver, prostate and esophageal cancers

RESEARCH GRANTS
• RGC - Collaborative Research Fund (2011) (Co-I)
• RGC – General Research Fund (2011) (Co-I)
• Seed Funding for Basic Research (2009, 2010) (PI)

AWARDS AND HONORS
• Faculty Outstanding Research Output Award, HKU (2011)
• Hong Kong Young Scientist Award (Life Sciences), Hong Kong Institution of Science (2008)
• Li Ka Shing Prize for the Best Ph.D. Thesis, HKU (2006-2007)
• International Society for Stem Cell Research (ISSCR) Travel Award (2007)
• Outstanding Young Scientist Travel Award, National Institute of Health (2001)

SELECTED PUBLICATIONS
• Ma S, Guan XY. miRegulators in cancer stem cells of solid tumors. Cell Cycle 2011; 10: 571-2. (invited article)
• Lee TK, Castilho A, Cheung VC, Tang KH, Ma S. Ng IO. Lupeol targets liver tumor initiating cells through PTEN modulation. Hepatology 2011, 53: 160-70.
Students learn pathology from diverse formats - Pathology leads the way

To make room for student directed learning in the first curriculum reform of 1997, all disciplines that were taught in the first three years were required to reduce lecture content by about 25%. In view of the fact that our department’s pathology teaching was divided into core and special topics which were optional, the core material became the basis for the lectures in the first 2 years of the curriculum. Students are still taught the principles of pathology as well as basic systems based pathology.

We also recognized that instead of relying on teaching per se, the emphasis should be on enhancement of learning of pathology and from diverse formats – lectures, practicals, computer assisted learning sessions, laboratory visits, structured displays, PBL tutorials (see below). We ensured lectures (large group teaching) and practicals had key learning objectives so that students would not only grasp key concepts but would be able to apply them in understanding the pathogenesis of diseases and approaches to diagnoses. We designed these learning sessions to be as interactive as possible with students doing much of the questioning and clarification. Increasingly, practicals are “cased based” and students explore gross and histopathological changes in the context of clinical signs and symptoms.

The Department of Pathology has many teachers holding positions of leadership in undergraduate medical education who have played key and pivotal roles in the design and implementation of the new curriculum, particularly in the design of new tutorial cases in every module and in the introduction to health and disease blocks. As medically qualified graduates we are in a key position to see the overall picture of pathological science in the curriculum and work with basic science faculty to translate this into meaningful cases as well as the importance of diagnostic laboratory medicine in clinical practice. As part of professional development, members of our department have also attended overseas medical education courses and have been recognized as excellent teachers by awards of Faculty as well as University Teaching Fellows.

What improvements did we make to the final years of the curriculum?

We have now introduced additional teaching sessions: structured displays are case scenarios that highlight for the student the role of the pathology laboratory for the clinician working in the hospital setting. In addition we have placed greater emphasis on molecular pathology and its importance in clinical diagnosis. Below is an example of a structured display.

Special Study Modules have generated great interest, especially in the field of forensic pathology. Students in their final years of the curriculum can also “shadow” the pathologists in their routine surgical pathology diagnostic laboratory activities, so that they are better able to appreciate the importance of pathology and as graduates will be more aware of the subspecialties of the Hong Kong College of Pathologists.

And the autopsies

The reduced timetable made it inevitable that the didactic form of autopsy teaching had to be replaced. Now, students are scheduled to visit a public mortuary with in a small group where they observe autopsies, and learn about gross pathology and the system of death investigation and certification in Hong Kong. In line with the self-directed learning philosophy, students may avail themselves of the option of autopsy attachments during the special study modules which are held over the summer months.
Changes to assessment

We have changed the assessment system so that students no longer write long essays for the yearly exams but instead are set multiple choice and short answer questions. This allows for a greater area of knowledge to be assessed in a more objective way. The Department of Pathology is also intimately involved in the planning and factual input of the curriculum and most members of staff are either course coordinators or planners in the Undergraduate Education Committee or the Institute of Medical and Health Sciences Education (IMHSE). We have also changed many of the existing practical sessions to make them more case based.

New Initiatives

Web-based Virtual Microscopy in Education

The microscope is a tool. Microscopy uses this tool as a means of viewing, exploring and understanding what can be visualized in the microscopic world. Students find the light microscopy difficult as it requires practice and a helping hand from tutors. Many are prone to incorrect usage, viewing slides under high power magnification and out of context. With the reduction in amount of time allocated to instruction of histology and pathology, the use of microscopy has been minimized and students fail to engage with enough depth a learning activity that can enrich their understanding of morphology and function of tissues in health and disease.

Our department successfully set up a new Core Imaging Facility based on the Aperio ScanScope System which provides high quality microscope scanning and web-based virtual microscopy. Using this system, glass microscopic slides are scanned and viewed on a computer window browser as virtual slides (x 20 or x 40). These images can be stored on DVDs or accessed over the Internet. The virtual images are completely maneuverable in any direction. Thus the computer becomes the microscope.

This has helped reinvigorate students’ interest in the histological and histopathological changes and thus improve their understanding of pathogenesis.

Aperio ScanScope System

This system has been used for innovative teaching of Pathology Practical sessions since the beginning of the 2008 academic year, with overwhelming positive response. A pilot survey of its application on the MBBS II students showed more than 90% of them agreed the digital demonstration facilitated more effective learning.

The students found the images clearer, the demonstration process smoother and orientation of the slides easier, helping them understand pathological features better. We have since received numerous requests from students asking for access to the material online, its use for anatomy-histology practical sessions and for demonstration of gross specimens. This was implemented in the 2010 academic year.

The application of this system for teaching will encourage greater depth of engagement by students in viewing, exploring and understanding what can be visualized at the gross and microscopic level.
DEPARTMENT OF PATHOLOGY

TEACHING - INNOVATIONS IN CURRICULUM DESIGN AND DELIVERY

Supported by a University Development Fund we now have a dedicated server to house this system for the joint hosting of Pathology and Anatomy teaching slides and images, and to allow online access by students of the teaching material. This system will provide the opportunity for further innovative curriculum development and the cultivation of a student-centered learning environment, which is in line with the University Strategic Theme to provide a rich virtual learning environment that complements other pedagogies to enrich the educational environment.

Looking to the Future

Senior students are now distributed in many allied hospitals where honorary teachers have a valuable role to play in offering teaching sessions, options to see cut ups, and clinical-pathological meetings. Laboratory attendance of these senior students enables them to better appreciate the importance of the diagnostic pathologist to patient care and the direct contribution of the pathology profession to medical care. We continue to endeavor to seek ways to improve the image of the pathologist in the eyes of the general public, finding opportunities to make them better aware of the contribution of our expertise toward many aspects of the medical profession.

Outcome Based Approach to Student Learning (OBASL)

In anticipation of the 2012 New Undergraduate Curriculum when the undergraduate medical curriculum will be extended to 6 years of study, the department has been working closely with the faculty and the university to articulate the planned and intended outcomes of our teaching in a much more explicit manner. This is a continuation of our moving emphasis from teaching to learning. It is increasing our efforts to engage students in deep understanding rather than surface factual rote learning by articulating in much clearer terms the expected learning outcomes of each session. Pathology teachers regularly review and re-articulate these learning outcomes based on feedback of these sessions hence automatically inserting a quality cycle in their teaching activities.

Common Core Curriculum

A new initiative resulting from the 2012 New Undergraduate Curriculum is the 6-credit Common Core Programs. These programs are organized under four large Areas of Inquiry (AoI):-

- Scientific and Technological Literacy
- Humanities
- Global Issues
- China Culture, State and Society

Teachers in our department are actively engaged in developing multidisciplinary programs to serve the needs of this new initiative.

Teaching and learning in Pathology continues beyond the first 2 years of medical school – for an update of the MBBS pathology curriculum, please download from: http://www.hku.hk/patho/docs/teach/teach.pdf
This program was launched in September 2010 with the aim of providing health care professionals with a deeper understanding of the molecular and genetic basis of diseases and the application of molecular technologies in human disease.

The past decades have seen rapid advances in medical care and in the development of molecular science. This has in many aspects revolutionized approaches to diagnosis, treatment and management of many human diseases, particularly inherited disorders, cancer, and infectious diseases. Increasingly there is a demand on clinicians to avail of the translation of molecular advances into the clinical situation, in almost all clinical specialties.

Suitable for specialists, resident specialists, community physicians and medical laboratory staff responsible for developing, managing and providing molecular diagnostic services, the Course is delivered through didactic seminars, tutorials and case studies/practicals, with self-assessment exercises and completion of a project.

Emphasis is given to understanding molecular and diagnostic pathology with view to clinical translational application that will equip participants to meet the increasing expectations in health care from patients and the public.

It consists of a 2-year part-time course consisting of 8 weekend sessions offered every 2 years.

**Molecular Pathology Modules**
- Principles and Techniques of Molecular Pathology
- Clinical Applications of Molecular Testing
- Fundamentals of Genetic Testing

**Diagnostic Pathology Modules**
- Chemical Pathology, Immunology, Diagnostic Haematology and Transfusion Medicine
- Essential Anatomical Pathology for Clinicians

Candidates who have completed all five modules of the course with completion of a Project can be awarded the Postgraduate Diploma (PDipMDPath), whilst those with the appropriate three modules completed be awarded the Postgraduate Certificate (PCMDPath).

Participants who wish to undertake individual modules or specific sections within the Diagnostic Pathology Modules may also do so as occasional students with award of CME points.

**Academic Director**: Professor Ng Oi Lin Irene  
**Course Co-ordinator**: Professor Khoo Ui Soon

**Module Coordinators:**  
Professor Srivastava Gopesh, Professor Khoo Ui Soon  
Professor Cheung Nga Yin Annie, Dr So Chi Chiu Jason,  
Professor Lam Ching Wan and Dr Chan Kwok Wah
We are very appreciative of the contributions made by our Honorary Teachers towards the enhancement of our medical students’ learning and understanding in Pathology.

HONORARY CLINICAL PROFESSORS
Professor CHAN Yan-wo Albert
Professor NGAN Yuen-sheung Hextan
Professor Sidney TAM
Professor YUEN Siu-tsan

HONORARY PROFESSORS
Professor CAO Xuetao
Professor HOU Lee-tsun Laurence
Professor LAM King-yin
Professor MAK Tak-wah

Professor POON Man-chiu
Professor SO Chi-wai Eric
Professor THEIN Swee-lay
Professor Peter VANEZIS

Professor WAN Shek-kong Thomas
Professor YU Jun

HONORARY CLINICAL ASSOCIATE PROFESSORS
Dr CHAN Ho-ming Michael
Dr CHAN Yuk-tat Eric
Professor Gregory CHENG
Dr CHEUNG Man-fung Florence
Dr CHOW Yu-de Eudora
Dr Robert John COLLINS
Dr HA Shau-yin
Dr HAU Kong-lung
Dr IP Pun-Ching Philip
Dr KWAN Tat-chee Jonathan
Dr KWOK Siu-yin Janette
Dr LAM Chun-kit Clarence

Dr LEUNG Chung-ying
Dr LIU Hing-wing
Dr LO Seen-ting Sue
Dr LOKE Shee-loong
Dr LUK Sheung-ching Ivy
Dr MA Shiu-kwan Edmond
Dr MA Tung Lily
Dr MAK Miu Chloe
Dr MAK Wing-lai Tony
Dr Ng Hang-kin Thomas
Dr NG Wai-kuen
Dr NG Wing-fung

Dr PANG Siu-wah
Dr SHEK Wai-hung Tony
Dr SHUM Shui-fung Bobby
Dr TAI Hok-leung Morris
Dr TSE Wai-choi Eric
Dr WONG Koon-sang
Dr YAN Kin-wing
Dr YUEN Wah-fun Nancy
Dr YUEN Yuet-ping Liz

HONORARY ASSOCIATE PROFESSORS
Dr Paul DICKENS
Dr HUANG Fang-ping
Dr David KAN

Dr Anglic Hunter McCRAW
Dr SZE Man-yuen Daniel
Dr YANG Tao

Professor YIP Shea-ping

HONORARY CLINICAL ASSISTANT PROFESSORS
Dr CHAN On-kei Angel
Dr CHAN Shueng-wai Gavin
Dr CHEN Pak-lam Sammy
Dr CHING Chor-kwan Doris
Dr HO Siu-fun Ronnie
Dr KAM Kwok-ling
Dr KAN Nim-chi Amanda
Dr LAI Sai-chak

Dr LAU Wing-hung
Dr LEE Cheuk-kwong
Dr LEE Han-chih Hencher
Dr LEUNG Fung-shan Kate
Dr LEUNG Kin-chung
Dr LEUNG Yuk-yan Rock
Dr Florence LOONG
Dr NG Chung-ki

Dr POON Wai-ming
Dr POON Wing-tat David
Dr SIU Wai-kwan Carol
Dr TANG Hin-ning Alexander
Dr TSO Chi-bun
Dr YEUNG Chun-wing Matthew
Dr YIP Sze-fai

HONORARY ASSISTANT PROFESSORS
Dr CHAN Yuen-kwong Kelvin
Dr CHUNG Lap-ping
Dr IP Wai-ki Ricky
Dr LEE Sai-kit Joseph

Dr MA Kwai-ye Stephanie
Dr SIU Kwan-ye Michelle
Dr SZE Man-fong Karen

Dr TANG Cheuk-on Johnny
Dr TUNG Kwok-kwan Edmund
Dr YIP Tak-chun Timothy
Our commitment towards research, clinical services and teaching excellence is supported by a dedicated and outstanding team of technical and supporting staff, with a wide range of laboratory and technical expertise. Without these staff the research and clinical service would not be of the high standard that has led to our laboratories being accredited by the College of American Pathologists.

At present Ms Annie Chan, the Department’s Chief Technician, leads a team of 25 full-time technical and supporting staff, serving in various research/teaching laboratories of the Department.

On the administration side, our Administrative Assistant Raymond Ho supervises 6 executive and support staff, including a Program Manager for the State Key Laboratory for Liver Research (HKU), providing secretarial and administrative support to teaching, research and clinical services.
The Department of Pathology puts great emphasis on, and stands at the forefront of, both medical and scientific research. The department currently has 22 full-time academic staff, all taking an active part in cutting-edge biomedical research. In collaborations with our clinical colleagues, we study different forms of human diseases from clinical samples to animal models, and from epidemiology to molecular mechanisms. Cancer, Immunology and Infections, Stem Cell Biology, Forensic Pathology and Chemical Pathology are the 5 major themes of our research activities.

**Cancer**
- Molecular Genetics
- Signaling
- Angiogenesis
- Animal Models
- Epigenetics
- Epidemiology

<table>
<thead>
<tr>
<th>Cancer</th>
<th>CHAN Li-chong</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHAN Tsun-leung Chris</td>
</tr>
<tr>
<td></td>
<td>CHEUNG Nga-yin Annie</td>
</tr>
<tr>
<td></td>
<td>CHOI Wai-lap William</td>
</tr>
<tr>
<td></td>
<td>KHOO Ui-soon</td>
</tr>
<tr>
<td></td>
<td>LEE Kin-wah Terence</td>
</tr>
<tr>
<td></td>
<td>LEUNG Suet-yi</td>
</tr>
<tr>
<td></td>
<td>LO Cheuk-lam Regina</td>
</tr>
<tr>
<td></td>
<td>LU Liwei</td>
</tr>
<tr>
<td></td>
<td>MA Kwai-yee Stephanie</td>
</tr>
<tr>
<td></td>
<td>NG Kit Ray</td>
</tr>
<tr>
<td></td>
<td>NG Oi-lin Irene</td>
</tr>
<tr>
<td></td>
<td>John Malcolm NICHOLLS</td>
</tr>
<tr>
<td></td>
<td>Gopesh SRIVASTAVA</td>
</tr>
<tr>
<td></td>
<td>WONG Chun-ming Jack</td>
</tr>
<tr>
<td></td>
<td>WONG Pik Maria</td>
</tr>
<tr>
<td></td>
<td>YAM Wai-ping Judy</td>
</tr>
</tbody>
</table>

**Stem Cells & Gene Therapies**

<table>
<thead>
<tr>
<th>Stem Cells &amp; Gene Therapies</th>
<th>CHAN Li-chong</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHEUNG Nga-yin Annie</td>
</tr>
<tr>
<td></td>
<td>KHOO Ui-soon</td>
</tr>
<tr>
<td></td>
<td>LEE Kin-wah Terence</td>
</tr>
<tr>
<td></td>
<td>LU Liwei</td>
</tr>
<tr>
<td></td>
<td>MA Kwai-yee Stephanie</td>
</tr>
<tr>
<td></td>
<td>NG Kit Ray</td>
</tr>
<tr>
<td></td>
<td>NG Oi-lin Irene</td>
</tr>
</tbody>
</table>

**Infection & Immunity**
- Immunity to Infections
- Anti-tumor Immunity
- Pathogenesis of Autoimmunity
- Developmental Immunology

<table>
<thead>
<tr>
<th>Infection &amp; Immunity</th>
<th>KHOO Ui-soon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LU Liwei</td>
</tr>
<tr>
<td></td>
<td>John Malcolm NICHOLLS</td>
</tr>
</tbody>
</table>

**Forensic Medicine**
- Forensic Pathology
- Homicides
- Law & Ethics

<table>
<thead>
<tr>
<th>Forensic Medicine</th>
<th>BEH Swan-lip Philip</th>
</tr>
</thead>
</table>

**Chemical Pathology**
- Inborn errors of metabolism
- Molecular genetic pathology
- Clinical toxicology and personalized medicine
- Toxic exposure surveillance and biomonitoring

<table>
<thead>
<tr>
<th>Chemical Pathology</th>
<th>LAM Ching-wan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LAW Chun-yiu Eric</td>
</tr>
</tbody>
</table>
Research Postgraduate Students
Between 1997 and 2011, 48 PhD, 46 MPhil and 123 MMedSc students have graduated from our department. Many of them have received distinguished awards for their research excellence including the Swire Scholarships, ‘Young Investigator Award’ of the Hong Kong International Cancer Congress, YS and Christabel Lung Postgraduate Scholarship and Best Presentation Award of the Research Postgraduate Symposium. Currently, there are 20 PhD, 7 MPhil and 21 MMedSc students in our department.

Student Achievements and Awards (since academic year 2010 – 2012)

Current Students

**Deng Jun, PhD (Supervisor: Dr LW Lu)**
- University Postgraduate Fellowship 2010-2011

**Fan Ngo-yin Dorothy, PhD (Supervisor: Dr JCM Wong)**
- Best Presentation Award, 16th Research Postgraduate Symposium, LKS Faculty of Medicine, 2011

**Kai Ka-lun Alan, PhD (Supervisor: Professor IOL Ng)**
- Outstanding Poster Presentation, 16th Research Postgraduate Symposium, LKS Faculty of Medicine, 2011
- Best Presentation Award, Research Postgraduate Retreat, Department of Pathology, The University of Hong Kong, 2012

**Lee Siu-po, PhD (Supervisor: Professor SY Leung)**
- Sir Edward Youde Memorial Fellowship 2011-2012
- Swire Scholarships for Research Students in Residence at Robert Black College, 2011

**Ma Wei, PhD (Supervisor: Professor IOL Ng)**
- Best Presentation Award, Research Postgraduate Retreat, Department of Pathology, The University of Hong Kong, 2011
**RESEARCH POSTGRADUATE**

**Graduated Students**

- **Castilho Antonia Genevieve, MPhil 2010 (Supervisor: Dr TKW Lee)**
  - Outstanding Research Postgraduate Student 2009-2010

- **Chan Wing-lim, MPhil 2011 (Supervisor: Professor JM Nicholls)**
  - Croucher Foundation Fellowships/Scholarships 2011-2012

- **Cheung Chi-ho Vincent, MPhil 2011 (Supervisor: Dr TKW Lee)**
  - YS and Christabel Lung Postgraduate Scholarship 2010-2011
  - Young Investigator Award, 17th Hong Kong International Cancer Congress, 2010

- **Wong Kit-man Sunny, MPhil 2011 (Supervisor: Dr MP Wong)**
  - Best Presentation Award, Research Postgraduate Retreat, Department of Pathology, The University of Hong Kong, 2011

- **Zhang Luduo, MPhil 2010 (Supervisor: Professor US Khoo)**
  - Best Presentation Award, Research Postgraduate Retreat, Department of Pathology, The University of Hong Kong, 2010

- **Au Leung-kuen Sandy, PhD 2011 (Supervisor: Dr JCM Wong)**
  - Best Presentation Award, 15th Research Postgraduate Symposium, LKS Faculty of Medicine, 2010

- **Tang Kwan-ho, PhD 2011 (Supervisor: Dr KW Chan)**
  - YS and Christabel Lung Postgraduate Scholarship, 2010-2011
  - Best Presentation Award, Research Postgraduate Retreat, Department of Pathology, The University of Hong Kong, 2012

- **Tse Yuk-ting Edith, PhD 2010 (Supervisor: Dr JWP Yam)**
  - Best Presentation Award, Research Postgraduate Retreat, Department of Pathology, The University of Hong Kong, 2010
The Department of Pathology is well-equipped with essential facilities, and 11 research laboratories housed in the University Pathology Building, Queen Mary Hospital Compound. State-of-the-art research equipment is also available to researchers and students in our Core Facility Suite. Another open-plan and fully-equipped research laboratory located in the Faculty of Medicine Building, generously donated by the SH Ho Foundation, was opened in 2003 and has since become a second major base of our research activities.

Research Laboratories:

- Breast Cancer Genetics Research Laboratory (Supervisor: Professor Khoo Ui-soon)
- Central Tissue Culture Laboratory (Supervisor: Dr Lu Liwei)
- Gastrointestinal Cancer Genetics Laboratory (Supervisor: Professor Leung Suet-yi)
- Gynaecological Diseases Research Laboratory (Supervisor: Professor Cheung Nga-yin Annie)
- Haematology Research Laboratory (Supervisors: Professor Chan Li-chong and Dr So Chi-chiu Jason)
- Immunology Laboratory (Lymphocyte Development and Autoimmunity) (Supervisor: Dr Lu Liwei)
- Liver Cancer and Hepatitis Research Laboratory (Supervisor: Professor Ng Oi-lin Irene)
- Lung Diseases Research Laboratory (Supervisor: Dr Wong Pik Maria)
- Lymphoma Research Laboratory (Supervisor: Professor Gopesh Srivastava)
- Nasopharyngeal Diseases Laboratory (Supervisor: Professor John Malcolm Nicholls)
- Urological Cancer Research Laboratory (Supervisor: Dr Chan Kwok-wah)

State-of-the-art Equipment:

- TECAN Automated Robotic System for IHC and ISH
- Aperio ScanScope CS System
- Real-time Quantitative PCR System
- Comparative Genomic Hybridization (CGH) station
- EPICS ALTRA Flow Cytometer
- BD FACSCalibur Flow Cytometer
- Kodak Imaging Station
- Tissue Arrayer
The State Key Laboratory for Liver Research (SKLLR) was officially set up in 2010, with the approval of the Ministry of Science and Technology, China. The Laboratory has been dedicated to enhance the understanding in the pathogenetic mechanisms of liver cancer, hepatitis B virus (HBV), and cirrhosis by engaging in cutting-edge basic research and devising better diagnoses and new/better treatment modalities for liver cancer and HBV infection.

The SKLLR has the top local physicians, surgeons, pathologists and basic scientists with interests and commitments in basic and clinical research for liver diseases in Hong Kong. Furthermore, the Laboratory, together with a top hepatitis treatment center and a large-scale, top-class cost-effective liver transplant center and through meticulous prospective studies, confers a major benefit to the society. By organizing symposiums, seminars and different activities, SKLLR has enhanced the exchange of liver diseases research and technology development.

Capitalizing on the existing strength on molecular biology, cancer genetics, functional proteomics, virology, clinical trials and surgery, the SKLLR aims to develop better/earlier diagnosis and treatment modalities to prevent, retard, and treat HBV and its life-threatening complications in liver diseases. New drugs/vaccines or related lead compounds developed will attract venture capitals to further establish biomedical industry in Hong Kong.

Website: http://www.skllr.hku.hk
We provide an independent autopsy service for families, insurers, lawyers, etc., consultation for review of death investigations, death reports, autopsy reports for civil as well as criminal cases and expert opinions and evidence in criminal and civil trials. We also hold consultations and give advice on management of victims of child abuse, adult and child sexual abuse, and victims of assaults where interpretation of injuries is required. Other services include consultation and examination for victims of human rights abuses and asylum seekers and consultation and advice on interpretation of forensic evidence for lawyers.

Clinical work covers surgical pathology, cytopathology and autopsy aided by molecular studies. Areas of special interest are renal and urological pathology, an interest which has developed over many years of clinical practice and research. Overseas training in renal pathology was under Prof. J. Tighe of St. Thomas's Hospital, London. The number of renal biopsies currently stands at about 250 a year. An almost equal number of consultation cases comprises biopsies from private hospitals and Macau's Central Hospital. An archive of renal biopsy materials is maintained for convenient case review and training in diagnostic renal pathology.

Besides a general anatomical pathology service, Professor Cheung is also the key pathologist in gynaecological histopathology and cytology. She has trained with world renowned experts in gynaecological pathology including Professor Harold Fox, University of Manchester, Professor Robert E Scully, Massachusetts General Hospital and Professor Henry J Norris, Armed Forces Institute of Pathology, Professor Cheung is involved in the weekly Gynaecological Tumour Board meeting and the training of gynaecological pathology. She is the Pathologist in Charge of the Cervical Cytology Laboratory, The University of Hong Kong, the first laboratory in Hong Kong accredited by the College of American Pathologists. It is also one of the first Asian laboratories to adopt large scale liquid based cervical cytology, automated cytology imaging and molecular detection of the human papilloma virus. Professor Cheung is interested in the application of cutting edge molecular biology techniques in the early detection and improved management of gynaecological cancers.
Dr Choi Wai-lap William

Dr Choi had been trained as a haematopathologist in the United States of America, with special interests in haematological malignancies before he returned to Hong Kong. While working closely with the rest of the Haematology team at Queen Mary Hospital to provide comprehensive diagnostic services for a variety of benign and malignant haematological disorders, Dr Choi is also keen on developing new molecular tests for haematological malignancies. The tests that are currently being developed include NPM1 and FLT3-ITD mutations for acute myeloid leukaemia, and c-KIT mutations and quantitative PCR for acute myeloid leukaemia with t(8;21). Dr Choi also provides consultative services in haematology, especially myeloid and lymphoid malignancies.

Professor Lam Ching-wan

Professor Lam trained as a chemical pathologist in Hong Kong and overseas with an emphasis on inborn errors of metabolism, molecular genetic pathology, prenatal diagnosis of genetic diseases, and toxicology. He supervises residents undergoing specialist training while providing clinical services in the HKW Cluster. He receives clinical consultation for test selection and clinical interpretation of laboratory test results for the diagnosis of genetic diseases.

Professor Khoo Ui-soon

In addition to general anatomical pathology service of diagnostic surgical biopsy and cytology, Professor Khoo is specialized in breast pathology, having trained at the Nottingham City Hospital under Professor CW Elston and Dr. Ian Ellis. Working closely with the surgeons, radiologists and oncologists as a multidisciplinary breast team, we hold regular multi-disciplinary meetings to review cytology, histology and radiological findings with view to management. From longstanding collaborative work with the Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Canada, she has acquired expertise in genetic testing for hereditary breast cancer, namely for BRCA1 and 2 gene mutations. Individual referrals will be given genetic counseling and mutation testing offered if appropriate. As part of the University Molecular Pathology Laboratory services, she has also contributed to setting up the Fluorescent In-Situ Hydridization (FISH) assay for HER2 amplification in breast cancer.

Professor Leung Suet-yi

Professor Leung is a histopathologist with special interest in molecular gastrointestinal pathology and neuropathology. She supervises the Hereditary Gastrointestinal Cancer Genetic Diagnosis Laboratory which provides genetic diagnosis tests, including microsatellite instability analysis, mutational analysis for DNA mismatch repair genes (Hereditary Non-Polyposis Colorectal Cancer Syndrome), Adenomatous Polyposis Coli gene (Familial Adenomatous Polyposis Syndrome), LKB1 gene (Peutz-Jegher syndrome), SMAD4 and BMPR1A genes (Juvenile Polyposis syndrome) and PTEN gene (Cowden syndrome). She also provides consultative services in neurosurgical pathology and neuromuscular pathology.
Dr Lo Cheuk-Iam Regina

Dr Lo is a newly admitted Fellow who has a special interest in liver pathology. She attends her training in liver pathology at Mount Sinai Medical Center, New York. Apart from general pathology, she also studies cases on hepatitis and hepatocellular carcinoma.

Professor Ng Oi-lin Irene

On top of a general anatomic pathology service, Professor Irene Ng is specialized in liver pathology including hepatitis, liver cancer and liver transplantation. She was trained at King’s College Hospital and Royal Free Hospital with Prof. Bernard Portmann and Peter Scheuer for liver pathology. She has been the chief pathologist of the liver transplant team at University of Hong Kong - Queen Mary Hospital since the first successful liver transplantation in 1991 and has been responsible for reporting liver transplant pathological diagnoses. The liver transplantation team at HKU has established a very successful transplantation program with a number of ‘firsts’ in Hong Kong and internationally. She has also trained a number of scholars from different parts of the world in liver transplant pathology.

Professor John Malcolm Nicholls

Professor Nicholls trained as an anatomical pathologist in Adelaide, Australia with an emphasis on paediatric pathology. When he came to Hong Kong, in addition to paediatric pathology work he focused on nasopharyngeal carcinoma diagnosis and monitoring after radiotherapy, and on other diseases of the head and neck. He holds regular meetings with paediatric oncologists and surgeons and has been involved in clinical head and neck presentations.

Dr So Chi-chiu Jason

The Haematology Laboratory and Blood Bank at Queen Mary Hospital provides a comprehensive diagnostic service for a wide range of haematological disorders. Investigations on acquired and hereditary white cell and red cell disorders, bleeding and thrombotic diseases, thalassaemias, haematological malignancies and serological problems are available. Cytogenetic and molecular genetic techniques are employed to aid both diagnosis and patient monitoring. We provide regular services to the Hong Kong West Region and receive consultations and referrals from both public and private hospitals on a territory-wide basis.

Dr Wong Pik Maria

Dr Wong specializes in diagnostic anatomical pathology, especially lung pathology. She has helped in setting up the molecular test for EGFR mutations conducted in the Molecular Pathology Laboratory of the Department of Pathology, Queen Mary Hospital using surgical biopsies, fine needle aspiration biopsy and fluid cytology specimens. She is also trained in performing and interpreting fine needle aspiration biopsies of palpable lesions in the body, as well as exfoliative cytology diagnoses.
Established since 1992, the HKU Cervical Cytology Screening Laboratory has been dedicated to the continuous improvement of cervical cytology screening in Hong Kong, with nearly 1.2 million samples reported with an average of 80,000 cases per annum.

The Laboratory is a pioneer in the introduction of state-of-the-art technologies.

- In March 2000, liquid based cytology technology approved by the United States Food and Drug Administration (FDA) was adopted for full scale cervical cancer screening.
- In 2004, a pilot study on HPV testing for triage of women with atypical squamous cells of undetermined significance (ASCUS) in cervical smears was conducted with the generous support of the SK Yee Medical Foundation.
- In July 2005, the Laboratory was the first in Hong Kong and Asia to introduce the latest model of automated cervical cytology screening imager approved by the United States Food and Drug Administration (FDA).
- In 2001, the Cervical Cytology Screening Laboratory became the first laboratory in Hong Kong to be accredited by the College of American Pathologists, the laboratory has maintained CAP accreditation status since that date.
- The impressive results encouraged the adoption of reflex HPV test for women with cervical cytology diagnosed with ASCUS from Jan 2007.

Our services are accredited by the College of American Pathologists (CAP).
Our tissue processing and reporting laboratory provides a tissue processing service for surgical biopsy specimens. This includes tissue processing, embedding, microtome-sectioning, and H&E staining. Pathologists perform macroscopic description, block-sampling of specimens such as cervical loop excision, as well as pathology reporting. Similar services are also available for contract research.

Tissue Microarray is the construction of a paraffin embedded block, comprised of multiple tissue elements derived from individual “donor” tissue blocks. It allows cost-effective production of immunohistochemistry and \textit{in situ} hybridization. It can be applied for clinical and translational research including clinical trials.

Our services are accredited by the College of American Pathologists (CAP).
The Hereditary Gastrointestinal Cancer Genetic Diagnosis Laboratory was established since 1995. We are currently providing genetic tests, genetic counseling, psychosocial support and advice for prophylactic screening for families at risks for the Hereditary Nonpolyposis Colorectal Cancer (HNPCC), Familial Adenomatous Polyposis (FAP) and other types of Polyposis syndromes. This is a charitable service supported by the Hong Kong Cancer Fund, aiming to achieve colon cancer prevention in local high risk families through genetic testing and appropriate prophylactic screening. Since 2006, we have gained support from St. Paul’s Hospital that allows us to set up a charitable patient referral centre in their hospital venue to facilitated population-wide patient recruitment. The Laboratory works in collaboration with all public and private doctors in Hong Kong to provide a comprehensive genetic diagnosis service, so as to help them to plan appropriate prophylactic screening for at risk individuals. Over the years, these have resulted in hundreds of polyps or early cancers being removed and thus saving lots of lives. More importantly, with our service, individuals from these at risk families are proven not to have inherited the cancer-predisposing mutations, and thus leads in great savings on medical resources and relief of psychological burden. To date, over 1000 families has benefited from our genetic diagnosis service. Amongst these, 220 families were confirmed to carry HNPCC, APC, PJS, JP or PTEN gene germline mutations, with predictive genetic testing done for over 950 family members. The laboratory has generated the largest database on mutation spectrum of DNA mismatch repair gene in Chinese population, and uncovered novel mechanisms for genetic predisposition to colon cancer. These have resulted in numerous high profile publications of both local and global importance, in prestigious journals including Nature Genetics and American Journal of Human Genetics. Our laboratory has provided the innovative model for academic researchers to serve the community through partnership with charitable organization, public and private health care providers.
CLINICAL SERVICES TO THE COMMUNITY

UNIVERSITY PATHOLOGY LABORATORY (UPL)

Laboratory Directors: Professor Annie NY Cheung (Molecular Pathology)
Professor CW Lam (Chemical Pathology)
Deputy Laboratory Directors: Dr Maria P Wong and Professor US Khoo
Scientific Advisor: Dr Chris TL Chan
Honorary Accreditation Advisor: Professor Sidney Tam

The UPL, accredited by the College of American Pathologists, is a state-of-the-art laboratory committed to providing an excellent diagnostic service specially tailored for serious and common disorders in Hong Kong and the region. We are staffed by a comprehensive panel of professoriate grade clinical pathologists for consultation and clinical interpretation of tests and employ cutting-edge technologies for diagnosis and management of human diseases along the following main themes:

- Cancer Molecular Prognostic Marker for “Personalised Medicine”
- Toxicology & Pharmacogenomics
- Early bladder Cancer Detection
- Genetic Diagnosis of Hereditary Cancers & Disorders
- Viruses & Cancer

Cancer Molecular Prognostic Marker for “Personalized Medicine”

A) BCR/ABL kinase mutation detection for chronic myelogenous leukaemia and related disorders
Detection of BCR/ABL kinase mutation by semi-nested PCR and subsequent sequencing of cDNA extracted from patients’ peripheral blood can switch management to alternative tyrosine kinase inhibitors or discontinuation of drugs.

B) KRAS mutation detection for colorectal cancer
No response to therapy using anti-EGFR antibodies (e.g. Cetuximab) can be enriched by microdissection in paraffin tumour blocks (including small biopsies) for tumour cells, followed by PCR and DNA sequencing to detect for KRAS mutation. The presence of KRAS mutation predicts lack of response to EGFR inhibitors in other types of cancers which can help clinicians in the choice of treatment strategy.

C) EGFR mutation detection for lung cancer
Lung cancer patients whose tumors show activating EGFR mutations have longer progression-free survival with first line tyrosine kinase inhibitor therapy; vice versa, wild type tumours have better PFS with conventional platinum-based chemotherapy. Thus, EGFR mutation analysis is mandatory for treatment plans. Our laboratory offers two independent testing methods – Sanger sequencing which gives all sequence information of EGFR exons 18 to 21, suitable for samples with adequate tumor content; and Q-PCR-based technology for detection of hot spot mutations only, suitable for small samples with limited tumor content. Microdissection for tumour enrichment would be performed for both tests.

D) HER-2 amplification test for breast cancer
PathVysion®, the only FDA approved HER-2 assay, is performed by UPL for assessment of amplification status of the HER-2 oncogene. The assessment assists the selection of patients suitable for adriamycin-based therapy and of patients who may respond to Herceptin® treatment. The test can be performed on formalin fixed paraffin embedded surgical pathology tissue blocks.

E) NPM1/FLT3-ITD mutation test for acute myeloid leukaemia
Approximately 40-50% of acute myeloid leukaemia are cytogenetically normal (CN-AML). As a whole group, these CN-AML carry an intermediate prognosis. Recent studies have found that among these CN-AML, those with the combination of an insertional mutation of exon 12 of the NPM1 gene and internal tandem duplication of the juxtamembrane domain of the FLT3 gene (NPM1mut+/FLT3-ITD+) are associated with a good prognosis and may not require an allogeneic bone marrow transplantation at first complete remission by chemotherapy. Additionally, the presence of FLT3-ITD may provide a drug target for novel tyrosine kinase inhibitors.
**Toxicology & Pharmacogenomics**

A comprehensive pharmacogenetic testing for personalized, individualized therapy is provided for guiding the treatment of diseases including selecting drug with the greatest efficacy in managing the disease and predicting adverse drug reaction for individual patients for a given drug therapy.

---

**Genetic Diagnosis of Hereditary Cancers & Disorders**

**A) BRCA1/2 Mutations in Breast and/or Ovarian Cancers**

Inherited alterations in BRCA1 and BRCA2 susceptibility genes may be found in cases of hereditary breast and ovarian cancer, which convey increased risk for breast and ovarian cancer. Testing should begin by identification of a specific mutation in affected family members. Once such mutation is identified, “carrier” testing can be offered to family members who wish to learn whether or not they have inherited that mutation.

---

**B) Cardiovascular, developmental, endocrine, metabolic, neurological and skin disorders**

Genetic testing of various human diseases is provided including familial endocrine tumors and disorders, inborn errors of metabolism and development such as glucose-6-phosphate dehydrogenase deficiency and Wilson disease, Long-QT syndrome, cardiomyopathy, neurogenetic and neuromuscular disorders, Parkinson’s disease and sudden infant death.

---

**C) Multiple endocrine neoplasia (MEN) syndromes**

The MEN syndromes comprise 3 genetically distinct familial diseases involving hyperplasia and cancer in several endocrine glands.

Genetic testing of the MEN1 and RET genes for the MEN1 and MEN2/Familial Medullary Thyroid Carcinoma (FMTC) syndromes respectively can be used for pre-symptomatic identification of at-risk individuals for early interventional management.

---

**Viruses & Cancer**

**A) Hepatitis B virus (HBV)**

Viral load by qPCR and HBV DNA mutants detection can guide to anti-HBV viral therapy and monitoring of response and assess liver disease and cancer development.

**B) Human Papillomavirus (HPV) & Cervical Lesion/Cancer**

UPL provides various tests for HPV and cervical lesion or cancer:

- FDA approved Hybrid Capture II signal amplified chemiluminescent assay and Amplicor PCR-based test detect high risk HPV genotypes in cervical cells collected in liquid-based cytology.
- Linear array HPV genotyping test can identify individual high-risk and low risk HPV genotypes
- FDA approved Roche cobas® 4800 HPV Test for detection of 14 high risk HPV genotypes and identification of HPV 16/18.
- HPV genotyping by sequencing.

Applications:

- Reflex HPV detection test for atypical squamous cells of undetermined significance (ASC-US)
- Screening for cervical cancer and precursors.
- Monitoring for disease recurrence (Test of Cure).
- Quality control for HPV test from referral laboratories.

---

**Early Bladder Cancer Detection**

Early detection of recurrent urothelial carcinoma and screening of urothelial cancer by using the FISH technique can detect aneuploidy for chromosomes 3, 7, 17, and loss of the 9p21 locus in urine specimens from persons with haematuria suspected of having bladder cancer.

---

Our services are accredited by the College of American Pathologists (CAP).
Academic staff work closely with the Chief of Service and professional staff in the Department of Pathology and Clinical Biochemistry of Queen Mary Hospital to provide a comprehensive range of College of American Pathologists accredited diagnostic laboratory service in Anatomical Pathology, Clinical Biochemistry, Clinical Immunology, Haematology, and Transplantation & Immunogenetics, which are the 5 Divisions of the Hospital Department. The hospital staff includes 5 Consultants, 8 Associate Consultants/Senior Medical Officers, 2 Resident Specialists, 5 Resident Trainees and 8 Scientific Officers. The Hospital also funds a number of staff who are employed by the University and who also participate in clinical diagnostic services, including a Scientific Officer who works specifically in the area of developing and utilizing diagnostic molecular pathology tests.

The **Anatomical Pathology Division** provides services in surgical pathology, cytopathology and autopsy to Queen Mary and other hospitals in the Hong Kong West Cluster as well as other private and public hospitals in the territory on a referral basis. Pathologists with subspecialty training and interest are available for consultation on most organ systems. In 2010, it reported on 44,798 surgical specimens including 992 frozen section cases. In addition, 28,014 cytology specimens and 152 autopsies, including 104 Coroner’s cases, were handled. The clinical practice of Anatomical Pathology is supported by a general core laboratory and a number of special laboratories, including immunohistochemistry, electron microscopy, image analysis and molecular pathology. Like other divisions in the department, the Anatomical Pathology Division is also a certified training centre of the Hong Kong College of Pathologists, the Royal College of Pathologists of Australasia and the Royal College of Pathologists of the UK.

The **Haematology Division** similarly provides a comprehensive diagnostic and consultative service to Queen Mary Hospital and others as well as a 24-hour blood banking service. In 2010, the workload of the Division included 4,173 bone marrow/cell marker tests, 254,640 tests of coagulation, 550 cases of cytogenetics/FISH, 420,237 full blood counts, and 26,603 other special tests.

The **Clinical Immunology Division** provides a wide range of laboratory tests for diagnosis and monitoring of immunodeficiency, autoimmunity, allergy and monoclonal gammopathy. Referral service is also provided to other hospitals/clinics in and outside Hong Kong. The laboratory handles clinically relevant immunochemistry, autoantibody, flow cytometry, lymphocyte and neutrophil function tests. In 2010, approximately 132,230 specimens were received and over 230,000 tests were performed.
The **Clinical Biochemistry Division** provides both routine and special testing as well as consultation services to Queen Mary Hospital. It also provides special diagnostic and consultation services, largely on a referral basis, to both the public and private healthcare sectors of Hong Kong outside Queen Mary Hospital. The repertoire of tests provided by the Division includes assays for hormones, immunosuppressants, therapeutic drug monitoring, heavy and toxic metals in biological fluid and tissues, trace elements, esoteric lipids and intermediates in cholesterol biosynthesis, clinical toxicology, biochemical and genetic work-up for neurometabolic diseases and inherited metabolic diseases. A range of tests important for clinical emergencies are provided on an urgent basis round-the-clock and covered by duty biochemist on roster. In 2010, up to 3,000 specimens were received daily and nearly 5.5 million tests were performed, including tests for clinical drug trials. It also provides special diagnostic support and consultation service to hospitals in Macau on a referral basis. The Division has been involved in the training of endocrinologists in Hong Kong and clinical laboratory personnel from Macau since the late 90s.

In 2010, the Division performed over 4,600 HLA typing and 7,250 anti-HLA antibody tests, 25 living related crossmatch for kidney transplantations, 39 cadaveric donor workup, 376 confirmatory typing for unrelated HSCT/BMT, 370 disease associated genotype tests and over 1,100 drug-related HLA genotype tests.

The **Transplantation and Immunogenetics Division (T&I)** provides specialized histocompatibility testing for patients awaiting bone marrow and organ transplantation, and for patients with diseases associated with certain HLA antigens and pharmacogenetics service. The T&I works closely with all renal centers in Hong Kong to provide HLA typing, anti-HLA antibody test and lymphocyte crossmatch for patients worked up for kidney transplants and also supports the Bone Marrow Transplant Centres in Queen Mary Hospital and Prince of Wales Hospital. The T&I also works with the Transplant Coordinators to help carry out the wishes of deceased organ donors in Hong Kong and the Hong Kong Bone Marrow Donor Registry for finding the best matched unrelated donors or cord blood units.

**Partnership with the Department of Pathology and Clinical Biochemistry, Queen Mary Hospital**