

# Introduction

This course covers the principles of clinical research, research study design, practical aspects of clinical trials, health statistics, disseminating clinical research, and an introduction to the principles of basic science and bench work. This program will provide participants with a comprehensive foundation in the present state of health research methodology by covering basic science methods, evidence based-medicine principles, levels of evidence, research ethics, funding opportunities, as well as data management and budgeting.

A module will also be dedicated to clinicians interested in teaching and mentoring residents in research through educational activities.

In addition to the official program, this course offers opportunities to meet experts in the field and establish relationships with other colleagues. The program also includes multiple integrated panel discussions and focuses on resident research.

## TARGET AUDIENCE

This course is open to all Orthopaedic surgery residents and faculty. Non-Orthopaedic residents, nursing or allied health staff with a keen interest in gaining a foundation in clinical research are also welcome to register.

Please register at:

<http://ams.edu.sg/colleges/CSS/calendar-of-events>

# Programme

## Educating the Faculty: How to Teach Research

7:30 am	Registration	
8:00 am	Welcome and Overview	Ernest Kwek
8:05 am	Principles of Research Education	Mo Bhandari
8:20 am	Teaching EBM on the Fly	Brad Petrisor
8:35 am	Running an Evidence Based Journal Club	Group Activity
9:00 am	Being a Good Research Mentor	Howe Tet Sen
9:15 am	Engaging Residents in Research	Ernest Kwek
9:25 am	Q&A	
9:30 am	Tea	

## Principles of EBM

10:00 am	Hierarchy of Evidence	Ivan Chua
10:10 am	Basic Science Research	Duncan McGrouther
10:30 am	Biomechanics Research	Chou Siaw Meng
10:50 am	Survey Design and Execution	Brad Petrisor
11:05 am	Randomised Controlled Trials	Mo Bhandari
11:20 am	Meta-analysis	Russell Gruen
11:35 am	Economic Analysis	Brad Petrisor
11:50 am	Panel Discussion	All Faculty
12:00 pm	Master's Speech	S R E Sayampanathan
12:10 pm	Lunch	

## Practical Application

12:55 pm	Language of EBM/ Critical Appraisal	Brad Petrisor
13:10 pm	Practical Statistics	Mo Bhandari
13:25 pm	How to Prepare a Good Study Protocol	Noriza Bte Mustapa
13:35 pm	Role of a Research Coordinator	Noriza Bte Mustapa
13:45 pm	Ethics Approval	Francis Wong
13:55 pm	Budget Basics	Francis Wong
14.10 pm	Data Management: Design and Collect Data	Russell Gruen
14:20 pm	Conducting a Successful Prospective Trial	Mo Bhandari
14:40 pm	Panel Discussion : Barriers to research and Solutions	All Faculty
14:55 pm	Tea	

## Completing the Cycle of Research

15:15 pm	Resident Experience with Research	Sean Ho
15:30 pm	Writing a Publishable Paper: Practical Tips	Russell Gruen
15:50 pm	Case Study: Manuscript Submission to Revisions to Submission	Brad Petrisor
16:05 pm	The Art of Collaboration in Research	Howe Tet Sen
16:20 pm	Knowledge Translation: Presentation Skills	Ernest Kwek
16:35 pm	Case Study: From Idea to Completion of a Large Clinical Trial	Mo Bhandari
16:50 pm	Panel Discussion	All Faculty
17:00 pm	End	



# Singapore Principles and Practice of Clinical Research Course

16 September 2017

8:00am – 5:00pm

Learning Studio @ LKC



Sponsors:



## Faculty Biography



**Dr Mohit Bhandari**  
**Head, Academic Division**  
Professor and Chair of the Division of Orthopaedic Surgery at McMaster University

Professor Bhandari holds the distinction of University Scholar and holds a Canada Research Chair in Evidence-Based Orthopaedics. He serves as the Associate Chair-Research in the Department of Surgery at McMaster University. He received his Masters Degree in Clinical Epidemiology and Biostatistics from McMaster University and his PhD Degree from Goteborg University (Sweden). He is recognized as the 'global leader' in the promotion of evidence-based surgery and orthopaedic research receiving the fields highest awards. He has been acknowledged among the top 10 most cited orthopaedic fracture surgeons in the world. To this end, he conducts major multinational, transformative randomized clinical trials, publishes actively in the top medical journals, lectures to thousands around the world, and edits several of his field's major textbooks promoting research methods and evidence-based orthopaedics



**Dr. Bradley Allan Petrisor**  
**Associate Professor**  
Hamilton General Hospital

Dr Petrisor has been active staff at the Hamilton Health Sciences with a clinical orthopaedic trauma and complex foot and ankle reconstruction practice for the past 12 years. He is also currently the Program Director of the Orthopaedic Training program at McMaster University and has recently finished his term as the orthopaedic trauma education chair of the Canadian Orthopaedic Association. He has played key roles in some of the largest international orthopaedic trials conducted to date. Dr. Petrisor has tutored extensively at McMaster's "How to Teach and Practice Evidence Based Medicine" alongside world renowned experts in the field and has been a part of the Principles and Practice of Research faculty for the past 10 years.



**Assoc Professor Chou Siaw Meng**  
**Associate Professor**  
School of Mechanical & Aerospace Engineering  
College of Engineering  
National Technological University

Assoc Professor Chou Siaw Meng is currently in the School of Mechanical & Aerospace Engineering of the Nanyang Technological University. His research interests include biomechanics and design of medical devices. He has been involved in the Orthopaedic Biomechanics Course organised for our Singapore Orthopaedic Surgery residents since 1999.

## Faculty Biography



**Dr Duncan Angus McGrouther**  
**Senior Consultant**  
Department of Hand Surgery  
Singapore General Hospital

Professor Duncan Angus McGrouther was appointed to the UK's first Chair of Plastic Surgery at University College London and subsequently recruited to Manchester, where he developed a large laboratory group investigating fields of wound healing relevant to reconstructive surgery. Additionally, he has been involved in pioneering clinical trials involving new pharmaceuticals to prevent scarring or tissue engineered constructs to facilitate nerve repair. He has been instrumental in facilitating the translation of a number of basic science research projects to clinical application. He has collaborated widely and formed the largest peripheral nerve study group in Europe. Professor McGrouther has also been instrumental in developing novel teaching aids, such as three dimensional dissections and reconstructions of the hand. He was nominated as one of the ten foremost surgeons in the UK.



**Professor Russell Gruen**  
**Professor of Surgery & NTU Director**  
Lee Kong Chian School of Medicine &  
NIT in Health and Medicine, NTU

Professor Gruen is Professor of Surgery in LKCMedicine and Director of the Nanyang Institute of Technology in Health and Medicine (NITHM), at Nanyang Technological University (NTU). He is also a Consultant General Surgeon at Tan Tock Seng Hospital. Prof Gruen was Professor of Surgery and Public Health at Monash University, Director of Australia's National Trauma Research Institute, and a trauma surgeon at The Alfred, the busiest trauma centre in Australia. In Australia, as lead investigator, he secured over \$16 million of competitive research funding. He has published over 160 articles and has chaired the NHMRC Research Translation Committee for Injury Prevention, the Evidence and Research Committee of the WHO Global Alliance for Care of the Injured.



**Assoc Professor Howe Tet Sen**  
**Vice-Chair Research,**  
**Musculo-Skeletal Academic Clinical Program**  
Singapore General Hospital

Associate Professor Howe is a Senior Consultant and past Director of Trauma Service with the Singapore General Hospital. He is widely published, especially in the area of atypical fractures, and has many on going international and local collaborations in research.

## Faculty Biography



**Assoc Professor Ernest Kwek**  
**Senior Consultant**  
Tan Tock Seng Hospital

Dr Kwek is a Senior Consultant and Chief of the Trauma Service in Tan Tock Seng Hospital. In addition he is the Program Director of the National Healthcare Group Orthopaedic Surgery Residency Program, for which he also serves as a mentor for the Clinician Scientist Residency. He sits on the AOTrauma Asia Pacific Research Committee and has several grants and publications, including a top cited article in the Injury Journal.



**Dr Ivan Chua**  
**Consultant**  
Tan Tock Seng Hospital

Dr Chua is a Consultant and Trauma Surgeon with the Tan Tock Seng Hospital. He is active in research and a past recipient of the Singapore Orthopaedic Association Young Orthopaedic Investigator Award.



**Dr Francis Wong**  
**Senior Resident**  
National University Health System

Francis Wong is the pioneer resident in the Clinician Scientist Track for NUHS's Orthopaedic Surgery Residency Programme. He completed his Masters of Clinical Investigation (MCI), and recently passed his FRCSed (Orth) examination. He is now in his active research year and is pursuing a part-time PhD in NUS. Dr Wong is active in both basic and clinical research, and has published more than 25 peer reviewed journal articles to date. He won the Singapore Orthopaedic Association Young Orthopaedic Investigator's Award in 2013 and currently holds several national level grants.



**Dr Sean Ho**  
**Senior Resident**  
National Healthcare Group

Dr Ho is a final year resident with the National Healthcare Group Orthopaedic Surgery Program. He won several research awards and has also received media attention for his work.

**Ms Noriza Binte Mustapa**  
**Manager**  
Tan Tock Seng Hospital

Ms Noriza is the Manager of the Clinical Research and Innovation Office at the Tan Tock Seng Hospital. Her vast experience includes all stages of clinical trials: from planning to logistics, initiation, management, coordination, monitoring and closing of the clinical trial.