

University of Calgary

Faculty of Medicine

## **CURRICULUM VITAE**

### **I. BIOGRAPHICAL DATA**

Name: Irene Wai Yan Ma  
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E-mail: [ima@ucalgary.ca](mailto:ima@ucalgary.ca)  
  
Present Rank: Professor  
Department: Medicine  
Faculty: Faculty of Medicine  
Institution: University of Calgary

### **II. ACADEMIC RECORD**

Final Degree: Doctor of Philosophy  
Date completed: 2015/02  
Specialty: Medical Education, Community Health Sciences  
Institution/City/Country: University of Calgary, Calgary, Canada

#### **i. Undergraduate**

1989/09 - 1993/06 BSc (Hons), Toxicology, University of Toronto, Toronto, Ontario, Canada

#### **ii. Graduate and Post-Doctoral**

1994/06 - 1998/05 MD, Medicine, University of British Columbia, Vancouver, British Columbia, Canada  
2001/09 - 2002/09 MSc, Epidemiology, Stanford University, Stanford, California, United States  
2010/01 – 2015/02 PhD, Medical Education, Community Health Sciences, University of Calgary, Calgary, Alberta, Canada

#### **iii. Special professional**

1998/07 - 2001/06 Internal Medicine Residency, University of British Columbia, Vancouver, British Columbia  
2000/07 – 2001/06 Chief Medical Resident, Vancouver General Hospital, University of British Columbia, Internal Medicine Residency, Vancouver, British Columbia  
2001/07 - 2003/06 Nephrology Fellowship, University of British Columbia, Vancouver, British Columbia  
2003/07 - 2004/06 Internal Medicine Fellowship, University of British Columbia, Vancouver, British Columbia

2001/07 - 2004/06 Clinical Investigator Program, Royal College of Physicians and Surgeons of Canada  
2015/08 - 2016/07 Research Scholar, Emergency Ultrasound Research Fellow, Massachusetts General Hospital, Emergency Medicine - Ultrasound in Emergency Medicine, Boston, Massachusetts, United States

#### iv. Select Licensure, Certification and Boards

2003/06 Internal Medicine, The Royal College of Physicians and Surgeons of Canada  
2003/10 Diplomate, American Board of Internal Medicine, #209350  
2004/01 Fellow, The Royal College of Physicians and Surgeons of Canada  
2004/09 Nephrology, The Royal College of Physicians and Surgeons of Canada  
2009/09 FACP, American College of Physicians  
2016/11 RDMS, American Registry for Diagnostic Medical Sonography  
2017/09 RDCS, Registered Diagnostic Cardiac Sonographer, American Registry for Diagnostic Medical Sonography

#### III. SELECT AWARDS AND DISTINCTIONS PAST 5 YEARS (national awards underlined)

2020/09/18 2020 CME&PD Course Innovation Award, Office of Continuing Medical Education & Professional Development at the University of Calgary. Awarded to the planning committee of the Personal Protective Equipment (PPE) Certification Course for a course that best embodied leading principles in educational development, delivery, or assessment.

2020/05/21 2020 PGME Award for Resident Mentorship, 2-4 Year Programs. Postgraduate Medical Education, Cumming School of Medicine. *“This award recognizes the outstanding contributions of a faculty member who serves as a mentor, role model, and/or advocates for residents”*

2019/01/09 Honour Roll. In recognition of outstanding teaching at the Cumming School of Medicine, Awarded by the Class of 2019.

2019/11/22 Research Preceptor Award, Department of Medicine, University of Calgary

2015-2019 Top grade reviewer for Annals of Internal Medicine 2018 letter of recognition, Annals of Internal Medicine

2019/02/09 Clerkship Teaching Award: Honourable Mention Award, selected by the Class of 2018 for contributions and teaching in Internal Medicine Clerkship

2018/11/13 Peak Scholar in Entrepreneurship, Innovation & Knowledge Engagement, University of Calgary – Awarded for demonstrated excellence in entrepreneurship, innovation and/or knowledge engagement, where the individual’s academic has had a proven impact outside of the academy.

2018/08/17 2018 Canadian Society of Internal Medicine Osler Award. (Awards presented annually to individuals demonstrating excellence in achievement in the field of General Internal Medicine, either in clinical practice, research, medical education, specialty development or health promotion).

2018/04/26 Nominated for and chosen as *Finalist* for Specialist Physician of the Year Award (2018), Department of Family Medicine, Calgary, Zone

2016-2017 Top 10% Reviewer Letter of Recognition, Journal of Hospital Medicine

2017/11/23 Dr. John M. Conly Innovation Award, Department of Medicine, University of Calgary

2017/11/23 Department of Medicine Silver Finger Award, Department of Medicine, University of Calgary

2016/04 AFMC John Ruedy Award for Innovation in Medical Education, The Association of Faculties of Medicine of Canada

#### **IV. ACADEMIC APPOINTMENTS**

|                         |  |
|-------------------------|--|
| 2020/09 – present       | Research Staff, Division of Ultrasound in Emergency Medicine, Massachusetts General Hospital, Boston, MA, USA                              |
| 2020/07 – present       | Professor, Department of Medicine, University of Calgary, Calgary, Alberta, Canada   |
| 2019/04/01 – 2024/03/31 | The John A. Buchanan Chair in General Internal Medicine, University of Calgary   |
| 2017/09 – present       | Joint Appointment, Department of Community Health Sciences, University of Calgary  |
| 2018/07 – 2020/06       | Associate Professor (with tenure), Department of Medicine, University of Calgary, Calgary, Alberta, Canada                                 |
| 2013/04 - 2018/06       | Associate Professor, Department of Medicine, University of Calgary, Calgary, Alberta, Canada   |
| 2009/08 - 2013/03       | Assistant Professor, Department of Medicine, University of Calgary, Calgary, Alberta, Canada   |
| 2009/07 - 2010/07       | Visiting Clinical Assistant Professor, Department of Medicine, University of British Columbia, Vancouver, British Columbia, Canada         |
| 2007/01 - 2009/06       | Research Scientist, Centre for Health Evaluation and Outcome Sciences, University of British Columbia, Vancouver, British Columbia, Canada |
| 2004/06 - 2009/06       | Clinical Assistant Professor, Department of Medicine, University of British Columbia, Vancouver, British Columbia, Canada                  |

#### **V. EDUCATIONAL ACTIVITIES**

##### **Undergraduate Medical Education Teaching**

|              |   |
|--------------|---|
| 2009-present | Procedural training, Course 8; Simulation-based training, Course 3; Ultrasound-guided anatomy; Ultrasound-guided physical examination |
|--------------|---|

##### **Graduate (course and student supervision)**

##### **Graduate Courses**

|            |   |
|------------|---|
| 2019-2020  | MDCH 628 - Teaching, Learning and Curriculum Design, Lecture on Teaching Psychomotor Skills and Research Assessment of Psychomotor Skill Development (online). University of Calgary. |
| 2013/11/12 | MDSC 736 - Medical Education Cognition Principle, Lecture, University of Calgary, G732  |
| 2012/03/05 | MDSC 755.02 - Lecture, The University of Calgary, HSC   |

##### **Graduate Student Supervision**

|                         |  |
|-------------------------|--|
| 2019/08 – present       | Committee Member, PhD Graduate Student, (Medical Education, Community Health Sciences)     |
| 2017/03 - present       | Committee Member, MSc Graduate Student, (Medical Education, Community Health Sciences)     |
| 2012/09/21 – 2013/04/16 | Supervisor, MSc Graduate Student, PSYC 624.02 Research in Cognition, University of Calgary |

##### **Examination**

|                         |  |
|-------------------------|--|
| 2020/10/29              | Internal Examiner, Ph.D. Field of Study/Candidacy Exam. Community Health Sciences, University of Calgary   |
| 2020/04/24 – 2020/06/24 | External Examiner, M.Sc. Thesis Defense, Clinical Epidemiology and Health Care Research, Institute of Health Policy, Management and Evaluation, University of Toronto. |

##### **iii. Postgraduate**

## **Postgraduate Medical Education (PGME) Teaching**

2009 – present                      Procedural bootcamp, Ultrasound elective; Academic Half Day

## **PGME Research Supervision**

2009 – present                      16 postgraduate trainees, University of Calgary  
2005 – 2009                         8 postgraduate trainees, University of British Columbia

## **iv. Continuing Medical Education (past 5 years)**

2020/09/19 – 2020/09/20    Hybrid scan mentor. AIUM Hybrid Point-of-Care Ultrasound Course: Learn, Scan, Collaborate

2020/05/01 – 2020/09/08    Course Co-chair (with Dr. Rahim Kachra). The POCUS Disinfection Course. University of Calgary Continuing Medical Education and Professional Development. Available at: <https://cumming.ucalgary.ca/cme/courses/format/online/POCUS>

2020/05/06                        Course Co-Director (with Mike Wagner and Robert Smola). General Internal Medicine Point-of-Care Ultrasound Pre-course. Birmingham, AL. Conference cancelled.

2020/3/25 – 2020/04/02    Course Co-Chair. Personal Protective Equipment Certification Course. University of Calgary. Cumming School of Medicine, Continuing Medical Education and Professional Development.

2019/11/09 – 2019/11/10    Abdominal Free Fluid and POCUS Lecture,  
POCUS of the Urinary System Lecture,  
Hands-on Workshop Instructors, American College of Physicians POCUS Foundational Skills for Internists. Rosemont, IL.

2019/09/13                        Hands-on Workshop Instructor. Team Approach to Ultrasound Learning. 7<sup>th</sup> World Congress Ultrasound in Medical Education. University of California Irvine, CA.

2019/08/23 – 2019/08/24    Canadian Resuscitative Ultrasound Course. Faculty. Edmonton, AB.

2019/07/29 – 2019/08/02    Weill Cornell Medicine HM-POCUS Course. Faculty. New York, NY.

2019/07/20 – 2019/07/21    Hands-on Instructor. 2019 Point-of-Care and General Medicine Ultrasound Course, AIUM/OHSU, Portland, OR.

2019/07/10                        Invited Instructor. 2019 National Acute Critical Events Simulation (ACES) Pre-course (POCUS). Royal College of Physicians and Surgeons of Canada. Calgary, AB. Evaluation score 4.8 out of 5 from 20 learners

2019/05/11                        Hands-on Instructor. 2019 Society of General Internal Medicine SGIM Annual Meeting Extended Learning Workshop: Point of Care Ultrasound (POCUS) for the General Internist. Washington, DC

2019/04/09 - 2019/04/10    Hands-on Instructor. ACP Pre-course 1913- Point-of-Care Ultrasound for Internists and Hospitalists. Philadelphia, PA

2019/02/11 – 2019/02/15    Weill Cornell Medicine HM-POCUS Course. Faculty. New York, NY.

2018/10/10                        Workshop, Simulation-based Ultrasound-guided Procedure Workshop. Course Director. CSIM Annual Meeting 2018, Banff, AB.

2018/07/21 – 2018/07/22    Workshops, Point-of-Care & General Medicine Ultrasound, American Institute of Ultrasound in Medicine (AIUM) Postgraduate Course. Oregon Health and Science University, Portland, Oregon

2018/04/17 - 2018/04/18    Workshops / Seminars, ACP Internal Medicine Meeting Pre course Point-of-Care Ultrasound for Internists and Hospitalists, Invited instructor, New Orleans, LA

2018/03/03                        Invited Workshop Instructor, IP Resuscitation SKanapalouza, SASKSONO18, University of Saskatchewan, Saskatoon

2018/02/13                        Department of Medicine Grand Rounds, Point-of-Care Ultrasound for Internal Medicine: Deus ex machina or adding noise to chaos. University of Calgary

2017/11/03                        Faculty; Simulation Educators Training (SET) The Principles of assessment in simulation supplement - SET-PASS Course. The Royal College of Physicians and Surgeons of Canada.

|                         |   |
|-------------------------|---|
|                         | Montreal, QC  |
| 2017/09/13              | Systematic Reviews and Meta-analysis, 1 <sup>st</sup> Annual Office of Surgical Fellowship Principles of Research Course, University of Calgary                             |
| 2017/04/08              | Workshop, Saskasono 2017, 2nd Annual Clinical Ultrasound Conference, SKanapalouza, Focused cardiac scan, Invited instructor, Saskatoon, SK                                  |
| 2017/03/28 - 2017/03/29 | Workshops / Seminars, ACP Internal Medicine Meeting Pre course Point-of-Care Ultrasound for Internists and Hospitalists, Invited instructor, San Diego, CA                  |
| 2016/10/23              | Ultrasound for Physical Examination, Workshops / Seminars, 4th World Congress Ultrasound in Medical Education, Lubbock, Texas   |
| 2016/05/03 - 2016/05/04 | Workshops / Seminars, ACP Internal Medicine Meeting Pre course Point-of-Care Ultrasound for Internists and Hospitalists, Washington DC                                      |
| 2016/04/13              | Emergency Medicine: Updates & Current Practices April 5-15, 2016; Ultrasound, Workshops / Seminars, Harvard Medical School, Massachusetts General Hospital                  |
| 2016/04/13              | Emergency Medicine: Updates & Current Practices April 5-15, 2016; Introduction to Lung Ultrasound, Lecture, Harvard Medical School, Massachusetts General Hospital          |
| 2015/12/12              | Emergencies and Procedures in Pediatrics, Workshops / Seminars, Harvard Medical School, Marriott Long Wharf, Boston, MA   |
| 2015/11/08              | Harvard Trauma Symposium ultrasound Pre-course, Workshops / Seminars, Harvard Medical School, Fairmont Copley   |
| 2015/10/03              | 8th Annual MACEP Ultrasound Course. Workshop leader (Trauma/Abdomen, Vascular/Procedures), Workshops / Seminars, Massachusetts College of Emergency Physicians, Waltham, MA |

## **v. Community Education**

|                         |   |
|-------------------------|---|
| 2018-2020               | Community Paramedics Laboratory Tests Lecture (electrolytes, for Complex Care Hub)                                  |
| 2016/03/03              | Physician Assistant Training, Personnel Development, Massachusetts General Hospital, Massachusetts General Hospital |
| 2016/01/14              | Physician Assistant Training, Personnel Development, Massachusetts General Hospital, Massachusetts General Hospital |
| 2015/10/08 - 2015/12/31 | Physician Assistant Training, Personnel Development, Massachusetts General Hospital, Massachusetts General Hospital |

## **Community Education Research Supervision**

|                   |                                     |
|-------------------|-------------------------------------|
| 2014/01 – 2015/09 | Primary Supervisor, nursing student |
|-------------------|-------------------------------------|

## **VI. SELECT ADMINISTRATIVE RESPONSIBILITIES**

### **i. Departmental**

|                          |  |
|--------------------------|--|
| 2020/03/26 – 2020/05/011 | Co-Officer, MD Training, Calgary Zone Medical Emergency-Pandemic Operational Command (MEOC), Department of Medicine                              |
| 2020/03/21 – 2020/03/26  | Member, MD Training subgroup, Calgary Zone Medical Emergency-Pandemic Operational Command (MEOC), Department of Medicine                         |
| 2014/05/13 - present     | Director, GIM, Divisional Director of Procedures, US and Simulation - University of Calgary  |
| 2012/07/03 - present     | Member, Internal Medicine Resident Research Committee - University of Calgary  |
| 2011/11/15 - present     | Assistant Program Director, Assistant Program Director of Ultrasonography and Procedural Skills - Residency Program Committee, Internal Medicine |
| 2009/08/01 - 2014/05/13  | Director, Director of Simulation - GIM - The University of Calgary   |

2007/01 - 2009/06 Associate Program Director, Medicine, University of British Columbia, Vancouver, British Columbia, Canada

## **ii. Faculty**

2012/06/07 - present Member, Board Member - Conjoint Health Research Ethics Board  
2009/08/01 - present Leader, Focus Area: Clinical Simulation - W21C  
2014/06/05 Member, Office of Health and Medical Education Scholarship Executive Committee, University of Calgary

## **iii. University**

2017/07 – 2020/06 Course 8 Course Leader – Procedures & Bedside Ultrasound, UME, University of Calgary  
2017/07 – 2019/04 Course 8 – Evaluations Clerkship OSCE, UME, University of Calgary  
2012/07 – 2017/06 Co-Chair, Co-Chair of Course 8 - University of Calgary  
2009/08/01 – 2017/06 Chair, Unit Chair of Course 8 - Simulations/Procedural Skills (0.1 FTE) - University of Calgary

## **iv. Hospital**

2008/11 - 2009/06/30 Member, Medication Safety Committee, Vancouver General Hospital, Department of Medicine  
2006/05 - 2009/06/30 Chair, PHC Clinical Indicator Working Group, Providence Health Care

## **v. Regional Health Authority**

2009/09 - 2013/12/30 Member, eSIM Provincial Simulation Operations Committee - eSIM

## **VII. PROFESSIONAL ACTIVITIES**

### **Select Journal Reviews (2004-present)**

Academic Medicine (17)  
Advances in Health Sciences Education (10)  
Annals of Internal Medicine (15)  
BMC Medical Education (5)  
Chest (2)  
Journal of Hospital Medicine (15)  
Journal of Ultrasound in Medicine (2)  
Medical Education (2)  
Simulation in Healthcare (16)  
The Ultrasound Journal/Critical Ultrasound Journal (5)

### **Editorships**

2012/11 - present Associate Editor, Canadian Medical Education Journal

### **National and International Committees**

2019/05/10 – present Vice-chair, Society of General Internal Medicine (SGIM) Internal Medicine Point of Care Ultrasound (IMPOCUS) Interest Group  
2019/04/10 – 2022/04 Elected Board of Governor, American Institute of Ultrasound in Medicine (AIUM)

|                         |   |
|-------------------------|---|
| 2019/01/11 – present    | Invited Member, American College of Physician Advisory Group on Point-of-Care Ultrasound (POCUS)  |
| 2018/09/12 – present    | Member-at-Large, Canadian Association for Medical Education (CAME) Foundation Board of Directors  |
| 2018/07/25 – 2019/03/20 | Invited Member; American Institute of Ultrasound in Medicine Clinical Standards Committee Expert Advisory Group   |
| 2018/02/01 - present    | Advisory Board Member, Consultant for Internal Medicine credentialing, Canadian Point of Care Ultrasound Society  |
| 2017/11/04              | Co-Chair, 2 <sup>nd</sup> Annual Canadian Internal Medicine Ultrasound (CIMUS) meeting (with Dr. Shane Arishenkoff) – Canadian Society of Internal Medicine Annual Meeting, Toronto, ON   |
| 2017/11/02              | Co-Chair, Simulation Interest Group: CBD and Beyond. (with Dr. Luke Devine) - Canadian Society of Internal Medicine Annual Meeting, Toronto, ON   |
| 2017/10/10 – 2019/07/18 | Invited Member, American Institute of Ultrasound in Medicine, Curriculum Development Task Force 1 (Chair, John Pellerito)   |
| 2016/10/29 - present    | Chair, Establishment of consensus-based curriculum - Canadian Internal Medicine Ultrasound Curriculum Committee   |
| 2016/01/20 – 2017/08/31 | Invited Faculty for content development, Simulation Educators Training – Principles of Assessment in Simulation Supplement (SET-PASS), Royal College of Physicians and Surgeons of Canada |
| 2014/11/18 - present    | Member, Education Committee - Canadian Society of Internal Medicine   |
| 2014/03/06              | Chair, 2nd Annual Western Canadian Internal Medicine Ultrasound Curriculum Committee, University of Calgary, Calgary, Alberta, Canada   |
| 2013/05/31 - present    | Vice-Chair/Deputy Director, OSCEs, Examination Boards, Internal Medicine - Royal College of Physicians and Surgeons of Canada   |
| 2013/06/10              | Chair, Western Canadian Internal Medicine Ultrasound Curriculum Committee, University of Calgary, Calgary, Alberta, Canada  |
| 2011/11 - present       | Member, Executive Committee, Examination Boards, Internal Medicine - Royal College of Physicians and Surgeons of Canada   |
| 2010/08 - present       | Member, Examiner, Examination Boards, Internal Medicine - Royal College of Physicians and Surgeons of Canada  |
| 2000/07 - 2004/07       | Member, Clinician Investigator Program Advisory Committee - Royal College of Physicians and Surgeons of Canada  |

### **External Review for Tenure/Promotion**

|                         |  |
|-------------------------|--|
| 2019/12/09 – 2019/12/11 | University of Ottawa, Ottawa, ON   |
| 2019/08/07 – 2019/09/03 | University of Nebraska, College of Medicine, Omaha, NE, USA                                |
| 2017/09/11 - 2017/10/01 | School of Medicine, Oregon Health & Science University, Portland, OR, USA                  |
| 2016/11/02 - 2016/12/03 | Faculty of Medicine, Memorial University of Newfoundland, St. John's, Newfoundland, Canada |

### **VIII. RESEARCH SUPPORT (PAST 5 YEARS)**

|                         |  |
|-------------------------|--|
| 2020/04/01 – 2023/04/01 | \$416,924, Funded, <i>Co-Applicant</i> , Development of a typology for patient navigation: Defining the essence of a complex intervention. Canadian Institutes of Health Research Project Grant. Principal Investigator: Dr. Karen Tang  |
| 2020/01/24 – 2021/03/01 | \$9,856, Funded, <i>Co-investigator</i> , The impact of accent on assessment of residents by physicians, nurses and patients, 2019-2020 Office of Health and Medical Education Scholarship (OHMES) Health Science and Medical Education Research and Innovation Funding Competition. Principal Investigator: Dr. Shannon Ruzycki |
| 2019/04/01 – 2024/03/31 | \$170,000, The John A. Buchanan Chair in General Internal Medicine, University of Calgary  |

|                   |  |
|-------------------|--|
| 2019/01 – 2020/03 | \$8,500, Funded, <i>Co-investigator</i> , 2018-2019 Office of Health and Medical Education Scholarship (OHMES) Health Science and Medical Education Research and Innovation Funding Competition. Principal Investigator: Dr. Rahim Kachra  |
| 2018/12 – 2019/09 | \$1,500, Funded, <i>Mentor</i> , 2019 CSIM Education and Research Fund. Principal Investigator: Dr. Anshula Ambasta  |
| 2018/06 – 2020/05 | \$15,000, Funded, <i>Co-investigator</i> , Optimizing high-fidelity simulation for teaching obstetric internal medicine concepts: A lesson development plan and evaluation of the impact of stress and cognitive load in simulation on learning outcomes. 2018 University of Calgary Teaching and Learning Grants. Principal Investigator: Dr. T. Lee-Ann Hawkins. |
| 2018/05 – 2018/08 | \$40,150, Funded, <i>Principal investigator</i> , PGME Infrastructure and Simulation Teaching Funding. University of Calgary.  |
| 2018/02 - 2019/03 | \$7,488, Funded, <i>Co-investigator</i> , Assessing learning curves of internal medicine trainees in point-of-care ultrasound (POCUS), 2017-2018 OHMES Health Science and Medical Education Research and Innovation Funding Competition. Principal Investigator: Dr. Janeve Desy   |
| 2018/02 – 2019/03 | \$30,000, Funded, <i>Education Lead</i> , 2018 Department of Medicine Clinical Analytics Award Competition. Principal Investigator: Dr. Anshula Ambasta  |
| 2017/04 – 2018/03 | \$31,016.62, Funded, <i>Education Lead</i> , 2017 Chief Medical Office/Calgary Zone Medical Affairs Quality Improvement Initiative, Alberta Health Services. Optimization of Laboratory Test Utilization on the Internal Medicine Service. Principal Investigator: Dr. Anshula Ambasta   |
| 2017/02 – 2018/12 | \$1,500, Funded, <i>Co-Investigator</i> , Development of minimal criteria for lung ultrasonography in internal medicine. 2017 CSIM Education and Research Fund. Principal Investigator: Dr. Janeve Desy  |
| 2016/07 – 2019/12 | \$37,457.49, Funded, <i>Principal investigator</i> , Development and standard setting for the ultrasound directly observed tool for point of care ultrasound competence, 2016 Medical Council of Canada Clinical Assessment Grant  |
| 2016/06 – 2017/06 | \$20,000, Funded, <i>Co-investigator</i> , Is high-fidelity simulation an effective educational tool in obstetric medicine? Examining the potential impact of emotion and cognitive load on knowledge acquisition and physician performance, 2016 University of Calgary Teaching and Learning Grant. Principal Investigator: Dr. T. Lee-Ann Hawkins.               |
| 2015/07 - 2016/06 | \$33,900, Funded, <i>Co-investigator</i> , Defining Entrustable Professional Activities for Procedural Skills, 2015 Medical Council of Canada Research and Development Grant. Principal investigator: Debra Pugh.  |

## **X. INVITED ADDRESSES / PRESENTATIONS**

### **i. Invited addresses (past 5 years)**

|            |  |
|------------|--|
| 2020/10/02 | Invited Presenter, Lung Scanning. SonoCon 2020 – Waves of Change Virtual Summit, Sonography Canada.  |
| 2020/05/20 | Invited Panelist, Canadian Society of Echocardiography, Canadian Cardiovascular Society, Canadian Critical Care Society webinar. A New Dawn. The rise of POCUS during the pandemic and beyond. Panel: Drs. Amer Johri, Sharon Mulvagh, Omid Kiamanesh, Irene Ma, Philippe Rola, Martin Albert. 220 attendees |
| 2020/04/04 | Invited Plenary Speaker. SASKSONO20, University of Saskatoon, Saskatoon. The Development of Canadian Ultrasound Consensus for Medical Education. Saskatoon, Saskatchewan, Canada, Conference canceled.   |
| 2020/02/18 | Invited Grand Rounds speaker: Department of Medicine Grand Rounds, Dalhousie University, Halifax Infirmary Site. Simulation-based Medical Education: Useful Tool or Just Another Gadget? Halifax, NS,  |
| 2020/02/18 | Invited plenary speaker, Teach the Teachers, Dalhousie University. Opportunities to Use Simulation in Medical Education. Halifax, NS,  |



- 2019/11/16 Invited presentation: Debate: Is physical examination still relevant in the 21<sup>st</sup> century? Rocky Mountain Internal Medicine 2019 Conference, Banff, AB,
- 2019/07/20 Invited presentation: Basic Abdominal POCUS for the General Internist. Point-of-Care & General Medicine Ultrasound, AIUM, ACP, Oregon Health & Science University, Portland, OR
- 2019/03/22 Invited Keynote co-Speaker: Innovation in Medicine. Drs. Irene Ma and Janeve Desy. Internal Medicine Chief Medical Resident Conference. Calgary, AB.
- 2019/02/18 Invited presenter: Asociación Mexicana en Ultrasonografía Crítica y Urgencias (AMUSCU): Ultrasonido “Point of Care” en Medicina Interna. Webinar hosted by AMUSCU, Monterrey, Nuevo Leon, Mexico.
- 2019/01/08 Invited panelist: World Federation for Ultrasound in Medicine and Biology (WFUMB): IMPOCUS: Current state and exciting future of ultrasound use in internal medicine. Tonelli AC, Acuna-Feoli JA, Ma I, Dversdal R. Chair: Blaivas M.
- 2018/03/20 Invited online presentation: Carotid Doppler. Technique for carotid blood flow and carotid flow time. Harbor-UCLA Medical Center, David Geffen School of Medicine at UCLA, Torrance, CA
- 2017/11/13 Invited Brown Bag Seminar Speaker: Cognitive Load and Clinical Medicine: Implications on Learning and Technical Skills. Human Systems Integration Division, NASA Ames Research Center, Moffett Federal Airfield, CA
- 2017/10/14 Invited presentation: POCUS Training in Internal Medicine in Canada: Past, Present, and Future. #PS.7. 5<sup>th</sup> World Congress Ultrasound in Medical Education, Montreal, QC
- 2017/07/22 Invited presentation: Basic Abdominal POCUS for the General Internist. Point-of-Care & General Medicine Ultrasound, AIUM, ACP, Oregon Health & Science University, Portland, OR
- 2017/04/08 Invited Plenary Speaker, Saskson 2017, 2nd Annual Clinical Ultrasound Conference, “Primary Care and POCUS: Why We Should Teach Even an Experienced Clinician New Tricks.” Royal University Hospital, University of Saskatchewan, Saskatoon, Saskatchewan, Canada,
- 2017/03/10 Invited workshop leader and speaker, Point-of-care Ultrasound for the Nephrologist, Alberta Kidney Day, Calgary, AB,
- 2016/07/23 Invited Speaker, Basic Abdominal POCUS for the General Internist, Point-of-Care & General Medicine Ultrasound, ACP, AIUM, SUSME, Portland, Oregon, United States,
- 2015/04/26 Panel Member, Simulation in Clerkship, 13th Canadian Conference on Medical Education; AFMC Clerkship Interest Group, Vancouver, British Columbia, Canada
- 2015/03/26 Presenter, Competency-based assessment of technical skills in bedside procedures: the good, the bad, and the ugly, CEEP Rounds, Toronto Western Hospital, The HoPingHong Center, Toronto, Ontario, Canada,

## ii. Presentations (past 5 years)

- 2020/11/07 Invited presentation: **Ma I.** To proceed, or not proceed, that is the question. Procedural Ultrasound. MTL-SONO. 2020 Virtual Point-of-Care Ultrasound Conference
- 2020/11/05 Invited panelist and mentor of trainee presentations. ACP Washington Chapter. Insights on the Role of POCUS: Quick Cases for Hospitalists. Dr. Michael Walsh and Dr. Tania Pannu
- 2020/09/19 Invited presentation: **Ma I.** Abdomen: FAST, GU. AIUM Hybrid Point-of-Care Ultrasound Course: Learn, Scan, Collaborate.
- 2020/05/08 Invited presentation: **Ma I.** Lung Scanning. SonoCon 2020. 2020 National Conference, Sonography Canada. Calgary, AB. Conference deferred.
- 2020/04/22 Invited presentation: **Ma I.** Abdominal Aortic Aneurysm. 2020 American College of Physician. Point-of-Care Ultrasound: Advanced Skills for Outpatient Practice pre-course. Los Angeles, CA, Conference canceled.
- 2020/04/20 Presenter: Mercia M, Kachra R, Brown A, **Ma I.** Exploring patient perceptions of learner competence on a medical teaching unit. Canadian Conference on Medical Education. Vancouver, BC. Oral abstract. Conference cancelled.
- 2020/04/19 Presenter: Ma I, Desy J, Noble V, Liteplo A, Olszynski P, Dumoulin E, Arishenkoff S, Dversdal R, Liu G, Buchanan B. Minimal criteria for lung ultrasonography. Canadian Conference on Medical Education. Vancouver, BC. Poster presentation. Conference cancelled.

- 2020/03/03 Co-presenter: Tan J-Y, **Ma I**, Kwong G, Read E. Feasibility of video recordings in veterinary medicine OSCEs. Ottawa Conference 2020. Technology and the OSCEs. Kuala Lumpur. Oral abstract.
- 2020/02/05 Invited presentation: **Ma I**. Approach to Shock. Weill Cornell Medicine HM-POCUS Course. Faculty. New York, NY.
- 2019/09/14 Invited Presentation: **Ma I**. Ready player one: educational theories that you need to know. 7<sup>th</sup> World Congress Ultrasound in Medical Education. University of California Irvine, CA.
- 2019/09/14 Invited Panel session: Chuck Wurster, Peter Steinmetz, Michael Woo, and **Irene Ma**. Ultrasound OSCEs and other methods of assessing skill competency. 7<sup>th</sup> World Congress Ultrasound in Medical Education. University of California Irvine, CA.
- 2019/08/26 Co-presenter: Tan Jean-Yin, **Ma I**, Kwong G, Read R. Inter-rater agreement between direct examiners and examiners viewing video recordings in veterinary medicine OSCEs. AMEE 2019 – An International Association for Medical Education, Vienna, Austria, August 24-28, 2019.
- 2019/07/31 Invited presentation: **Ma I**. Approach to Shock. Weill Cornell Medicine HM-POCUS Course. Faculty. New York, NY
- 2019/04/27 Invited Panel session: **Ma I**, Minardi J, Carnell, Wener S, Prats M. Constructing Constructive Criticism. Society of Clinical Ultrasound Fellowship Conference. Columbus, OH, April 27-28, 2019.
- 2019/04/15 Desy J, Coderre S, **Ma I**, Veale P, Paget M, Busche K, McLaughlin K. Global rating of OSCE performance is a better predictor of entrustment ratings than checklist scores. The Canadian Conference on Medical Education. Niagara Falls, ON, April 13-16, 2019.
- 2019/04/14 Oral presentation: Brotherston D, Desy J, Mintz M, **Ma I**. (PI of resident presenter). Competency-based internal medicine point-of-care ultrasound super user program. The Canadian Conference on Medical Education. Niagara Falls, ON, April 13-16, 2019.
- 2019/04/09 Invited presentation: **Ma I**. POCUS Cases. ACP Pre-course 1913 Point-of-Care Ultrasound for Internists and Hospitalists, American College of Physicians. Philadelphia, PA
- 2019/02/13 Invited presentation: **Ma I**. Shock. Weill Cornell Medicine HM-POCUS Course. Faculty. New York, NY
- 2018/07/21 Invited presentation: **Ma I**. Basic Abdominal POCUS for the General Internist. Point-of-Care & General Medicine Ultrasound, American Institute of Ultrasound in Medicine (AIUM) Postgraduate Course. Oregon Health and Science University, Portland, Oregon
- 2018/05/22 Co-presenter: Adamson R, Morris AE, Woan JS, **Ma IWY**, Schnobrich D, Soni NJ. Development of a multidisciplinary consensus-based focused cardiac ultrasound assessment tool. Poster presentation. American Thoracic Society International Conference. San Diego, CA.
- 2018/04/29 Co-presenter: Jalil R and **Ma I**. Point of care ultrasound training for family practitioners: a needs assessment study. Poster presentation. The Canadian Conference on Medical Education, Halifax, NS. 5 min presentation;
- 2017/11/18 Invited Workshop Leader: **Ma I**. What's Important in POCUS – Evidence, Myths and Wishful Thinking. Rocky Mountain/ACP/AMA Internal Medicine Meeting. Banff, AB
- 2017/11/02 Faculty co-supervisor: Ruzycki, S, Sharma N, **Ma I**, Kachra R. Characterizing and reducing iatrogenic complications on an inpatient internal medicine unit. CSIM Annual Meeting 2017, Toronto, ON; Winner of the QI Research Poster Competition.
- 2017/11/02 Faculty Supervisor, Pirani F, Crosby M, Muir O, Cowles J, Desy J, Sharma N, **Ma IWY**. Evaluating the quality and patient satisfaction of electronic discharge summaries: a mixed- method study. CSIM Annual Meeting 2017, Toronto, ON
- 2017/11/01 Course Director, Point-of-Care Ultrasound for the Internist. CSIM Annual Meeting 2017. Toronto, ON
- 2017/11/01 Faculty Supervisor, Schonbaert I. A revolutionary tool for airway management. W21C Innovation Forum. 2nd Place award, Commercial Innovations. Calgary, AB.
- 2017/10/14 Workshop Leader, Ultrasound Anatomy and Physiology Workshop. #WS.16. 5<sup>th</sup> World Congress Ultrasound in Medical Education, Montreal, QC
- 2017/10/14 Faculty Supervisor. Watson K, Lam A, Arishenkoff S, Halman S, Savegh M, Roberts JM, Gibson NE, Yu J, Myers K, Mintz M, **Ma IWY**. Point of care ultrasound training for internal medicine: a Canadian multi-center learner needs assessment study. #OS.4. 5<sup>th</sup> World Congress Ultrasound in Medical Education, Montreal

- 2017/10/13 Presenter, (Ultra)sounds like homework: pre-conference learning via video tutorials as a means of preparing attendees for discussions on communications of clinical ultrasound findings. Ma I, Buchanan B, Olszynski P. #OS.3. 5<sup>th</sup> World Congress Ultrasound in Medical Education, Montreal, QC.
- 2017/06/07 Co-presenter, Office of Health and Medical Education Scholarship Medical Education Leadership Lecture. Leadership in Medical Education Scholarship: Practical Approaches to Conducting Publishable Research. Drs. Jocelyn Lockyer and Irene Ma.
- 2017/04/08 Invited Panel Discussant, Sasksone 2017, 2nd Annual Clinical Ultrasound Conference, “Breaking Barriers and Normology,” Chair: Dr. Paul Olszynski. Panel: Dr. Brian Buchanan, Dr. Kish Lyster, Dr. Irene Ma, Dr. Dan Joo, Saskatoon, SK, Canada,
- 2016/10/25 Presenter, Correlation of carotid blood flow and carotid flow time with invasive cardiac output measurements, CHEST, Los Angeles, California, United States
- 2016/09/24 Co-chair, Focused Assessment With Sonography for Trauma (FAST) - WB05, Fourth World Congress Ultrasound in Medical Education, Lubbock, Texas, United States
- 2016/09/24 Workshop Leader, Renal/Bladder Ultrasound - WC01, Fourth World Congress Ultrasound in Medical Education, Lubbock, Texas, United States
- 2016/08/30 Presenter, Ultrasound-facilitated anatomy teaching and learning outcomes, AMEE 2016. An International Association for Medical Education, Barcelona, Barcelona, Spain
- 2015/11/13 Co-presenter, Remote just-in-time telementored trauma ultrasound: a double-factorial randomized controlled trial examining fluid detection and remote knobology control through a graphic user interface, North Pacific Surgical Association 102nd Annual Meeting, Portland, Oregon, United States
- 2015/10/24 Co-presenter, Introduction to Basic Ultrasound - USLS BL1, WINFOCUS, Boston, Massachusetts, United States
- 2015/09/07 Presenter, Diagnosing procedural incompetence: error-based checklist vs. conventionally-constructed checklist, The AMEE Conference 2015, International Association for Medical Education, Glasgow, Glasgow City, United Kingdom
- 2015/01/10 Co-presenter, Checklists or global ratings for simulation-based assessments: a systematic review, The International Meeting for Simulation in Healthcare, New Orleans, Louisiana, United States

## XI. PUBLICATIONS

### i. Peer Reviewed Manuscripts

\*Trainees’ names are underlined

1. **Ma IWY**, Hussain A, Wagner M, Walker B, Chee A, Arishenkoff S, Buchanan B, Liu RB, Mints G, Wong T, Noble V, Tonelli AC, Dumoulin E, Miller DJ, Hergott CA, Liteplo AS. Canadian Internal Medicine (CIMUS) expert consensus statement on the use of lung ultrasound for the assessment of medical inpatients with known or suspected coronavirus disease 2019. *J Ultrasound Med*; 2020. doi: <https://doi.org/10.1002/jum.15571>
2. Desy J, Noble VE, Woo MY, Walsh M, Kirkpatrick AW, **Ma IWY**. Use of critical items in determining point-of-care ultrasound competence. *Evaluation & the Health Professions*; 2020; doi:10.1177/0163278720975833
3. Tan JY, **Ma IWY**, Hunt JA, Kwong GPS, Farrell R, Bell C, Read EK. Video recording in veterinary medicine OSCEs: feasibility and inter-rater agreement between live performance examiners and video recording reviewing examiners. *J Vet Med Educ*. 2020; Aug 6;320190142 doi:10.3138/jvme-2019-0142
4. Kirkpatrick AW, McKee JL, Volpicelli G, **Ma IWY**. The potential for remotely mentored patient-performed home self-monitoring for new onset alveolar-interstitial lung disease. *Telemedicine and e-Health*. 2020;26(10):1304-1307.
5. Adamson R, Morris AE, Woan JS, **Ma IWY**, Schnobrich D, Soni NJ. Development of a focused cardiac ultrasound image acquisition assessment tool. *ATS Scholar*. 2020. Doi: <https://doi.org/10.34197/ats-scholar.2020-0002OC>
6. Okoniewska B, Ladha MA, **Ma IWY**. Journey of candidates who were unmatched in the Canadian Residency Matching Service (CaRMS): a phenomenological study. *Canadian Medical Education Journal* 2020;11(3):e82-91.
7. Ruzycski SM, Earp M, **Ma IWY**. Applicant gender and matching to first-choice discipline: a cross-sectional analysis of data from the Canadian Resident Matching Service (2013-2019). *CMAJ Open*. 2020;8(2):E346-E351. doi: 10.9778/cmajo.20190029

8. Bourque J, Skinner H, Dupré J, Bacchus M, Ainslie M, **Ma IWY**, Cole G. Performance of the Ebel standard-setting method in spring 2019 Royal College of Physicians and Surgeons of Canada internal medicine certification examination consisted of multiple-choice questions. *J Educ Eval Health Prof* 2020;17:12. doi: 10.3352/jeehp.2020.17.12
9. Wong J, Montague S, Wallace P, Negishi K, Liteplo A, Ringrose J, Dversdal R, Buchanan B, Desy J, **Ma IWY**. Barriers to learning and using point-of-care ultrasound: a survey of practicing internists in six North American Institutions. *Ultrasound J*. 2020;12:19.
10. **Ma IWY**, Desy J, Woo MY, Kirkpatrick AW, Noble VE. Consensus-based expert development of critical items for direct observation of point-of-care ultrasound skills. *J Grad Med Educ*. 2020;12(2):176-184.
11. **Ma IWY**, Somayaji R, Rennert-May E, Minardi J, Walsh MH, Wiskar K, Smyth LM, Burgoyne S, Chan B, Haroon BA, Desy J. Canadian Internal Medicine (CIMUS) recommendations regarding internal medicine point-of-care Ultrasound (POCUS) use during coronavirus (COVID-19) pandemic. *Can J of Gen Intern Med*. 2020;15(2):1-4.
12. Ambasta A, **Ma IWY**, Woo S, Lonergan K, Mackay E, Williamson T. Impact of an education and multilevel social comparison-based intervention bundle on use of routine blood tests in hospitalized patients at an academic tertiary care hospital: a controlled pre-intervention post-intervention study. *BMJ Quality & Safety*. 2020; 29(10):1-2; doi: 10.1136/bmjqs-2019-010118
13. **Ma IWY**, Steinmetz P, Weerdenburg K, Woo MY, Olszynski P, Heslop CL, Miller S, Sheppard G, Daniels V, Desy J, Valois M, Devine L, Curtis H, Romano MJ, Partel P, Jelic T, Topping C, Thompson D, Power B, Profetto J, Tonseth P. The Canadian medical student ultrasound curriculum: a statement from the Canadian Ultrasound Consensus for Undergraduate Medical Education Group. *J Ultrasound Med*. 2020; 39:1279-1287. doi: 10.1002/jum.15218
14. Roumeliotis M, Quirk S, Husain S, Guebert A, Watt E, Frederick A, Martell K, Hiltz M, Crook J, Batchelar D, **Ma I**, Meyer T. Establishing a simulation-based education program for radiation oncology learners in permanent seed implant brachytherapy: Building validation evidence. *Brachytherapy*. 2019; Nov 27;S1538-4721(19)30619-1. Pii:S1538-4721(19)30619-1.
15. Olszynski P, Kim DJ, **Ma IWY**, Clunie M, Lambos P, Guzowski T, Butz M, Thoma B. The development of a provincial multidisciplinary framework of consensus-based standards for point of care ultrasound at the University of Saskatchewan. *Ultrasound J*. 2019;11(1):28. Doi: 10.1186/s13089-019-0142-7.
16. Ambasta A, Pancic S, Wong BM, Lee T, McCaughey D, **Ma IWY**. Expert recommendations on frequency of utilization of common laboratory tests in medical inpatients: a Canadian consensus study. *J Gen Intern Med* 2019; 34(12):2786-2795; doi: 10.1007/s11606-019-05196-z
17. Ambasta A, Balan M, Mayette M, Goffi A, Mulvagh S, Buchanan B, Montague S, Ruzycki W, **Ma IWY**. Education indicators for internal medicine point-of-care ultrasound: a consensus report from the Canadian Internal Medicine Ultrasound (CIMUS) Group. *J Gen Intern Med* 2019; 34(10):2123-2129.. doi: 10.1007/s11606-019-05124-1
18. Jalil R, Warren R, **Ma IWY**. Point of care ultrasound training needs for primary care physicians: Practice setting matters. *Cogent Education*. 2019;6:1; doi: 10.1080/2331186X.2019.1617826
19. Lim R, **Ma IWY**, Brutsaert TD, Nysten HE, Nysten CN, Sherpa MT, Day TA. Transthoracic sonographic assessment of B-line scores during ascent to altitude among healthy trekkers. *Respir Physiol Neurobiol*. 2019; 263:14-19. doi: 10.1016/j.resp.2019.02.005.
20. Bhumaid RE, St-Cyr Bourque J, Shokoohi H, **Ma IWY**, Longacre M, Liteplo AS. Integrating point-of-care ultrasound in the ED evaluation of patients presenting with chest pain and shortness of breath. *Am J Emerg Med*. 2019;37(2):298-303. doi: 10.1016/j.ajem.2018.10.059
21. Watson K, Lam A, Arishenkoff S, Halman S, Gibson NE, Yu J, Myers K, Mintz M, **Ma IWY**. Point of care ultrasound training for internal medicine: a Canadian multi-centre learner needs assessment study. *BMC Med Educ* 2018;18(1):217. doi: 10.1186/s12909-018-1326-8.
22. **Ma IWY**, Cogliati C, Bosch FH, Tonelli de Oliveira AC, Arienti V, Blans MJ, Chan B, Bhagra A. Point-of-care ultrasound for internal medicine: an international perspective. *South Med J* 2018;111(7):439-443; doi: 10.14423/SMJ.0000000000000828.
23. Cotton D, Lenz R, Kerr B, **Ma I**. Point of care ultrasound for the general internist: pleural effusions. *Can J Gen Intern Med*. 2018;13(2):24-29.
24. Cessford T, Meneilly GS, Arishenkoff S, Eddy C, Chen LYC, Kim DJ, **Ma IWY**. Comparing physical examination with sonographic versions of the same examination techniques for splenomegaly. *J Ultrasound Med* 2018;37(7):1621-1629; doi: 10.1002/jum.14506.
25. **Ma IWY**, Arishenkoff S, Wiseman J, Desy J, Ailon J, Martin L, Otremba M, Halman S, Willemot P, Blouw M on

- behalf of the Canadian Internal Medicine Ultrasound (CIMUS) Group. Internal medicine point-of-care ultrasound curriculum: consensus recommendations from the Canadian Internal Medicine Ultrasound (CIMUS) Group. *J Gen Intern Med* 2017; 32(9):1052-1057. doi: 10.1007/s11606-017-4071-5.
26. Shrum J, Hallihan G, Jones J, Tesorero L, Gregson G, Kaba A, Holroyd-Leduc JM, Borkenhagen D, Lambert LA, **Ma IWY**. Impact of a procedural cart on procedural efficiency. *Am J Med Qual* 2017;32(3):342-343. PMID: 28467863.
  27. Pugh D, Cavalcanti RB, Halman S, **Ma IWY**, Mylopoulos M, Shanks D, Stroud L. Using the entrustable professional activities framework in the assessment of procedural skills. *J Grad Med Educ* 2017;9(2):209-214.
  28. **Ma IWY**, Caplin JD, Azad A, Wilson C, Fifer MA, Bagchi A, Liteplo AS, Noble VE. Correlation of carotid blood flow and corrected carotid flow time with invasive cardiac output measurements. *Crit Ultrasound J* 2017;9(1):10. doi: 10.1186/s13089-0065-0.
  29. Jones J, Wilkins M, Caird J, Kaba A, Cheng A, **Ma IWY**. An experimental study on the impact of clinical interruptions on simulated trainee performances of central venous catheterization. *Advances in Simulation* 2017; 2:5.
  30. Jamniczky HA, Cotton D, Paget M, Ramji Q, Lenz R, McLaughlin K, Coderre S, **Ma IW**. Cognitive load imposed by ultrasound-facilitated teaching does not adversely affect gross anatomy learning outcomes. *Anat Sci Educ* 2017; 10(2);144-51. doi: 10.1002/ase.1642.
  31. Ponton-Carss A, Kortbeek JB, **Ma IW**. Assessment of technical and nontechnical skills in surgical residents. *Am J Surg* 2016; 212(5):1011-1019.
  32. Urban D, Dehaeck R, Lorenzetti D, Guilfoyle J, Poon M-C, Steele M, Lardner D, **Ma IWY**, Brindle ME. Safety and efficacy of tranexamic acid in bleeding paediatric trauma patients: a systematic review protocol. *BMJ Open* 2016;6:e012947
  33. Kirkpatrick AW, McKee I, McKee JL, **Ma I**, McBeth PB, Roberts DJ, Wurster CL, Parfitt R, Ball CG, Oberg S, Sevcik W, Hamilton DR. Remote just-in-time telementored trauma ultrasound: a double-factorial randomized controlled trial examining fluid detection and remote knobology control through an ultrasound graphic user interface display. *Am J Surg* 2016; 211(5):894-902. PMID 27020901
  34. Brown GM, Otremba M, Devine LA, Gray C, Millington SJ, **Ma IW**. Defining competencies for ultrasound-guided bedside procedures: consensus opinions from Canadian physicians. *J Ultrasound Med* 2016;35(1):129-41
  35. Novak KL, Jacob D, Kaplan G, Boyce E, Ghosh S, **Ma I**, Lu C, Wilson S, Panaccione R. Point-of-care ultrasound accurately distinguishes inflammatory from noninflammatory disease in patients presenting with abdominal pain and diarrhea. *Can J Gastroenterol Hepatol* 2016; 2016:4023065. PMID: 26523457
  36. Chan A, Singh S, Dubrowski A, Pratt DD, Zalunardo N, Nair P, McLaughlin K, **Ma IW**. Part versus whole: a randomized trial of central venous catheterization education. *Adv Health Sci Educ Theory Pract*. 2015;20(4):1061-71.
  37. **Ma, I W**; Pugh, D; Mema, B; Brindle, M E; Cooke, L; Stromer, J N. Use of an error-focused checklist to identify incompetence in lumbar puncture performances. *Med Educ*. 2015 Oct;49(10):1004-15. doi: 10.1111/medu.12809
  38. Mintz M, Southern DA, Ghali WA, **Ma IWY**. Validation of the 25-item Stanford Faculty Development Program Tool on clinical teaching effectiveness. *Teaching and Learning in Medicine*; 2015;27(2):174-81
  39. Lam JY, Lopushinsky S, **Ma I**, Dicke F, Brindle M. Treatment options for the pediatric patent ductus arteriosus: systematic review and meta-analysis. *Chest* 2015; 148(3):784-93.
  40. You JJ, Downar J, Fowler RA, Lamontagne F, **Ma IW**, Jayaraman D, Kryworuchko J, Strachan PH, Ilan R, Nijjar AP, Neary J, Shik J, Brazil K, Patel A, Wiebe K, Albert M, Palepu A, Nouvet E, des Ordon AR, Sharma N, Abdul-Razzak A, Jiang X, Day A, Heyland DK. Barriers to Goals of Care Discussions With Seriously Ill Hospitalized Patients and Their Families: A Multicenter Survey of Clinicians. for the Canadian Researchers at the End of Life Network (CARENET). *JAMA Intern Med*. 2015; 175(4):549-56. PMID: 25642797
  41. Ilgen JS, **Ma IW**, Hatala R, Cook DA. A systematic review of validity evidence for checklists versus global rating scales in simulation-based assessment. *Med Educ*. 2015 Feb;49(2):161-73. doi: 10.1111/medu.12621. PMID: 25626747
  42. Walzak A, Bacchus M, Schaefer JP, Zarnke K, Glow J, Brass C, McLaughlin K, **Ma IWY**. Diagnosing technical competence in six bedside procedures: comparing checklists and a global rating scale in the assessment of resident performance. *Acad Med* 2015;90(8):1100-8
  43. Low D, Vlasschaert M, Novak K, Chee A, **Ma IW**. An argument for using additional bedside tools, such as bedside ultrasound, for volume status assessment in hospitalized medical patients: a needs assessment survey. *J Hosp Med*.

2014; 9(11):727-30. doi: 10.1002/jhm.2256. PMID:25211491

44. Jamniczky HA, McLaughlin K, Kaminska ME, Raman M, Somayaji R, Wright B, **Ma IW**. Cognitive load imposed by knobology may adversely affect learners' perception of utility in using ultrasonography to learn physical examination skills, but not anatomy. *Anat Sci Educ*. 2015; 8(3):197-204. doi: 10.1002/ase.1467. [Epub ahead of print] PMID: 24903679 [PubMed - as supplied by publisher]
45. **Ma IW**, Sharma N, Brindle ME, Caird J, McLaughlin K. Measuring competence in central venous catheterization: a systematic-review. *SpringPlus* 3:33. Jan 17, 2014
46. **Ma IW**, Zalunardo N, Brindle ME, Hatala R, McLaughlin K. Notes from the Field: Direct Observation Versus Rating by Videos for the Assessment of Central Venous Catheterization Skills. *Eval Health Prof*. 2015;38(3):419-22.
47. Arishenkoff S, Blouw M, Card S, Conly J, Gebhardt C, Gibson N, Lenz R, **Ma IWY**, Meneilly GS, Reimche L, Schaefer J, Sochocki M, Zarnke K. Expert Consensus on a Canadian Internal Medicine Ultrasound Curriculum. *Canadian Journal of General Internal Medicine* 2014;9(3):106-111
48. Fraser K, Huffman J, **Ma I**, Sobczak M, McIlwrick J, Wright B, McLaughlin K. The emotional and cognitive impact of unexpected simulated patient death: a randomized controlled trial. *Chest* 2014;145(5):958-63.
49. Kerr B, Hawkins TL, Herman R, Barnes S, Kaufmann S, Fraser K, **Ma IW**. Feasibility of scenario-based simulation training versus traditional workshops in continuing medical education: a randomized controlled trial. *Medical Education Online* 2013;18:21312
50. **Ma I**, Wishart I, Kaminska M, McLaughlin K, Weeks S, Lautner D, Baxter H, Wright B. Medical educators' perspectives of teaching physical examinations using ultrasonography at the undergraduate level. *Canadian Medical Education Journal*. 2013;4(1): e59-e68
51. **Ma IWY**, Chapelsky S, Bhavsar S, Connors W, Fisher M, Schaefer J, Bacchus M. Procedural Certification Program: Enhancing Resident Procedural Teaching Skills. *MedEd Publish*. Dec 18, 2012
52. Consoli A, Fraser K, **Ma I**, Sobczak M, Wright B, McLaughlin K. Diagnostic performance one hour after simulation training predicts learning. *Advances in Health Sciences Education*; 2013;18(5):893-900.
53. Fraser K, **Ma I**, Teteris E, Baxter H, Wright B, McLaughlin K. Emotion, cognitive load and learning outcomes during simulation training. *Med Educ* 2012 Nov;46(11):1055-62
53. *Beran TN, McLaughlin K, Al Ansari A, Kassam A. Conformity of behaviors among medical students: impact on performance of knee arthrocentesis in simulation. Advances in Health Sciences Education. Aug 31, 2012*
54. Brydges R, Nair P, **Ma I**, Shanks D, Hatala R. Directed self-regulated learning versus instructor-regulated learning for simulation training. *Medical Education* 2012;46(7):648-656
55. Fraser K, **Ma I**, Teteris E, Lee M, Wright B, McLaughlin K. Learning during simulation training is prone to retroactive interference. *Medical Education*; 2012;46(3):299-305
56. **Ma IWY**, Brindle M, Ronksley P, Lorenzetti D, Sauve R, Ghali W. Use of simulation-based education to improved outcomes of central venous catheterization: a systematic review and meta-analysis. *Acad Med*. 2011;86(9):1137-47
57. **Ma IW**, Zalunardo N, Pachev G, Beran T, Brown M, Hatala R, McLaughlin K. Comparing the use of global rating scale with checklists for the assessment of central venous catheterization skills using simulation. *Adv Health Sci Educ Theory Pract*. 2012;17(4):457-80.
58. **Ma IWY**, Teteris E, Roberts JM, Bacchus M. Who is teaching and supervising our junior residents' central venous catheterizations? *BMC Medical Education*. 2011;11(1):16. Apr 25, 2011
59. Shanks D, Wong RY, Roberts JM, Nair P, **Ma IWY**. Use of simulator-based medical procedural curriculum: the learner's perspectives. *BMC Med Educ*. 2010 Nov 8;10(1):77
60. **Ma IWY**, Roberts JM, Wong RY, Nair P. Procedural teaching tree to aid resident doctor peer-teachers. *Medical Education* 2010;44:1134-5
61. Brindle ME, **Ma IW**, Skarsgard ED. Impact of target blood gases on outcome in congenital diaphragmatic hernia (CDH). *Eur J Pediatr Surg*. 2010 Sep;20(5):290-3
62. Millington SJ, Wong RY, Kassen BO, Roberts JM, **Ma IW**. Improving internal medicine residents' performance, knowledge, and confidence in central venous catheterization using simulators. *J Hosp Med*. 2009;14;4(7):410-416.
63. Wong RY, Saber SS, **Ma I**, Roberts JM. Using television shows to teach communication skills in internal medicine residency. *BMC Med Educ* 2009; 9(1):9.
64. Kalb K, Shalansky S, Legal M, Khan N, **Ma I**, Hunte G. Unintended medication discrepancies associated with

reliance on prescription databases for medication reconciliation on admission to a general medical ward. *Can J Hosp Pharm* 2009; 62(4):284-289.

65. Wong RY, Hollohan K, Roberts JM, Hatala R, **Ma IWY**, Kassen BO. A descriptive report of an innovative curriculum to teach quality improvement competencies to internal medicine residents. *Can J Gen Intern Med* 2008; 3(1):26-9.
66. **Ma IW**, Khan NA, Kang A, Zalunardo N, Palepu A. Systematic review identified suboptimal reporting and use of race/ethnicity in general medical journals. *J Clin Epidemiol* 2007; 60(6):572-8.
67. Zalunardo NY, Rose CL, **Ma IW**, Altmann P. Higher serum C-reactive protein predicts short and long-term outcomes in peritoneal dialysis-associated peritonitis. *Kidney Int* 2007; 71(7):687-92.
68. **Ma IW**, Valantine HA, Shibata A, Waskerwitz J, Dafoe DC, Alfrey EJ, Tan JC, Millan M, Busque S, Scandling JD. Validation of a screening protocol for identifying low-risk candidates with type 1 diabetes mellitus for kidney with or without pancreas transplantation. *Clin Transplant* 2006; 20(2):139-46.
69. Khan NA, **Ma I**, Thompson CR, Humphries K, Salem DN, Sarnak MJ, Levin A. Kidney function and mortality among patients with left ventricular systolic dysfunction. *J Am Soc Nephrol* 2006; 17(1):244-53.
70. Gill JS, **Ma I**, Landsberg D, Johnson N, Levin A. Cardiovascular events and investigations in patients awaiting cadaveric kidney transplantation. *Journal of the American Society of Nephrology* 2005;16(3):808-16.
71. Cowie SE, **Ma I**, Lee SK, Smith RM, Hsiang YN. Nosocomial MRSA infection in vascular surgery patients: impact on patient outcome. *Vasc Endovascular Surg* 2005;39(4):327-34.
72. **Ma I**, Hladunewich M. Does the prophylactic use of N-acetylcysteine prevent contrast nephropathy in patients with renal insufficiency. *CMAJ* 2004;170(8):1231.
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## ii. Non-peer Reviewed Manuscripts

1. **Ma IWY**, Bacchus MD, Glow J, Brass C, Fradgley L, Fisher M, Altabbaa G, Schaefer JP. Implementation of a comprehensive procedural skills examination for internal medicine using simulation at the University of Calgary: a descriptive report. *Canadian Journal of General Internal Medicine*. 2012;7(4): 120-121.

## iii. Books, Chapters Peer Reviewed

1. **Ma, I.**, Noble V. (2020). Lung Ultrasound Interpretation. In Soni NJ, Arntfield R, Kory P (Eds.), *Point-of-care Ultrasound*, 2<sup>nd</sup> Ed (pp.63-75). Philadelphia, PA: Elsevier
2. **Ma, IWY**, Chun, R., Kirkpatrick AW (2015). Basics of Ultrasound. Chapter 1, Pages 1-36. In Ferrada P (Ed.) *Ultrasonography in the ICU, Practical Applications* (pp.1-36). Switzerland: Springer International Publishing.
3. Brindle ME, **Ma I**, Moss L. (2002). Pulmonary Infections. In Mattei P (Ed.), *Surgical Directives: Pediatric Surgery* (pp.457-462). Lippincott Williams and Wilkins.

## iv. Abstracts - Published Peer Reviewed

1. Mercia M, Kachra R, Brown A, **Ma I**. Exploring patient perceptions of learner competence on a medical teaching unit. *Can Med Educ J* 2020;11(2):e73.
2. **Ma I**, Desy J, Noble V, Liteplo A, Olszynski P, Dumoulin E, Arishenkoff S, Dversdal R, Liu G, Buchanan B. Minimal criteria for lung ultrasonography. *Can Med Educ J* 2020;11(2):e194.
3. Wijdenes P, Borkenhagen D, Babione J, **Ma I**, Hallihan G. Leveraging augmented reality training tool for medical education: a case study in central venous catheterization. Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems.2018. doi: 10.1145/3170427.3174361
4. Pirani F, Crosby M, Desy J, Muir O, Cowles J, Sharma N, **Ma I**. Evaluating the quality of electronic discharge summaries: a patient's perspective. *Can J Gen Intern Med* 2018;13(1)10.
5. Crosby M, Pirani F, Muir O, Cowles J, Desy J, Sharma N, **Ma I**. Evaluating patient satisfaction of electronic discharge summaries: a mixed-method study. *Can J Gen Intern Med* 2018;13(1):13.
6. **Ma I**, Caplin J, Azad A, Wilson C, Fifer M, Bagchi A, Liteplo A, Noble V. Correlation of carotid blood flow and

- carotid flow time with invasive cardiac output measurements. *Chest* 2016;150(4\_S):297A-297A.
7. Tesorero L, Cowles J, Muir O, **Ma IWY**. Exploring patient perspectives on bedside procedures: a mixed methods study. *Journal of Undergraduate Research in Alberta* 2015;4(2).
  8. Cook D, Hatala R, Ilgen J, **Ma I**. Checklists or global ratings for simulation-based assessments: a systematic review. *Journal of the Society for Simulation in Healthcare* 2014;9:404
  9. Fraser K, Huffman J, **Ma I**, Wright B, McIlwrick J, McLaughlin K. Death of a manikin: adverse effects on learning and mechanisms. *Chest* 2011;140:4:1024A
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