Updated: April 30, 2018

### University of Calgary

### Faculty of Medicine

#### **CURRICULUM VITAE**

#### I. BIOGRAPHICAL DATA

Name: Irene Wai Yan Ma

Address: 3330 Hospital Drive NW Calgary, Alberta T2N 4N1

Telephone: 403-210-7369 E-mail: ima@ucalgary.ca

Present Rank: Associate Professor (with tenure)

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 B.Sc (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. Licensure, Certification and Boards

1999/12	Licentiate, Medical Council of Canada, #86693
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, 01150387
2013/11	Lung Ultrasound, Basic Provider, Winfocus
2016/08	The Canadian Emergency Ultrasound Society / Canadian Point of Care Ultrasound Society Independent Practitioner (Core Track), #16244, (Subxiphoid cardiac, 1st TM pregnancy pelvic scan, AAA, FAST/Abdominal FF)
2016/11	RDMS, American Registry for Diagnostic Medical Sonography, 202935
2017/09	RDCS, Registered Diagnostic Cardiac Sonographer, American Registry for Diagnostic Medical Sonography, 202935
2017/12	Provider, Emergency Medicine Core Track, The Canadian Point of Care Ultrasound Society, #16244 (Subxiphoid cardiac, AAA, Abdominal Free Fluid, First TM Pregnancy, Basic Lung)

### III. AWARDS AND DISTINCTIONS

2017/01 - 2018/03/13	Top grade reviewer for Annals of Internal Medicine letter of recognitions, Annals of Internal Medicine
2017/12/20	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
2016/12	Basic Cardiac Ultrasound Views 1: PSLA, rated as one of top 12 #FOAMus (Free Open Access Medical-education: Ultrasound) online resources of 2016 by Ultrasound Training Solutions in Australia: http://www.ultrasoundtraining.com.au/news/top-12-foamus-articles-of-2016
2016/01 - 2017/03	Top grade reviewer for Annals of Internal Medicine letter of recognition, Annals of Internal Medicine
2016/12/29	Top 10% Reviewer Letter of Recognition, Journal of Hospital Medicine
2016/04	AFMC John Ruedy Award for Innovation in Medical Education, The Association of Faculties of Medicine of Canada
2015/10	Department of Medicine Merit Award, University of Calgary
2015/01 - 2016/03	Top grade reviewer for Annals of Internal Medicine letter of recognition, Annals of Internal Medicine
2014/11	Faculty of Nursing Award awarded to my research trainee: Leonie Tesorero, Student Union Undergraduate Research Symposium

2014/01 - 2015/03	Top grade reviewer for Annals of Internal Medicine letter of recognition, Annals of Internal Medicine
2013/11	McLeod Distinguished Achievement Award, University of Calgary, Faculty of Medicine
2013/11	Department of Medicine Repeat Offender Award, University of Calgary
2013/04	Canadian Association for Medical Education Certificate of Merit Award 2013, Canadian Association for Medical Education
2013/04	Best Oral Presentation in Medical Education and Residents Choice Award, awarded to my research trainee: Alison Walzak, University of Calgary Internal Medicine Resident Research Day
2013/01 - 2014/04	Top grade reviewer for Annals of Internal Medicine letter of recognition, Annals of Internal Medicine
2012/10	Department of Medicine Golden Bull Award, University of Calgary
2012/08 - 2013/03	Bronze Teaching Contribution to Medical Skills 1: Physical Exam, 13.8 hrs, Undergraduate Medical Education, University of Calgary
2012/08	Department of Medicine ARP Merit Award, University of Calgary, \$5,000
2012/04 - 2013/03	Bronze Teaching Contribution to Course 8, 18 hrs, Undergraduate Medical Education, University of Calgary
2012/04	Best Oral Presentation in Medical Education awarded to my research trainee: Alison Walzak, University of Calgary Internal Medicine Resident Research Day
2012/01 - 2012/12	2012 Dr. John M. Conly Innovation Award, Awarded to The Procedural Certification Program team (Irene Ma, Sarah Chapelsky, William Connors, Jennifer Glow, Charlene Brass, Michael Fisher, Maria Bacchus, Jeff Schaefer and the W21C), Department of Medicine, University of Calgary
2011/10	Poster Research Presentation - 3rd Place, awarded to my research trainee: Alison Walzak, Canadian Society of Internal Medicine
2011/10	Department of Medicine Merit Award, University of Calgary, \$5,000
2011/05 - 2012/06	Gold Star Teaching Award, Internal Medicine Clerkship (class of 2012), Undergraduate Medical Education, University of Calgary
2011/04 - 2012/01	Bronze Teaching Contribution to AEBM Course, 5.5 hours, Undergraduate Medical Education, University of Calgary
2011/04	Best Oral Presentation in Medical Education, awarded to my research trainee: Alison Walzak, University of Calgary Internal Medicine Resident Research Day
2010/04 - 2011/04	Associate Dean's Letter of Excellence, Silver Award, The University of Calgary
2009/11 - 2010/11	Rookie of the Year Award, Department of Medicine, University of Calgary
2007	Fay R. Dirks Award for Excellence in Teaching, St. Paul's Hospital
2004/05	Stefan Grzybowski Prize, University of British Columbia, \$250
2003/08	Resident Research Prize for UBC, CSCI/CIHR, Canadian Society for Clinical Investigation, \$1,000
2003/05	Best Oral Presentation by a Fellow, UBC Resident Research Day
1996/09	Albert B and Mary Steiner Summer Research Award, University of British Columbia, \$2,266

# IV. ACADEMIC APPOINTMENTS

2017/09 – present	Joint Appointment, Department of Community Health Sciences, University of Calgary
2018/07 - present	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

## i. Undergraduate

### **Undergraduate Medical Education (UME) Teaching**

2017/08/21	Course 1 - Ultrasound Guided Anatomy (2 hours), Small group, University of Calgary, UME, supervised session on aorta/IVC/spine
2017/08/02	Course 1 - Ultrasound Guided Anatomy (2 hours), Small group, University of Calgary, UME, supervised session on kidney/liver/spleen
2017/02/03	Course 3- Harvey (2 hours), Small group, The University of Calgary, UME, (N=7); score 5/5
2017/01/17	Course 3 – Harvey (2 hours), Small group, The University of Calgary, UME, (N=6); score 5/5
2016/12/13 - 2017/02/15	Revised and updated Super-OSCE stations 2 to 4 (knee arthrocentesis, asthma preop, stable angina)
2016/08/05	MDCN 520 Introduction to Ultrasound, Course 8, Lecture, University of Calgary UME, Clara Christie Theater
2016/01/27	Musculoskeletal Ultrasound Course, Seminar, Harvard Medical School, Tosteson Medical Education Center
2015/05/01	Introduction to Ultrasound - Course 8, Lecture, University of Calgary, Libin Theater
2014/10/17	Course 8 - Thoracentesis, University of Calgary, UME
2014/05/02	Introduction to Ultrasound - Course 8, Lecture, University of Calgary, Libin Theater
2014/04/15 - 2014/04/16	Developed station for procedural skills, supervised station set-up morning of exams, Student Evaluation, University of Calgary UME SuperOSCE, MedSkills
2013/09/04	Physical Examination - General Abdominal Exam using Ultrasound, Small group, University of Calgary
2013/09/05	Course 1 – Ultrasound Guided Anatomy Liver/Kidney, University of Calgary, UME
2013/08/20	Course 1 – Ultrasound Guided Anatomy IVC, Aorta, Spine, University of Calgary, UME
2013/08/28	Physical Examination - Liver/Spleen Exam using Ultrasound, Small group, University of Calgary
2013/05/01	Physical Examination - Thyroid using Ultrasound, Small group, University of Calgary
2013/05/03	Course 8 - Knee + Shoulder, Small group, University of Calgary, UME
2013/05/22	Physical Examination - Thyroid using Ultrasound, Small group, University of Calgary
2013/02/13	Physical Examination - JVP using Ultrasound, Small group, University of Calgary
2013/02/13	Physical Examination - Cardiac Exam using Ultrasound, Small group, University of Calgary
2013/02/15	Course 8 Thoracentesis Evaluation, Teaching Assessment, University of Calgary, UME
2013/01/04	Course 8 - Thora Evaluation, University of Calgary, UME
2013/01/18	Course 8 - Knee and Shoulder Evaluation, University of Calgary, UME
2013/01/16	Physical Examination - Cardiac Exam using Ultrasound, Small group, University of Calgary
2012/09/11	Physical Examination - Liver and Spleen using Ultrasound, Small group, University of Calgary
2012/08/03	Course 8 - Thoracentesis, Small group, University of Calgary, UME
2012/07/06	Course 8 - Knee Shoulder, Small group, University of Calgary, UME
2012/06/08	Course 8 - Knee Shoulder, Small group, University of Calgary, UME

2012/05/01	MDCN 440 - EBM - Therapy (2 hr session), Tutorial, University of Calgary
2012/05/03	Physical Examination - Thyroid using Ultrasound, Small group, University of Calgary
2012/05/09	Physical Examination - Thyroid using Ultrasound, Small group, University of Calgary
2012/05/10	Physical Examination - Thyroid using Ultrasound, Small group, University of Calgary
2012/05/08	MDCN 440 - EBM - Meta-analysis (2 hr session), Tutorial, University of Calgary
2012/03/02	Course 8 Thoracentesis Evaluation, Teaching Assessment, University of Calgary, UME
2012/03/16	Course 8 Thoracentesis Evaluation, Teaching Assessment, University of Calgary, UME
2012/01/04	Physical Examination - JVP using Ultrasound, Small group, University of Calgary
2012/01/20	Course 8 Thoracentesis Evaluation, Teaching Assessment, University of Calgary, UME
2011/11/25	Course 8 - Thoracentesis Evaluation, Teaching Assessment, University of Calgary, UME
2011/09/02	Course 8 - Thoracentesis, Small group, University of Calgary, UME
2011/09/30	Course 8 - Thoracentesis, Small group, University of Calgary, UME
2011/08/05	Course 8 - Thoracentesis, Small group, University of Calgary, UME
2011/07/08	Course 8 - Knee Shoulder, Small group, University of Calgary, UME
2011/05/11 - 2011/05/12	Learner shadowing, Bedside Teaching, University of Calgary, Consult service
2011/05/27	Course 8 - Sim MI (1 hr), Small group, University of Calgary, UME
2011/05/03	MDCN 440 - EBM - Harm, Tutorial, University of Calgary, UME
2011/04/27	Course 8 Procedural Skills Formative Examination - make-up examination for 15 students, Student Evaluation, University of Calgary, UME
2011/04/12	Course 8 Procedural Skills Formative Examination - make-up examination for one student, Student Evaluation, University of Calgary, UME
2011/04/15	Course 8 - Knee Shoulder, Small group, University of Calgary, UME
2011/04/19	MDCN 440 - EBM - Therapy, Tutorial, University of Calgary
2011/04/26	MDCN 440 - EBM - Diagnosis, Tutorial, University of Calgary
2011/03/05	Harvey Teaching (1 hr), Small group, University of Calgary, UME
2011/02/25	Harvey Teaching, Small group, University of Calgary, UME
2011/01/07	LP OSCE, Course 8 – Teaching Assessment, University of Calgary, UME
2010/12/09	Super OSCE – Teaching Assessment, University of Calgary, UME
2010/12/10	Supervised OSCE, Course 8 - Proc Evaluation, Teaching Assessment, University of Calgary, UME
2010/11/12	Course 8 - Sim LOC (4 hr), Small group, University of Calgary, UME
2010/11/26	Supervised First OSCE, Course 8 - Proc Evaluation, Teaching Assessment, University of Calgary, UME
2010/10/01	Course 8 - High fidelity sim – LOC (4 hr), Small group, University of Calgary, UME
2010/10/15	Course 8 – Knee (4 hr), Small group, University of Calgary, UME
2010/09/03	Course 8 - High fidelity sim – LOC (2 hr), Small group, University of Calgary, UME
2010/09/03	Course 8 – Knee (2 hr), Small group, University of Calgary, UME
2010/08/04	SP Training for Course 8 Knee, University of Calgary, UME
2010/08/20	Course 8 - High fidelity sim – LOC (4 hr), Small Group, University of Calgary, UME
2010/07/09	Course 8 - Sim - Inf MI, Small group, University of Calgary, UME
2010/06/11	Course 8 – LP, Small group, University of Calgary, UME
2010/06/11	Course 8 – LP, Small group, University of Calgary, UME
2010/05/14	Course 8 – LP, Small group, University of Calgary, UME
2010/05/28	Course 8 – LP, Small group, University of Calgary, UME
2010/05/04	AEBM MDCN 440, Tutorial, University of Calgary, UME
2010/04/16 - 2010/05/14	Supervising Course 8 LP, Small group, University of Calgary, UME

2010/04/26 - 2010/04/29	Hypercalcemia (1/2 hr on April 26,10), delirium (1/2 hr on April 27, 10), Acute renal failure and heart murmurs (1 hr on April 28, 10), Physical Examinations (JVP, Abdominal examination, volume status, pulmonary examination, 1 hr on April 29, 10), Remedial Instruction, FMC GMU
2010/04/30	Course 8 – LP, Small Group, Small group, University of Calgary, UME
2010/04/16	Course 8 - LP course (4 hrs) Small group, Took 30 hours to develop case, University of Calgary, UME
2010/03/03	Harvey Teaching, Small group, University of Calgary, UME
2010/03/05	Harvey Teaching, Small group, University of Calgary, UME
2010/03/12	Harvey Teaching, Small group, University of Calgary, UME
2010/02/10	Harvey Teaching, Small group, University of Calgary, UME
2010/02/09	Harvey Teaching, Small group, University of Calgary, UME
2010/02/03	Harvey Teaching, Small group, University of Calgary, UME
2010/02/02	Harvey Teaching (2 hrs), Small group, University of Calgary, UME
2011/10 - 2012/01	MDCN 402 Preceptor, Julie Kim
2011/05	MDCN 402 Preceptor, Michelle Chan
2010/05 - 2010/10	MDCN 402 Preceptor, Sandeep Brar
2010/08	MDCN 402 Preceptor, Mia Steiner, Aug 3-6, 2010.

### **UME Research Supervision**

2017/02 – 2017/08 Primary Supervisor: Megan Crosby (University of Alberta medical student)

# ii. Graduate (course and student supervision)

### **Graduate Courses**

2013/11/12	MDSC 736 - Medical Education Cognition Principle, Lecture, University of Calgary, G732
2012/03/05	MDSC 755.02 - 3 hour lecture, Lecture, The University of Calgary, HSC

### **Graduate Student Supervision**

2017/03 - present	Co-Supervisor, MSc Graduate Student, Nathan Zondervan (Medical Education, Community		
	Health Sciences	)	
2012/09/21 - 2013/04/16	Supervisor, MSc Graduate Student, Nicole Percival, PSYC 624.02 Research in Cognition,		
	Special Topic:	Research in AED evaluations. Second reader:	Tom O'Neill. University of
	Calgary		

# iii. Postgraduate

## Postgraduate Medical Education (PGME) Teaching

2018/05/02	PGY-1 Ultrasound Super User Group Training, Internal Medicine Residency Program (4 hrs; $n=4$ )
2018/04/25	Ultrasound OSCEs (4 hrs; n = 12; Drs Kyle McCoy, Luke Rannelli, Jolene Haws, Mike Bosche, Inka Toman, Caley Shukalek, Jillian Walsh, Peter Rye, Jordan Marrit, Kathryn Watson, Kate Colizza, Lauren Murphy), GIM Fellowship Program, University of Calgary
2018/04/11	IM PGY-3 OSCE Examiner (4 hrs; $n = 11$ ), Internal Medicine Residency Program University of Calgary
2018/03/22	MTU POCUS Noon Rounds with Dr. Ryan Iwasiw (1 hr; n=5; 3 PGY-1s, 2 CC3s)
2018/02/28	PGY – 1 Ultrasound Super User Group Training, Internal Medicine Residency Program (4 hrs;

	n = 5)		
2018/02/24	The next generation of internists: Technology in Residency. Resident Retreat. Co-presented with Dr. Janeve Desy (20 min)		
2018/02/07	PGY - 1 Procedural Bootcamp. University of Calgary, Internal Medicine Residency Program (4 hrs; Central line, Intubation, Knee arthrocentesis, Harvey; n = 32)		
2018/01/31	General Internal Medicine Fellows Ultrasound Half Day (3 hrs; n=3; Drs. Lauren Murphy, Jordan Marit, Caley Shukalek)		
2018/01/25	Surgical Foundations Critical Thinking Course: Systematic Reviews and Meta-analysis (1 hr; PGY -1 Surgical Residents; n=25)		
2018/01/24	PGY - 1 Ultrasound Super User Group Training, Internal Medicine Residency Program (4 hrs; $n = 5$ )		
2017/11/22	How to critically appraise journal articles, GIM Fellowship Program (PGY4-5s), University of Calgary (2hrs, n=10)		
2017/09/07	Systematic Reviews and Meta-analysis, Lecture (1hr, n=10), Department of Oncology Research Methods Course, Combined Curriculum, Tom Baker Cancer Center		
2017/08/09	PGY - 1 Procedural Bootcamp. University of Calgary, Internal Medicine Residency Program (4 hrs; Paracentesis, Thoracentesis, Lumbar Puncture; $n=32$ )		
2017/07/04	Invited teaching, University of Alberta GIM Ultrasound Bootcamp, University of Alberta, GIM Fellowship program (9 hrs; n=11)		
2017/06/21	POCUS Educational Scan Shift, Bedside Teaching, (2 hrs; n = 3; Victoria Zotova, Aliza Moledina, Tania Pannu), Internal Medicine Residency Program University of Calgary		
2017/04/27	Ultrasound OSCEs (3 hrs; n = 7; Drs Dayne Ortved, Shannon Ruzycki, Kyle McCoy, Luke Rannelli, Rahul Mehta, Qahir Ramji, Jolene Haws), GIM Fellowship Program, University of Calgary		
2017/04/18	Simulation-based Procedural Training (Co-organized with Dr. Janeve Desy) (2.5 hrs; n=5; Drs. Shannon Ruzycki, Kate Colizza, Kyle McCoy, Jolene Haws, Peter Rye), GIM Fellowship Program, University of Calgary		
2017/04/18	POCUS Educational Scan Shift, Bedside Teaching, Internal Medicine Residency Program University of Calgary, (2 hrs; n=3; Drs. Matt Church, Marta Davidson, Sudhir Nishtala)		
2017/03/23	IM PGY-4 Scan Shift (2 hrs; n = 1, Darrel Cotton) GIM Fellowship Program, University of Calgary		
2017/03/08	IM PGY-3 OSCE Examiner (3.5 hrs; $n = 9$ ), Internal Medicine Residency Program University of Calgary		
2017/02/17 - 2017/02/21	IM OSCE station development: Ultrasound guided thoracentesis station		
2017/01/25	POCUS Educational Scan Shift, Bedside Teaching, (3 hrs; n=3; Dr. Nazia Sharfuddin, Yang Lei, Jesse Basnak), Internal Medicine Residency Program University of Calgary		
2016/12/21	IM AHD: How to Write an Abstract, $(1 \text{ hr}; n = 12)$ , Internal Medicine Residency Program, University of Calgary		
2016/11/02	IM AHD: Ultrasound Lung (2hrs), Small Group Instruction, Internal Medicine Residency Program, University of Calgary, ATSSL		
2016/11/18	Systematic Reviews and Meta-analysis, Lecture (1hr), Department of Oncology Research Methods Course, Tom Baker; Evaluation score 6.8/7		
2016/09/14	POCUS Educational Scan Shift, Bedside Teaching, University of Calgary, Internal Medicine Residency Program, (4 hrs; n=3)		
2015/09/18 - 2016/07/31	Twice monthly resident scan shifts, Bedside Teaching, Massachusetts General Hospital, Massachusetts General Hospital		
2015/07/09	IM AHD: Ultrasound JVP, Bedside Teaching, University of Calgary, G820		
2015/06/25	Paracentesis Train the Trainer, University of Calgary, U36		
2015/03/05	IM AHD: Writing Abstracts, Lecture, University of Calgary, FMC Auditorium		
2015/02/11	EBM/Stats, Small Group Instruction, Internal Medicine Fellows Academic Half Day		

2015/02/12	Ultrasound Lung, Small Group Instruction, University of Calgary, MedSkills
2014/12/17	Incorporating Non-Clinical Roles in your Career, Small Group Instruction, Internal Medicine
2014/12/17	Fellows Academic Half Day
2014/11/27	With Dave Sam and LeeAnn Hawkins, Hi Fidelity Simulator - Asthma Pregnancy, University of Calgary, W21C
2014/10/17	Systematic Reviews and Meta-analysis, Lecture, Department of Oncology Research Methods Course, Tom Baker
2014/08/07	Hi Fidelity Simulator - Afib/CHF, University of Calgary, W21C
2014/08/08	Harvey Training, University of Calgary, W21C
2014/07 - 2014/07/10	Hi Fidelity Simulator - COPD/PE, University of Calgary, W21C
2014/07/31	Hi Fidelity Simulator - COPD/PE, University of Calgary, W21C
2014/06/09	Procedural Elective - Basics of Ultrasound, Resident Lectures, University of Calgary
2014/06/19	Internal Medicine JVP OSCE exams, Student Evaluation, The University of Calgary, MedSkills
2014/04/17	US guided LP Train the Trainer
2014/02/22	Physician as Teacher, co-presented with Sylvain Coderre and Evan Minty, Lecture, University of Calgary IM Resident Retreat
2014/01/16	JVP Ultrasound Physical Examination Teaching, Small Group Instruction, University of Calgary, MedSkills
2014/01/31	Writing Manuscripts, Lecture, University of Calgary Internal Medicine AHD
2013/12/12	Simulation Thora, ABG, Intubation, Para Teaching, University of Calgary, U36
2013/11/13	US guided LP Train the Trainer
2013/11/18	US guided LP Train the Trainer
2013/11/20	Heart Failure, Small Group Instruction, Internal Medicine Fellows Academic Half Day
2013/10/21 - 2013/11/25	CVC skill evaluation, Student Evaluation, University of Calgary
2013/10/24	PGY-1 Surgical Skills Final Exam, Student Evaluation, University of Calgary
2013/08/08	Paracentesis Train the Trainer
2013/08/22	Paracentesis Train the Trainer
2013/08/22	Hi Fidelity Simulator - COPD/PE (2 hrs), University of Calgary, e-SIM
2013/08/29	Hi Fidelity Simulator – Hyponatremia (1 hr), University of Calgary, e-SIM
2013/08/29	Hi Fidelity Simulator - Necrotizing soft tissue infections (1 hr), University of Calgary, e-SIM
2013/06/12	CCAP Networking session - Hypertensive emergencies (1 hr), Lecture, Alberta Health Services, WHS
2013/05/02	Internal Medicine Procedural OSCES examiner - CVC examined 2 plus helped set up 3 LPs and 3 CVC stations, Student Evaluation, University of Calgary
2013/05/02	Physical Exams: Pulmonary, Small Group Instruction, University of Calgary Internal Medicine AHD
2013/05/02	Small Groups: Cardio (CHF/Afib); Pulm (PJP), Small Group Instruction, University of Calgary Internal Medicine AHD
2013/05/16	Examined Internal Medicine Procedural OSCEs: Para, Thora, ABG, Intubation, Knee, Student Evaluation, University of Calgary
2013/05/23	Examined Internal Medicine Procedural OSCEs: CVC, LP, Student Evaluation, University of Calgary
2013/03/02	IVC and JVP Ultrasound Scanning (3 hrs), Workshop, University of Calgary Resident Retreat, Kananaskis
2013/03/21	Clinical Scenarios with fellows, Small Group Instruction, University of Calgary
2013/02/14	Introduction to Ultrasound - Session # 1, Lecture, University of Calgary Internal Medicine Academic Half Day

Academic Half Day  2013/01/10 Educational Research, Lecture, University of Calgary Anesthesiology Academic Half Day  2013/01/17 Simulation Thora Teaching, University of Calgary, U36  2013/01/17 Writing Manuscripts, Lecture, University of Calgary Internal Medicine AHD  2013/01 - 2013/01/17 Panel Discussion on Career Counselling: Tom Stelfox, Sofia Ahmed, Jayna Holroyd-Leduc, Irene Ma, Mentoring, University of Calgary Internal Medicine Academic Half Day  2013/01/31 PCP Simulation Para Teaching, University of Calgary, W21C  2012/12/13 PCP Simulation CVC Teaching Refresher, University of Calgary, TRW W21C  2012/11/01 PCP Simulation CVC Teaching, University of Calgary, U36  2012/11/29 PCP Simulation Thoracentesis Teaching, University of Calgary, U36  Systematic Reviews and Meta-analysis, Lecture, Department of Oncology Research Methods
2013/01/17 Simulation Thora Teaching, University of Calgary, U36  2013/01/17 Writing Manuscripts, Lecture, University of Calgary Internal Medicine AHD  2013/01 - 2013/01/17 Panel Discussion on Career Counselling: Tom Stelfox, Sofia Ahmed, Jayna Holroyd-Leduc, Irene Ma, Mentoring, University of Calgary Internal Medicine Academic Half Day  2013/01/31 PCP Simulation Para Teaching, University of Calgary, W21C  2012/12/13 PCP Simulation CVC Teaching Refresher, University of Calgary, TRW W21C  2012/11/01 PCP Simulation CVC Teaching, University of Calgary, U36  2012/11/29 PCP Simulation Thoracentesis Teaching, University of Calgary, U36  2012/10/23 Systematic Reviews and Meta-analysis, Lecture, Department of Oncology Research Methods
2013/01/17 Writing Manuscripts, Lecture, University of Calgary Internal Medicine AHD 2013/01 - 2013/01/17 Panel Discussion on Career Counselling: Tom Stelfox, Sofia Ahmed, Jayna Holroyd-Leduc, Irene Ma, Mentoring, University of Calgary Internal Medicine Academic Half Day 2013/01/31 PCP Simulation Para Teaching, University of Calgary, W21C 2012/12/13 PCP Simulation CVC Teaching Refresher, University of Calgary, TRW W21C 2012/11/01 PCP Simulation CVC Teaching, University of Calgary, U36 2012/11/29 PCP Simulation Thoracentesis Teaching, University of Calgary, U36 2012/10/23 Systematic Reviews and Meta-analysis, Lecture, Department of Oncology Research Methods
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2012/12/13 PCP Simulation CVC Teaching Refresher, University of Calgary, TRW W21C 2012/11/01 PCP Simulation CVC Teaching, University of Calgary, U36 2012/11/29 PCP Simulation Thoracentesis Teaching, University of Calgary, U36 2012/10/23 Systematic Reviews and Meta-analysis, Lecture, Department of Oncology Research Methods
2012/11/01 PCP Simulation CVC Teaching, University of Calgary, U36 2012/11/29 PCP Simulation Thoracentesis Teaching, University of Calgary, U36 2012/10/23 Systematic Reviews and Meta-analysis, Lecture, Department of Oncology Research Methods
2012/11/29 PCP Simulation Thoracentesis Teaching, University of Calgary, U36 2012/10/23 Systematic Reviews and Meta-analysis, Lecture, Department of Oncology Research Methods
2012/10/23 Systematic Reviews and Meta-analysis, Lecture, Department of Oncology Research Methods
Course, Tom Baker
2012/10/25 PCP Simulation CVC Teaching, University of Calgary, U36
2012/09/13 - 2012/09/14 PCP Simulation CVC Teaching, University of Calgary, W21C
2012/08/02 Hi Fidelity Simulator – Hyperaldo (2 hrs), University of Calgary, e-SIM
2012/08/02 Hi Fidelity Simulator - COPD/PE (2 hrs), University of Calgary, W21C
2012/08/14 Simulation PCP Refresher: Knee/Thoracentesis, University of Calgary, U36
2012/08/16 With Kelly Zarnke, Hi Fidelity Simulator - Hyperaldo, University of Calgary, e-SIM
2012/08/16 with Jane Lemaire, Hi Fidelity Simulator - COPD/PE, University of Calgary, e-SIM
2012/08/23 Simulation PCP Refresher: LP, University of Calgary, U36
2012/08/23 Simulation PCP Refresher: ABG/Intubation, University of Calgary, U36
2012/07/05 Hi Fidelity Simulator - COPD/PE (2 hrs), University of Calgary, W21C
2012/07/05 Hi Fidelity Simulator – Hyperaldo (2 hrs), University of Calgary, W21C
2012/07/12 Simulation PCP Refresher: Intubation/ABG, University of Calgary, U36
2012/07/12 Simulation PCP Refresher: CVC, University of Calgary, U36
2012/06/07 Simulation Thoracentesis Teaching, University of Calgary, U36
2012/06/21 Simulation Intubation Teaching, University of Calgary, U36
2012/05/02 CCAP Networking session - Hypertensive emergencies (1 hr), Lecture, Alberta Health Services, WHS
2012/05/03 Supervised Internal Medicine Procedural OSCEs: Para, Thora, ABG, intubation, Knee, Student Evaluation, University of Calgary
2012/05/03 Clinical Scenarios with fellows, Small Group Instruction, University of Calgary
2012/05/10 Supervised Internal Medicine Procedural OSCEs: Para, Thora, ABG, intubation, Knee, Student Evaluation, University of Calgary
2012/05/31 Supervised Internal Medicine Procedural OSCEs: CVC, LP, Student Evaluation, University of Calgary
2012/05/31 Internal Medicine Procedural OSCES examiner, Student Evaluation, University of Calgary
2012/04/19 Simulation Paracentesis Teaching, University of Calgary, UME
2012/03/08 Invited Presentation: Teaching a Learner in Difficulty, Lecture, University of British Columbia, Internal Medicine Residency Program, Whistler
2012/03/15 Simulation Thoracentesis Teaching, University of Calgary, UME
2012/03/25 Simulation Harvey Teaching, University of Calgary
2012/03/22 Clinical Scenarios with fellows, Small Group Instruction, University of Calgary
2012/02/02 CVC Train the Trainer
2012/02/02 Simulation Harvey Teaching, University of Calgary
2012/02/08 Remedial Academic Mentoring, Remedial Instruction

0010/00/00	01 1 1 0Y/0 m 11 1Y/0 m 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2012/02/08	Simulation CVC Teaching and US Thyroid, University of Calgary
2012/02/09	Simulation Harvey Teaching, University of Calgary
2012/02/13 - 2012/02/24 2012/01/04 - 2012/01/06	MTU Yellow Team, Clinical Skills Teaching, University of Calgary
	PAC Clinic, Clinical Skills Teaching, University of Calgary  Remedial Academic Mentaring, Remedial Instruction
2012/01/17	Remedial Academic Mentoring, Remedial Instruction
2012/01/19 2012/01/19	Manuscript Preparation, Lecture, University of Calgary Internal Medicine AHD Simulation Paracentesis Teaching, University of Calgary
2012/01/19	Harvey Train the Trainer
2011/12/13	Simulation Harvey Teaching, University of Calgary, W21C
2011/12/15	Simulation CVC Teaching, University of Calgary
2011/12/13	Educational Research, Lecture, University of Calgary Anesthesiology Academic Half Day
2011/12/11	Thora Train the Trainer
2011/11/21	Para Train the Trainer
2011/10/05	Harvey Train the Trainer
2011/10/06	Simulation CVC Teaching, University of Calgary
2011/10/06	Simulation CVC Teaching, University of Calgary  Simulation CVC Teaching, University of Calgary
2011/10/00	Simulation Harvey Teaching, University of Calgary, UME
2011/09/21	CVC Train the Trainer
2011/09/21	Hi Fidelity Simulator - SOB (PE/COPD), University of Calgary
2011/09/29	Student Evaluation, University of Calgary
2011/08/02	Small Group Instruction, University of Calgary - Education Week Orientation
2011/07/29	Thoracentesis, Small Group Instruction, University of Calgary
2011/07/21	Hi Fidelity Simulator - SOB (PE/COPD) (2 hrs), University of Calgary
2011/07/14	Implemented first Internal Medicine Procedural OSCEs. Student Evaluation (4 hrs), University
	of Calgary
2011/07/08	Simulation CVC Teaching, University of Calgary, U36
2011/07/29	Small Group Instruction, University of Calgary - Education Week Orientation
2011/07/27	Thoracentesis, Small Group Instruction, University of Calgary
2011/06/15	Train the Trainer, Simulation Fundoscopy, University of Calgary
2011/06/15	Train the Trainer, Simulation Knee, University of Calgary
2011/06/16	With Stephanie Kaufman, Sue Barnes, Marcy Mintz, and Ghazwan Altabba, Hi fidelity
2011/06/16	Simulation - Nec Fasciitis (6 hrs), University of Calgary, e-Sim
2011/06/16	Coordinated concurrent procedural stations: LP, CVC, ABG, Knee, Shoulder, Fundi, Simulation Half Day, University of Calgary, e-Sim
2011/05/03	Harvey, Small Group Instruction, University of Calgary - Education Week
2011/05/18	Small Group Instruction, University of Calgary - Education Week Orientation
2011/05/20	Knee, Small Group Instruction, University of Calgary - Education Week
2011/05/27	Hi Fidelity Simulator – Hypothyroidism (2 hrs), University of Calgary, e-Sim
2011/05/31	Ran with Stephanie Kaufman and Mike Fisher, Hi fidelity Simulation – Hyperaldo (1 hr), University of Calgary Resident Retreat, e-Sim
2011/05/31	Simulation LP Teaching, University of Calgary - Education Week
2011/05/31	Train the Trainer, Simulation LP, University of Calgary, U36
2011/04/05	Train the Trainer, Simulation Thoracentesis, University of Calgary
2011/04/02 - 2011/04/03	Consult 2 Service Weekend, University of Calgary (UCMC), UCMC
2011/04/07	Simulation CVC Teaching, University of Calgary, W21C
2011/04/06	CCAP Networking session - Approach to Acute Kidney Injury (2 hr), Lecture, Alberta Health Services, WHS

0011/01/11	
2011/04/11	Small Group Instruction, University of Calgary - Education Week Orientation
2011/04/13	Small Group Instruction, University of Calgary - Education Week Orientation
2011/04/19	Harvey Educational Week (1 hr), University of Calgary, UME
2011/04/20	Student Evaluation, Internal Medicine PGY-1 OSCE
2011/04/21	Simulation CVC Teaching, University of Calgary, PLC
2011/04/27	Knee arthrocentesis, subclavian and femoral CVC, Small Group Instruction, University of Calgary - Education Week
2011/04/27	Simulation BMBx Teaching, University of Calgary - Education Week
2011/03/05	Hi fidelity Simulation – HypoNa (3 hrs), University of Calgary Resident Retreat, Kananaskis
2011/03/05	Introduction to Simulation and Feedback, Lecture, University of Calgary Resident Retreat, Kananaskis
2011/03/08	Train the Trainer, Simulation Thoracentesis, University of Calgary
2011/03/09	Simulation Harvey Teaching, University of Calgary, UME
2011/03/09	Trained trainer training, Simulation Thoracentesis, University of Calgary
2011/03/10	Simulation CVC Teaching, University of Calgary, W21C
2011/03/16	Small Group Instruction, University of Calgary - Education Week Orientation
2011/03/21	UAC Clinic, University of Calgary (UCMC), UCMC
2011/02/03	Simulation CVC Teaching, University of Calgary, W21C
2011/02/02	Small Group Instruction, University of Calgary - Education Week Orientation
2011/02/08	Simulation CVC Teaching, University of Calgary, Office
2011/02/10	Simulation CVC Teaching, University of Calgary, W21C
2011/02/16	Small Group Instruction, University of Calgary - Education Week Orientation
2011/02/11	High Fidelity Wegeners (1 hr), University of Calgary, e-SIM
2011/02/23	Simulation retinal exam, University of Calgary, U36
2011/02/24	Simulation CVC Teaching, University of Calgary, W21C
2011/02/25	Hi Fidelity Simulator – Hypercalcemia (1.5 hr), University of Calgary, eSIM
2011/01/07	Small Group Instruction, University of Calgary - Education Week Orientation
2011/01/11	Simulation paracentesis, University of Calgary, U36
2011/01/13	Small Group Instruction, University of Calgary - Education Week Orientation
2011/01/13	Simulation CVC Teaching, University of Calgary, W21C
2011/01/14	High Fidelity HyperCa (1 hr), University of Calgary, UME
2011/01/20	Simulation CVC Teaching, University of Calgary, W21C
2011/01/26	Simulation Harvey Teaching, University of Calgary, UME
2010/12/03	Simulation paracentesis, University of Calgary, U36
2010/12/02	Simulation CVC Teaching, University of Calgary, W21C
2010/12/02	Simulation thoracentesis, University of Calgary, W21C
2010/12/03	Simulation thoracentesis, University of Calgary
2010/12/09	Simulation CVC Teaching, University of Calgary, W21C
2010/12/15	Simulation Harvey Teaching, University of Calgary, UME
2010/11/01	Small Group Instruction, University of Calgary - Education Week Orientation
2010/11/04	Examiner in Surgical Skills Core Curriculum, Student Evaluation, University of Calgary
2010/11/12	Small Group Instruction, University of Calgary - LP Train the Trainer
2010/11/18	Writing Manuscripts, Lecture, University of Calgary Internal Medicine AHD
2010/11/23	Small Group Instruction, University of Calgary - Education Week Orientation
2010/11/25	Simulation CVC Teaching, University of Calgary, W21C
2010/10/07	Simulation CVC Teaching, University of Calgary, W21C

2010/10/13	Small Group Instruction, University of Calgary - Education Week Orientation
2010/10/14	Simulation CVC Teaching, University of Calgary, W21C
2010/10/18	Small Group Instruction, University of Calgary - Education Week Orientation
2010/10/21	Simulation CVC Teaching, University of Calgary, W21C
2010/09/28	GIM Clinic, University of Calgary (UCMC), UCMC
2010/09/22	Small Group Instruction, University of Calgary - Education Week Orientation
2010/09/24	Laboratory, University of Calgary Education Week -Train the Trainers - LP, U36
2010/09/27	Small Group Instruction, University of Calgary - Education Week Orientation
2010/09/30	Hi Fidelity Simulator – MeOH (3 hrs), University of Calgary, UME
2010/08/05	Hi Fidelity Simulator – Asthma (3 hrs), University of Calgary, UME
2010/07/15	Hi Fidelity Simulator - Train the Trainer session (4 hrs), University of Calgary, UME
2010/07/22	Hi Fidelity Simulator - GIB/PUD (3 hrs), University of Calgary, UME
2010/06/03	Simulation CVC Teaching, University of Calgary, W21C
2010/06/10	Simulation CVC Teaching, University of Calgary, W21C
2010/06/17	Simulation CVC Practice Session with Feedback, University of Calgary, W21C
2010/06/15	Workshop co-leader (5 hrs), University of British Columbia, CESEI
2010/05/06	Examiner in Surgical Skills Core Curriculum, Student Evaluation, University of Calgary
2010/05/20	Simulation CVC Teaching, University of Calgary, W21C
2010/05/13	Simulation CVC Teaching, University of Calgary, W21C
2010/05/27	Simulation CVC Teaching, University of Calgary, W21C
2010/04/14	Student Evaluation, Internal Medicine PGY-1 OSCE
2010/03/11	Simulation CVC Teaching, University of Calgary, W21C
2010/03/18	Simulation CVC Teaching, University of Calgary, W21C
2010/03/24	Harvey Teaching to GIM Fellows (3 hrs), Clinical Skills Teaching, University of Calgary
2010/03/25	Simulation CVC Teaching, University of Calgary, W21C
2010/02/04	Simulation CVC Teaching, University of Calgary, W21C
2010/02/04	Simulation CVC Teaching, University of Calgary, W21C
2010/02/25	Simulation CVC Teaching, University of Calgary, W21C
2010/02/26	Simulation - LP Teaching (3 hrs), University of Calgary Resident Retreat, Kananaskis
2010/01/14	Simulation CVC Teaching (3 hrs), University of Calgary, W21C
2010/01/28	Simulation CVC Teaching, University of Calgary, W21C
2009/12/17	Simulator - Train the Trainer session on CVC (3 hrs), University of Calgary, W21C Research Center

# PGME Research Supervision

Primary Supervisor, Megan Crosby
Primary Supervisor, Ian Schoonbaert
Primary Supervisor, Fatima Pirani
Primary Supervisor, Jeffrey Shrum
Primary Supervisor, G Mark Brown
Primary Supervisor, Alison Walzak
Primary Supervisor, Angela Chan
Primary Supervisor, David Low
Primary Supervisor, Brendan Kerr
Primary Supervisor, Sankalp Bhavsar

2010/10 - 2011/03	Primary Supervisor, Zainab Shireen
2010/10 - 2010/11	Primary Supervisor, Andreea Ionescu
2009/06 - 2010/09	Primary Supervisor, Angela Chan
2009/11 - 2010/06	Primary Supervisor, Xuemei Li
2008/07 - 2009/06	Co-Supervisor, Tara Sedlak
2008/07 - 2009/06	Supervisor, Matt Bernard
2007/11 - 2009/06	Primary Supervisor, David Shanks
2007/07 - 2008/06	Supervisor, John Staples
2007/07 - 2008/06	Supervisor, Trina Mclihargey, Rich Sztramko, Vanja Petrovic, Chad Evaschesen, Rose Yeung
2007/07 - 2008/06	Supervisor, Danny Jaswal, Rudy Chow, Surinda Janda, Saeed Ganjizadeh Zavareh, Andrew Yadegari
2007/07 - 2008/06	Co-Supervisor, Tara Sedlak and Sara Stafford
2006/07 - 2007/06	Supervisor, Ayman Al Madani, Melanie Brown, Brian Cho, Margot Davis
2006/07 - 2007/06	Primary Supervisor, Melanie Brown
2006/07 - 2007/06	Primary Supervisor, Scott J Millington
2005/07 - 2006/06	Supervisor, Matthew Bernard, Bradley Quon, Tara Sedlak, Sara Stafford

# iv. Continuing Medical Education

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 (16 hrs; N=125)
2018/03/23	Faculty Scan Shift / Division of General Internal Medicine, University of Calgary (N=2; 2 hrs; Drs. Meghan Vlasschaert, Mary Malebranche)
2018/03/03	Invited Workshop Instructor, IP Resuscitation SKanapalouza, SASKSONO18, University of Saskatchewan, Saskatoon (n=100; 5 hrs)
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 (n=30; 8 hrs; Drs. Walter Tavares, Farhan Bhanji, Irene Ma, Ryan Brydges, Jonathan Duff, Kelly Dore
2017/10/16	Faculty Scan Shift / Department of Family Medicine, University of Calgary (N=3; 2 hrs; Drs. Rabiya Jalil, Annalee Coakley, Nureen Pirbhai)
2017/09/13	Systematic Reviews and Meta-analysis, 1 <sup>st</sup> Annual Office of Surgical Fellowship Principles of Research Course, University of Calgary (N=25; 15 min)
2017/08/08	Faculty Scan Shift / Division of Respiratory Medicine, University of Calgary (N=1; 2 hrs. Dr. Dan Miller)
2017/07/31	Faculty Scan Shift / Department of Family Medicine, University of Calgary (N=3; 2 hrs; Drs. Rabiya Jalil, Annalee Coakley, Nureen Pirbhai)
2017/06/22	Faculty Scan Shift / Division of General Internal Medicine, University of Calgary (N=2; 2 hrs Drs. Gab Fabreau and Janeve Desy)
2017/06/06	Faculty Scan Shift / Department of Family Medicine, University of Calgary (N=3; 3 hrs; Drs. Rabiya Jalil, Annalee Coakley, Nureen Pirbhai)
2017/05/05	Faculty Scan Shift / Division of General Internal Medicine, University of Calgary (N=1; 2.5 hrs Dr. Gab Fabreau)
2017/05/04	Master Teacher Training – US for thyroid physical examination, University of Calgary (N=2; Drs. Peggy Aufricht and Joan Horton; 30 min)
2017/04/24	Faculty Scan Shift / Division of General Internal Medicine, University of Calgary (N=1; 2 hrs Dr. Gab Fabreau)

2017/04/08	Workshop, Sasksono 2017, 2nd Annual Clinical Ultrasound Conference, SKanapalouza, Focused cardiac scan, Invited instructor, Saskatoon, SK (1 hr; n=10)
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 (16 hrs; N=120)
2017/03/21	Faculty Scan Shift / Division of General Internal Medicine, University of Calgary (N=3; Drs. Lee-Ann Hawkins, Paul Gibson, Jennifer Ngo)
2017/03/02	Faculty Scan Shift / Division of General Internal Medicine, University of Calgary (N=2; cotaught with Dr. J. Desy; Drs. Caren Wu and Barry Baylis)
2017/02/21	Faculty Scan Shift / Division of Nephrology, University of Calgary (N=2; Drs. Tasleem Rajan and Sophia Chou)
2017/02/07	Faculty Scan Shift / Division of General Internal Medicine, University of Calgary (N=3)
2017/01/23	Faculty Scan Shift / Division of General Internal Medicine, University of Calgary (N=3)
2017/01/18	Faculty Scan Shift / Division of General Internal Medicine, University of Calgary (N=2)
2017/01/17	Faculty Scan Shift / Division of General Internal Medicine, University of Calgary (N=1)
2016/10/23	Ultrasound for Physical Examination, Workshops / Seminars, 4th World Congress Ultrasound in Medical Education, Lubbock, Texas
2016/07/23 - 2016/07/24	Workshops / Seminars
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
2014/09/17	A Brief Introduction to the Use of Ultrasound for Internists for Volume Status Assessment, Lecture, University of Calgary GIM noon rounds
2014/04/04	Simulation Research - How to go from "We're doing all this simulation - let's just study it" to a Research Program, Workshops / Seminars, 2014 W21C SIMposium, W21C - TRW, Calgary, Alberta
2014/04/04	Workshops / Seminars, University of Calgary, W21C - TRW, Calgary, Alberta
2014/03/07	US Guided LP Refresher, Workshops / Seminars, University of Calgary Master Teacher Program, UME
2014/03/11	US Vascular Access Pediatrics
2014/03/07 - 2014/03/08	US Western Canadian Internal Medicine US Curriculum: IJ and Lung
2013/11/13	US LP and Knee Workshop, Workshops / Seminars, University of Calgary Master Teacher Program, UME
2013/11/29	US Knee Workshop, Workshops / Seminars, University of Calgary Master Teacher Program, UME
2013/10/11	US LP and Knee Workshop, Workshops / Seminars, University of Calgary Master Teacher Program, UME
2013/09/05	US Liver/Kidney Anatomy Train the Trainers
2013/08/20	US IVC/Aorta/Spine Anatomy Train the Trainers
2013/08/23	US Liver Kidney Spleen PE Train the Master Teachers
2013/06/04	3 hour workshop, GIM CME - US introduction, Thoracentesis, Paracentesis, CVC

2013/05/22	US Thyroid PE Train the Master Teachers
2013/01/08	Thora, Para, LP and Knee, Workshops / Seminars, University of Calgary SHC Hospitalist Group, e-SIM South Tower
2013/01/15	Thora, Para, LP and Knee, Workshops / Seminars, University of Calgary SHC Hospitalist Group, e-SIM South Tower
2013/01/18	US PE Echo Refresher
2012/11/27	US PE JVP/Echo Train the Master Teachers
2012/11/28	US PE JVP/Echo Train the Master Teachers
2012/11/30	Small Group Procedural Teaching Skills Workshop, Workshops / Seminars, University of Calgary Master Teacher Program, UME
2012/08/02	US PE Abdomen Train the Master Teachers
2012/08/21	US PE Abdomen Train the Master Teachers
2012/08/22	US PE Abdomen Train the Master Teachers
2012/05/10	Train the Trainer Thyroid Refresher, PBL2
2012/05/30	5 hour workshop + 5 hours to prepare, GIM CME Retreat - US introduction, Thoracentesis, Paracentesis, CVC
2012/04/20	Train the Trainer Knee/Shoulder/Thoracentesis, G748
2012/04/24	Train the Trainer Thyroid Refresher, PBL2
2012/04/25	Research in Progress Rounds - the DECIDE Study, Workshops / Seminars, University of Calgary, G382
2012/02/08	Train the Trainer Thoracentesis, U36
2012/01/16	Train the Trainer Thoracentesis and Paracentesis, U36
2012/01/19	Intro to US - Thorax Imaging, U36
2011/12/13	US JVP Train the Master Teachers
2011/12/13	US Thyroid PE Train the Master Teachers
2011/12/15	Review of Anticoagulation, Mentoring
2011/11/29	CVC Train the Trainers
2011/10/04	Train the Trainer Thoracentesis, G750
2011/04/15	1 hour workshop given on Knee, Shoulder arthrocentesis, Train the Master Teachers
2011/03/04	CVC Train the Trainers
2011/03/09	Paracentesis Train the Trainers
2011/03/16	CVC Train the Trainers
2011/03/18	1.5 hour workshop given on Knee, Shoulder arthrocentesis and LP, Train the Master Teachers
2011/02/09	2 hr session given, LP & Knee Train the Master Teachers
2011/02/24	CVC Train the Trainers
2010/10/08	Workshops / Seminars, University of Calgary, Rockyview General Hospital
2010/09/01	Knee Train the Master Teachers
2010/08/31	CVC Train the Master Teachers
2010/07/07	Knee Train the Master Teachers
2010/07/06	LP Train the Master Teachers (1 hr)
2010/07/15	CVC Train the Trainers (1 hr)
2010/06/09	Knee Train the Master Teachers (1 hr)
2010/05/04	Harvey Teaching, Harvey Teaching, UME
2010/04/12	Harvey Teaching to staff. Harvey Teaching, (1.5 hrs) UME
2010/04/12	LP Train the Master Teachers (1 hr)
2010/04/13	LP Train the Master Teachers
2006/11/02	Acid Base Disorders Workshop, Workshops / Seminars, Canadian Society of Internal

	Medicine Annual Scientific Meeting, Calgary, AB
2006/10/05	Postoperative Delirium, Lecture, Vancouver General Hospital Medical Grand Rounds, Vancouver General Hospital
2006/05/05	Workshops / Seminars, 30th Annual Internal Medicine Review, PHC, St. Paul's Hospital
2005/11/18	Acid Base Disorders Workshop, Workshops / Seminars, Rocky Mountain/ACP Internal Medicine Meeting, Calgary, AB
2004/11/20	Emergencies in Maternal/Fetal Medicine, Workshops / Seminars, Rocky Mountain/ACP Internal Medicine Meeting, Calgary, AB
2004/04/28	Race and ethnicity: Should medicine be colour-blind, Lecture, St. Paul's Hospital Medical Grand Rounds, St. Paul's Hospital

# v. Community Education

2018/03/15	Community Paramedics Laboratory Tests Lecture part 1 (for Complex Care Hub), N=9; 1 hr
2018/02/22	Community Paramedics Laboratory Tests Lecture part 1 (for Complex Care Hub), N=15; 1 hr
2018/02/09	Community Paramedics Physical Examination training (for Complex Care Hub), N=3, 2 hrs
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, Leonie Tesorero (nursing student)

## VI. ADMINISTRATIVE RESPONSIBILITIES

### i. Departmental

2017/07/25	Member, Search and Selection Committee for Clinician Researcher, General Internal Medicine, Department of Medicine, University of Calgary
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
	Applications reviewed 2012 (n=3), 2013 (n=15), 2014 (n=12), 2015 (n=7), 2016 (n=1), 2017 (n=14), 2018 (n=1)
2009/08/01 - present	Leader, Focus Area: Clinical Simulation - W21C
2014/11/11 - 2015/03/04	Member, Search and Selection Committee, Tenure-track Faculty in Medical Education - University of Calgary
2014/06/05	Member, Office of Health and Medical Education Scholarship Executive Committee,

University of Calgary

2013/12/05 - 2014/03/31 Member, Search and Selection Committee, Associate Dean, Undergraduate Medical

Education, University of Calgary

2010/10/06 - 2010/12/15 Member, Selection Committee - Medical Education - University of Calgary

#### iii. University

2017/07 – present C	Course 8 – Evaluations	Clerkship OSCE,	UME, University of Calgary

2017/07 – present Course 8 Course Leader – Procedures & Bedside Ultrasound, UME, University of Calgary

2012/07 – 2017/06 Co-Chair, Co-Chair of Course 8 - (0.1 FTE) - 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

### i. Membership in professional and learned societies

2013/10/08 - present Member, Society of General Internal Medicine

2013/03/26 - present Member, WinFocus

2013/01/01 - present Member, Canadian Association for Medical Education
2011/05/02 - present Member, Calgary Institute for Population and Public Health

2010/06/01 - present Member, Association for Medical Education in Europe

2009 - present Member, Alberta Medical Association

2008/07/01 - present Member, Society for Simulation in Healthcare 2008/01 - present Member, Canadian Society of Internal Medicine

2011/05 Member, Society of Ultrasound in Medical Education

### ii. Professional service

#### **Grant Review**

2016/02/09 - 2016/02/14 University of Calgary, Internal Grant Review for CIHR Project Scheme

2015/11/23 Canadian Association for Medical Education Wooster Family Grant in Medical Education

2013/05/07 - 2013/06/10 University of Calgary, Orthopaedic Research Grant

2011/01 - 2011/02 University of Calgary, Department of Surgery and Department of Medicine Research

Competition

#### **Journal Reviews**

2018/05/11 – 2018/05/24 Simulation in Healthcare 2018/03/09 – 2018/03/22 Journal of Hospital Medicine

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2018/03/08 – 2018/03/19 Annals of Internal Medicine
2018/03/02 - 2018/03/08 Southern Medical Journal
2018/02/20 - 2018/02/26 Simulation in Healthcare
2018/01/23 - 2018/02/14
                         Advances in Health Sciences Education
2018/01/30 - 2018/02/13 Annals of Internal Medicine
2017/11/07 – 2017/11/17 Anatomical Sciences Education
2017/10/30 – 2017/11/07 Advances in Health Sciences Education
2017/10/18 - 2017/10/31
                         BMJ Open
2017/08/07 - 2017/08/22 Critical Ultrasound Journal
2017/08/03 – 2017/08/11 Advances in Health Sciences Education
2017/07/27 - 2017/08/01
                         Academic Medicine
2017/07/14 - 2017/07/25
                         Simulation in Healthcare
2017/07/08 - 2017/07/18
                         Journal of Hospital Medicine
2017/06/23 - 2017/06/27
                         Annals of Internal Medicine
2017/06/05 - 2017/06/17
                         Critical Ultrasound Journal
                         Annals of Internal Medicine
2017/06/05 - 2017/06/08
2017/05/17 – 2017/05/25 Pediatrics
2017/04/19 - 2017/05/04
                         Academic Medicine
2017/04/12 - 2017/04/16
                         Advances in Health Sciences Education
2017/03/31 - 2017/04/13
                         Journal of Hospital Medicine
2016/12/17 - 2016/12/23
                         Academic Medicine
2016/12/19 - 2016/12/22
                         Anatomical Sciences Education
2016/12/13 - 2016/12/19
                         Medical Education
2016/12/12 - 2016/12/14
                         Critical Ultrasound Journal
2016/11/07 - 2016/11/13
                         Journal of Hospital Medicine
2016/06/17 - 2016/06/28
                         Journal of Hospital Medicine
                         Advances in Health Sciences Education
2016/04/08 - 2016/05/09
2016/04/21 - 2016/05/10
                         Academic Medicine
2016/04/18 - 2016/04/26
                         Annals of Internal Medicine
2015/11/02 - 2015/11/30
                         Advances in Health Sciences Education
2015/07/13 - 2015/07/16
                         Annals of Internal Medicine
2015/06/19 - 2015/06/24
                         Journal of Hospital Medicine
2015/03/24 - 2015/04/02
                         Advances in Health Sciences Education
2015/01/19 - 2015/01/30
                         Academic Medicine
2014/12/12 - 2014/12/30
                         Annals of Internal Medicine
2014/11/07 - 2014/11/24
                         Academic Medicine
2014/08/18 - 2014/09/04
                         Academic Medicine
2014/08/18 - 2014/08/28
                         Annals of Internal Medicine
2013/11/12 - 2013/11/22
                         Academic Medicine
2013/07/10 - 2013/07/18
                         Annals of Internal Medicine
2013/05/23 - 2013/06/13
                         Academic Medicine
2013/03 - 2013/03/23
                         Academic Medicine
2013/01/16 - 2013/01/30
                         BMC Medical Education
2012/12/18 - 2013/01/08
                         Journal of the Society for Simulation in Healthcare
2012/12/27 - 2013/01/06
                         Annals of Internal Medicine
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Academic Medicine

2012/12/10 - 2012/12/31

2012/12/10 - 2012/12/13	International Journal of Medical Education
2012/12/14 - 2012/12/20	Advances in Health Sciences Education
2012/11/07	Journal of the Society for Simulation in Healthcare
2012/09/30 - 2012/10/21	Academic Medicine
2012/08/15 - 2012/08/29	BMC Medical Education
2012/07/30 - 2012/08/20	Journal of the Society for Simulation in Healthcare
2012/06/21 - 2012/07/12	Academic Medicine
2012/06/04 - 2012/06/19	Canadian Medical Education Journal
2012/06/05 - 2012/06/26	Journal of the Society for Simulation in Healthcare
2012/06/08 - 2012/06/22	Annals of Internal Medicine
2012/04/25 - 2012/05/07	Annals of Internal Medicine
2012/04/25 - 2012/05/08	Academic Medicine
2012/03/01 - 2012/03/02	Journal of the Society for Simulation in Healthcare
2012/03/02 - 2012/03/03	Journal of the Society for Simulation in Healthcare
2012/01/20 - 2012/02/03	Journal of the Society for Simulation in Healthcare
2011/12/09 - 2011/12/20	Journal of Hospital Medicine
2011/11/29 - 2011/12/20	Journal of the Society for Simulation in Healthcare
2011/11/02 - 2011/11/10	Journal of the Society for Simulation in Healthcare
2011/09/16 - 2011/09/30	Journal of Hospital Medicine
2011/07/13 - 2011/08/04	Journal of the National Medical Association
2011/06/17 - 2011/07/12	Journal of the National Medical Association
2011/06/23 - 2011/07/14	Canadian Medical Education Journal
2011/02/15 - 2011/03/08	Journal of the Society for Simulation in Healthcare
2010/02/09 - 2010/03/01	Journal of Hospital Medicine
2009/09/17 - 2009/10/05	Journal of Hospital Medicine
2009/09/24 - 2009/10/28	Journal of the National Medical Association
2009/08/14 - 2009/08/24	Journal of the National Medical Association
2009/07	Journal of Hospital Medicine
2009/04	Journal of Hospital Medicine
2009/03	Social Science & Medicine
2008/11	Journal of the National Medical Association
2008/08	Journal of Health Care for the Poor and Underserved
2008/04	Journal of Health Care for the Poor and Underserved
2007/09	Journal of the National Medical Association
2007/08	Journal of General Internal Medicine
2007/06	Journal of Health Care for the Poor and Underserved
2007/03	Therapeutics Initiatives, Evidence based drug therapy
2007/02	Journal of General Internal Medicine
2006/07	Journal of General Internal Medicine
2006/05	Journal of the National Medical Association
2004/03	Therapeutics Initiatives, Evidence based drug therapy

# **Editorships**

2012/11 - present Associate Editor, Canadian Medical Education Journal 2018/05/13 – 2018/05/28 Canadian Medical Education Journal, Manuscript #33

Canadian Medical Education Journal, Manuscript #32
Canadian Medical Education Journal, Manuscript #31
Canadian Medical Education Journal, Manuscript #30
Canadian Medical Education Journal, Manuscript #29
Canadian Medical Education Journal, Manuscript #28
Canadian Medical Education Journal, Manuscript #27
Canadian Medical Education Journal, Manuscript #26
Canadian Medical Education Journal, Manuscript #25
Canadian Medical Education Journal, Manuscript #24
Canadian Medical Education Journal, Manuscript #23
Canadian Medical Education Journal, Manuscript #22
Canadian Medical Education Journal, Manuscript #21
Canadian Medical Education Journal, Manuscript #20
Canadian Medical Education Journal, Manuscript #19
Canadian Medical Education Journal, Manuscript #18
Canadian Medical Education Journal, Manuscript #17
Canadian Medical Education Journal, Manuscript #16
Canadian Medical Education Journal, Manuscript #15
Canadian Medical Education Journal, Manuscript #14
Canadian Medical Education Journal, Manuscript #13
Canadian Medical Education Journal, Manuscript #12
Canadian Medical Education Journal, Manuscript #11
Canadian Medical Education Journal, Manuscript #10
Canadian Medical Education Journal, Manuscript #9
Canadian Medical Education Journal, Manuscript #7
Canadian Medical Education Journal, Manuscript #8
Canadian Medical Education Journal, Manuscript #6
Canadian Medical Education Journal, Manuscript #5
Canadian Medical Education Journal, Manuscript #4
Canadian Medical Education Journal, Manuscript #3
Canadian Medical Education Journal, Manuscript #2
Canadian Medical Education Journal, Manuscript #1

# **National and International Committees**

2018/02/01	Executive (full voting) Member, 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	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**

2017/09/11 - 2017/10/01	Promotion to Associate Professor, School of Medicine, Oregon Health & Science University,
	Portland, OR, USA
2016/11/02 - 2016/12/03	Promotion to Associate Professor and Tenure, Discipline of Family Medicine, Faculty of
	Medicine Memorial University of Newfoundland St. John's Newfoundland Canada

## **Other**

2017/11/28 - 2017/12/11	Reviewer for 9 CaRMS applications for Internal Medicine Residency Program, University of Calgary
2017/07/22	Moderator, Practical POCUS Matters Panel Q&A, Point-of-Care & General Medicine Ultrasound, AIUM, ACP, Oregon Health & Science University, Portland, OR
2016/05/01	Moderator, Poster presentations (Assessment) 2017 Canadian Conference on Medical Education, Winnipeg, MB (n=9)
2017/04/13 - 2017/04/16	Reviewer, Abstracts, Internal Medicine Residency Program Resident Research Day (n=12)
2017/04/08	Judge, Oral Abstracts, SaskSono 2017, 2nd Annual Clinical Ultrasonography Conference, Saskatoon, SK, Canada (n=5)
2017/04/08	Judge, SonoGames, SaskSono 2017, 2nd Annual Clinical Ultrasonography Conference, Saskatoon, SK, Canada (2 teams)
2017/01/16 - 2017/01/16	Interviewer for 5 CaRMS applicants for Internal Medicine Residency Program, University of Calgary
2016/12/06 - 2016/12/15	Reviewer for 10 CaRMS applications for Internal Medicine Residency Program, University of Calgary
2016/09/23	Poster Judge; Fourth World Congress Ultrasound in Medical Education
2016/03/08 - 2016/03/11	Canadian Society of Internal Medicine, Reviewer for the Canadian Society of Internal Medicine 2016 European School of Internal Medicine Travel Grant Applications
2015/11/06	Reviewer for the Canadian Society of Internal Medicine 2016 Education and Research Fund
2015/10/16 - 2015/10/17	Reviewer for 25 abstracts submitted to the 2016 Canadian Conference on Medical Education
2015/06/15 - 2015/06/16	Canadian Society of Internal Medicine, Ted Giles Clinical Vignettes Reviewer, Canadian Society of Internal Medicine 2015
2015/05/22 - 2015/06/10	2015 W21C Innovation Academy Abstract Review
2015/01/26	Interviewer - University of Calgary Internal Medicine CaRMS Interviews
2014/12/16	Reviewer for the Canadian Society of Internal Medicine 2015 Education and Research Fund
2014/06/23 - 2014/06/24	Canadian Society of Internal Medicine, Ted Giles Clinical Vignettes Reviewer, Canadian Society of Internal Medicine 2014

2014/04/04	W21C, University of Calgary, Professor Rounds Poster Judge at W21C SIMposium
2014/04/11	Reviewer for the Canadian Society of Internal Medicine 2014 European School of Internal Medicine Travel Grant Applications
2013/10/06	Reviewer for 30 abstracts submitted to the 2014 Canadian Conference on Medical Education
2013/06/25 - 2013/07/08	CSIM, Reviewed 35 abstracts for 2013 CSIM Annual Meeting, Ted Giles Prize
2013/04 - 2013/04/11	University of Calgary, Judge, Health Services Research Posters. Resident Research Day
2012/04/26	University of Calgary, Judge, Clinical Research Poster Group 1. Resident Research Day
2011/01 - 2011/01/31	Interviewer - University of Calgary Internal Medicine CaRMS Interviews
2010/01/29	Interviewer - University of Calgary Internal Medicine CaRMS Interviews

# VIII. RESEARCH SUPPORT

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.
2018/02 - 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 ultrasongraphy in internal medicine. 2017 CSIM Education and Research Fund. Principal Investigator: Dr. Janeve Desy
2016/07 – 2017/06	\$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.
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.
2014/06 - 2015/06	\$7,500, Funded, <i>Principal/Senior investigator</i> , Evaluating the usability of augmented reality technology in simulation-based teaching of central venous catheterization, 2014 University of Calgary Teaching and Learning Grant
2013/06 - 2014/09	\$10,000, Funded, <i>Principal/Senior investigator</i> , 2013 DOM Quality Improvement Spring Competition: Evaluating the Implementation of a Procedure Cart for Internal Medicine Postgraduate Training, Department of Medicine
2013/04 - 2014/04	\$16,070, Funded, Co-investigator, Improving bedside procedural competence using electromagnetic tracking as part of the training program, Alberta Health Services- Department of Medicine ARP Business Costs Program - Competition A
2013/04 - 2014/04	\$30,000, Funded, <i>Co-investigator</i> , Four hand-held ultrasound devices, Alberta Health Services- Department of Medicine ARP Business Costs Program - Competition A
2012/09 - 2013/12	\$47,536, Funded, <i>Principal/Senior investigator</i> , 2012 Medical Education Research Grant: Development of Error-Based Checklists in Bedside Procedural Skills: An Exploration of their

	Role in the Assessment of Procedural Competency, The Royal College of Physicians and Surgeons of Canada
2012/01 - 2013/06	\$157, 908, Funded, <i>Site-investigator</i> , DECIsion-making about goals of care for hospitalized meDIcal patiEnts: a multicentre, mixed-methods study. The DECIDE Study, Canadian Institutes of Health Research (CIHR)
2011/11 - 2012/11	\$26,000, Funded, <i>Principal/Senior investigator</i> , Real time ultrasound training, Alberta Health Services- Department of Medicine ARP Business Costs Program - Competition A
2011/01 - 2012/09	\$10,000, Funded, <i>Principal/Senior investigator</i> , Comprehensive Assessment of Procedural Skills In Internal Medicine, Department of Medicine Research Development Fund Competition 2010; University of Calgary, Alberta Health Services
2010/03 - 2011/03	\$12,500, Funded, <i>Co-Principal Investigator</i> , Effects of Educational Strategies on Cognitive Load for Teaching Medical and Surgical Procedures: An Exploratory Study, Department of Medicine & Department Surgery Research Development Fund Awards 2010; University of Calgary, Alberta Health Services
2009/12 - 2010/01	\$20,000, Funded, <i>Principal/Senior investigator</i> , Lumbar puncture and knee arthrocentesis training for Undergraduate Medical Education, Alberta Health Services
2008/07 - 2009/06	\$30,000, Funded, <i>Principal/Senior investigator</i> , Redefining procedural teaching in an internal medicine curriculum using simulators, University of British Columbia, Department of Medicine
2007/07 - 2008/06	\$4,600, Funded, <i>Principal/Senior investigator</i> , Use of clinical simulators in teaching lumbar punctures in an internal medicine curriculum, University of British Columbia, Faculty of Medicine
2005/01 - 2005/12	\$41,434, Funded, <i>Co-investigator</i> , A better method for determining medication history at the time of hospital admission, BC Medical Services Foundation

### IX. MENTORING

2016/09 – present	Mentor, Janeve Desy, General Internist junior faculty
2017/01 – present	Mentor, Anshula Ambasta, General Internal Medicine fellow, transition to faculty
2011/07 - 2012/07	Mentor, Aliya Kassam, Medical Education faculty

# X. INVITED ADDRESSES / PRESENTATIONS

# i. Invited addresses

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, 0.75 hr
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, 0.5 hr
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, 0.3 hr
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, 1 hr
2017/04/08	Invited Plenary Speaker, Sasksono 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, 1 hr
2017/03/10	Invited workshop leader and speaker, Point-of-care Ultrasound for the Nephrologist, Alberta Kidney Day, Calgary, AB, 2.5 hrs
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, 1.5 hr

Panel Member, Simulation in Clerkship, 13th Canadian Conference on Medical Education; AFMC 2015/04/26 Clerkship Interest Group, Vancouver, British Columbia, Canada, 0.5 hr Presenter, Competency-based assessment of technical skills in bedside procedures: the good, the bad, and 2015/03/26 the ugly, CEEP Rounds, Toronto Western Hospital, The HoPingHong Center, Toronto, Ontario, Canada, 1 hr Invited Speaker, The Nuts and Bolts of Introducing Ultrasound Training for Internal Medicine, Third 2014/10/10 Annual World Congress Ultrasound in Medical Education, Portland, Oregon, United States, 1 hr Co-chair, Performance Based Assessment Interest Group in Internal Medicine, CSIM Annual Meeting, 2014/10/04 Calgary, Alberta, Canada, 1 hr Invited Panel Member, Mentorship Session: Medical education, basic science research, clinical research, 2014/10/03 administration, community medicine, under-served populations, clinical medicine, CSIM Annual Meeting, Calgary, Alberta, Canada, 1 hr Invited Speaker, Measuring "Good Enough": Assessing Technical Skills in Medicine, University of 2014/05/29 Ottawa, AIME, the Academy for Innovation in Medical Education, Healthcare Education Rounds, Ottawa, Ontario, Canada, 1 hr Invited Panel Member, Simulation as an Assessment Tool in Clerkship, 12th Canadian Conference on 2014/04/27 Medical Education/16th Ottawa Conference; AFMC Clerkship Group, Ottawa, Ontario, Canada, 0.5 hr Invited Panel Member, Ultrasound Research in Canada, 12th Canadian Conference on Medical 2014/04/26 Education/16th Ottawa Conference; AFMC Clinical Skills Group, Ottawa, Ontario, Canada, 0.5 hr Invited Speaker, Simulation/High Stakes Exams, Rocky Mountain/ACP/AMA Internal Medicine Meeting, 2012/11/23 Banff, Alberta, Canada, 1

#### ii. Presentations

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; 1.5 hrs
- 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, 1.0 hr x 3
- 2017/11/02 Faculty co-supervisor: <u>Ruzycki, S</u>, 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 OI Research Poster Competition.
- 2017/11/02 Faculty Supervisor, <u>Pirani F</u>, 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, 4 hrs (N=40)
- 2017/11/01 Faculty Supervisor, <u>Schonbaert I, A revolutionary tool for airway management</u>. W21C Innvoation 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, 1.5 hr (N=32)
- 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, QC, 1.5 hr
- 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. 1.5 hrs (N=34)
2017/04/08	Invited Panel Discussant, Sasksono 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, 1 hr
2016/10/25	Presenter, Correlation of carotid blood flow and carotid flow time with invasive cardiac output measurements, CHEST, Los Angeles, California, United States, 0.5 hr
2016/09/24	Co-chair, Focused Assessment With Sonography for Trauma (FAST) - WB05, Fourth World Congress Ultrasound in Medical Education, Lubbock, Texas, United States, 1.5 hrs
2016/09/24	Workshop Leader, Renal/Bladder Ultrasound - WC01, Fourth World Congress Ultrasound in Medical Education, Lubbock, Texas, United States, 1.5 hr
2016/08/30	Presenter, Ultrasound-facilitated anatomy teaching and learning outcomes, AMEE 2016. An International Association for Medical Education, Barcelona, Barcelona, Spain, 1 hr
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, 1 hr
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, 0.5 hr
2014/10/11	Presenter, Reported Cognitive Load Associated with Using Ultrasound may Inform Curriculum Development for Teaching Anatomy and Physical Examination Skills, Third Annual World Congress Ultrasound in Medical Education, Portland, Oregon, United States, 0.5 hr
2014/10/01	Workshop Leader, Bedside Ultrasound I: Introduction workshop covering the basics of ultrasound including hands-on imaging of JVP and IVC, CSIM Annual Meeting, Calgary, Alberta, Canada, 2 hr
2014/10/01	Workshop Leader, Bedside Ultrasound II: Advanced ultrasound including hands-on imaging of the lung, CSIM Annual Meeting, Calgary, Alberta, Canada, 2 hrs
2014/09/01	Faculty Supervisor, Increased cognitive load due to knobology impairs learners' utility of ultrasound, AMEE 2014. An International Association for Medical Education, Milan, Milano, Italy, 1 hr
2014/04/28	Faculty Supervisor, Cognitive load imposed by knobology may adversely affect learners' ability to learn physical examination skills using ultrasonography, 12th Canadian Conference on Medical Education/16th Ottawa Conference, Ottawa, Ontario, Canada, 0.5 hr
2014/04/28	Faculty Supervisor, Students' and Educators' Opinions Differ on Which Procedures Must be Mastered by Medical School Graduates, 12th Canadian Conference on Medical Education/16th Ottawa Conference, Ottawa, Ontario, Canada, 0.5 hr
2014/04/24	Workshop Leader, Using Bedside Ultrasound in Internal Medicine – Exploring Its Role in Education, Society of General Internal Medicine 37th Annual Meeting, San Diego, California, United States, 1.5 hrs
2014/04/04	Presenter, Simulation Research - How to Go from "We're doing all this simulation - let's just study it" to a Research Program, W21C SIMposium, Calgary, Alberta, Canada, 1.5 hr
2014/03/26	Competency-based Assessment for Procedural Skills: Easier Said than Done, Lecture, University of Calgary Medical Education Seminar Series, TRW Rose Room
2014/03/17	Faculty Supervisor, The Impact of Clinical Interruptions on Central Venous Catheterization (CVC) Performance: A Pilot Study, Human Factors and Ergonomics Society 2014 International Symposium on Human Facotrs and Ergonomics in Health Care, Chicago, Illinois, United States
2013/11/16	Workshop Leader, Ultrasound-Guided Thoracentesis and Paracentesis, Rocky Mountain/ACP/AMA Internal Medicine Meeting, Banff, Alberta, Canada, 3 hrs
2013/10/05	Chair, Performance-based Assessment Interest Group in Internal Medicine, Annual Meeting, Canadian Society of Internal Medicine, Toronto, Ontario, Canada

2013/10/03	Chair, Simulation Interest Group, Annual Meeting, Canadian Society of Internal Medicine, Toronto, Ontario, Canada
2013/09/27	Presenter, Using Ultrasound to Teach Physical Examination Skills – Medical Educators' Perspectives, 2nd World Congress Ultrasound in Medical Education, Columbia, South Carolina, United States
2013/09/27	Faculty Supervisor, The use of checklists compared to global rating scales for the assessment of procedural competence, The International Conference on Residency Education, Calgary, Alberta, Canada
2013/06/28	Co-presenter, Death of a Manikin during simulation training of Medical students: Adverse effects on learning, 6th International Cognitive Load Theory Conference, Toulouse, Haute-Garonne, France
2013/04/22	Presenter, Introducing an integrated ultrasound curriculum into undergraduate medical education: the University of Calgary experience, Canadian Conference on Medical Education, Quebec City, Quebec, Canada, 0.5 hrs
2013/04/21	Presenter, Feasibility of scenario-based simulation training versus traditional workshops in continuing medical education: a randomized controlled trial, Canadian Conference on Medical Education, Quebec City, Quebec, Canada, 0.5 hrs
2012/11/24	Workshop Leader, Hands-on Ultrasound Training. The Cardiovascular Limited Ultrasound Examination, Rocky Mountain/ACP/AMA Internal Medicine Meeting, Banff, Alberta, Canada, 3 hrs
2012/10/18	Faculty Supervisor, Comparison of a 3-point versus a binary checklist for assessment of procedural skills, Canadian Society of Internal Medicine, Quebec City, Quebec, Canada, 1 hr
2012/10/18	Co-chair, Internal Medicine Simulation Interest Group, Canadian Society of Internal Medicine Annual Meeting, Quebec City, Quebec, Canada, 1hr
2012/10/12	Invited Speaker, University of Calgary Ultrasound Program: the Undergraduate Medical Education (UME) Experience, Western Medical Schools Annual Meeting, Calgary, Alberta, Canada, 0.5 hrs
2012/08/27	Faculty Supervisor, Comparison of a 3-point versus a binary checklist for assessment of procedural skills, AMEE 2012, Lyon, Rhône, France, 1 hr
2012/04/15	Presenter, Assessment of central venous catheterization skills by direct observation: a systematic review of checklists, Canadian Conference on Medical Education, Banff, Alberta, Canada, 0.5 hrs
2012/03/16	Invited Speaker, Teaching Bedside Procedural Skills Using Simulation - Aren't we all doing that already? Why another talk, e-SIM Grand Rounds, Alberta, Canada, 2 hrs
2012/01/30	Co-presenter, Emotions, cognitive load, and learning outcomes during simulation training, 12th Annual International Meeting on Simulation in Healthcare, San Diego, California, United States, 0.5 hrs
2012/01/12	Invited Speaker, Simulation-based Credentialing for Hospital Procedures in an Era of Patient Safety. An Expert Panel Discussion, 12th Annual International Meeting on Simulation in Healthcare, San Diego, California, United States, 0.75 hrs
2011/11/26	Presenter, Use of Hypertonic Saline in Hyponatremia (Short Snapper), Rocky Mountain/ACP Internal Medicine Meeting, Banff, Alberta, Canada, 1 hr
2011/11/26	Co-presenter, Assessment of shortness of breath in pregnancy, Rocky Mountain/ACP Internal Medicine Meeting, Banff, Alberta, Canada, 3 hrs
2011/11/04	Co-presenter, Comparing self-regulated and instructor-regulated learning approaches when teaching lumbar puncture on a simulator, AAMC Research in Medical Education Annual Conference 2011, Denver, Colorado, United States
2011/11/03	Faculty Supervisor, Development of a comprehensive set of assessment tools for evaluation of procedural skills in internal medicine, 2011 Simulation Summit, Montreal, Quebec, Canada
2011/10/26	Co-presenter, Death of a manikin: adverse effects on learning and mechanisms, Chest 2011, Honolulu, Hawaii, United States, 0.5 hrs
2011/10/14	Faculty Supervisor, Development of a comprehensive set of assessment tools for evaluation of procedural skills in internal medicine, Annual Scientific Meeting Canadian Society of Internal Medicine, Halifax, Nova Scotia, Canada
2011/09/23	Presenter, Outcomes of simulation-based education in central venous catheterization: a systematic review and meta-analysis, The International Conference on Residency Education, Quebec City, Quebec, Canada, 2 hrs
2011/09/23	Presenter, Workshop: Best practices for simulation-based procedural teaching in non-surgical

	specialties, The International Conference on Residency Education, Quebec City, Quebec, Canada, 4 hrs
2011/01/24	Co-presenter, Simulator-based training in medical students: beware of "faux amis", Society for Simulation in Healthcare Annual Meeting 2011, New Orleans, Louisiana, United States
2010/11/10	Presenter, Teaching Medical Procedures Using Simulation – Where is the Evidence, Medical Education Seminar Series, Calgary, Alberta, Canada, 1 hr
2010/10/30	Workshop Leader, Workshop - Acid-Base Disorders: a Case-Based Approach, Canadian Society of Internal Medicine, Annual Scientific Meeting, Vancouver, British Columbia, Canada, 2 hrs
2010/10/27	Workshop Leader, Clinical Teaching Workshop - How to deal with a problem resident/colleague (1 hr workshop repeated 3 times), Canadian Society of Internal Medicine, Annual Scientific Meeting, Vancouver, British Columbia, Canada, 3 hrs
2010/10/05	Presenter, Teaching Procedural Skills in Internal Medicine, W21C Monthly Seminar, Calgary, Alberta, Canada, 1.5 hrs
2010/09/07	Presenter, Central venous catheterization skill acquisition - does method of instruction matter, An International Association for Medical Education, Glasgow, United Kingdom, 1 hr
2010/09/06	Faculty Supervisor, Residents as procedural teachers: impact on central venous catheterization skills, An International Association for Medical Education, Glasgow, United Kingdom, 1 hr
2010/06/04	Invited Speaker, Optimizing psychomotor skills acquisition in central venous catheterization, W21C Health Research and Innovation Forum, Calgary, Alberta, Canada, 0.3 hr
2010/02/05	Workshop Leader, Train the Trainer, How to Teach Lumbar Puncture and Knee Arthrocentesis Using Simulators, 8th Annual Quality Improvement Forum, University of Calgary, Calgary, Alberta, Canada,
2009/11/14	Presenter, Interpretation of Arterial Blood Gases (Short Snapper), Rocky Mountain/ACP Internal Medicine Meeting, Banff, Alberta, Canada
2009/09/26	Co-presenter, Using television shows to teach communication skills in internal medicine residency, The International Conference on Residency Education, Victoria, British Columbia, Canada
2009/09/25	Faculty Supervisor, Characterizing the optimal use of simulators for teaching medical procedures: The learner's perspective, The International Conference on Residency Education, Victoria, British Columbia, Canada
2009/09/25	Presenter, Comparing two methods to evaluate technical competence in central venous catheterization on simulators, The International Conference on Residency Education, Victoria, British Columbia, Canada
2009/09/24	Presenter, Comparing two methods to evaluate technical competence in central venous catheterization on simulators, Simulation Summit, Victoria, British Columbia, Canada
2009/09/23	Workshop Leader, Introduction to Integrated Cardiac Medical Education Using Harvey Cardiopulmonary Simulator, Educating the Educators: Let's Get Started, Simulation Summit, Vancouver, British Columbia, Canada
2008/09/25	Presenter, Using simulation for lumbar puncture training in an internal medicine residency curriculum, The International Conference on Residency Education, Ottawa, Ontario, Canada
2007/05/03	Presenter, Elderly patients with congestive heart failure - adherence to clinical practice guidelines, 2006 American Geriatrics Society Annual Scientific Meeting, Chicago, Illinois, United States
2006/04/20	Co-presenter, Outcomes of an outreach CHF nurse in elderly patients with congestive heart failure, 2006 Canadian Geriatrics Society Annual Scientific Meeting, Vancouver, British Columbia, Canada
2005/05/11	Presenter, Reporting and use of race/ethnicity in general medical journals, Society of General Internal Medicine Annual Meeting, New Orleans, Louisiana, United States
2004/05/15	Presenter, Cardiac investigations in kidney transplant wait list candidates - reliance on clinical indications is not effective, American Transplant Congress, Boston, Massachusetts, United States

## XI. PUBLICATIONS

# i. Peer Reviewed Manuscripts

\*Trainees' names are underlined

- 1. <u>Cessford T</u>, 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 2017; doi: 10.1002/jum.14506.
- 2. **Ma IWY,** Arishenkoff S, Wiseman J, <u>Desy J,</u> 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; do: 10.1007/s11606-017-4071-5.
- 3. <u>Shrum J, Hallihan G, Jones J, Tesorero L, Gregson G, Kaba A, Holroyd-Leduc JM, Borkenhagen D, Lambert LA, Ma IWY.</u> Impact of a procedural cart on procedural efficiency. Am J Med Qual 2017;32(3):342-343. PMID: 28467863.
- 4. 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.
- 5. **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.
- 6. <u>Jones J.</u> Wilkins M, Caird J, Kaba A, Cheng A, **Ma IWY.** An experimental study on the impact of clinical interuptions on simulated trainee performances of central venous catheterization. Advances in Simulation 2017; 2:5.
- 7. 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.
- 8. Ponton-Carss A, Kortbeek JB, **Ma IW**. Assessment of technical and nontechnical skills in surgical residents. Am J Surg 2016; 212(5):1011-1019.
- 9. Urban D, Dehaeck R, Lorenzetti D, Guilfoyle J, Poon M-C, Steele M, Lardner D, **Ma IWY**, Brindle ME. Safety and efficacy of transexamic acid in bleeding paediatric trauma patients: a systematic review protocol. BMJ Open 2016;6:e012947
- 10. 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
- 11. <u>Brown GM</u>, 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
- 12. 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
- 13. <u>Chan A, Singh S,</u> 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.
- 14. **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
- 15. 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
- 16. 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.
- 17. 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 Ordons 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
- 18. 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
- 19. 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
- 20. <u>Low D, Vlasschaert M, Novak K, Chee A, **Ma IW**</u>. An argument for using additional bedside tools, such as bedside ultrasound, for volume status assessment in hospitalized medical patients: aneeds assessment survey. J Hosp Med. 2014; 9(11):727-30. doi: 10.1002/jhm.2256. PMID:25211491
- 21. 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]
- 22. **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
- 23. **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.
- 24. 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
- 25. 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.
- 26. <u>Kerr B,</u> 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
- 27. **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
- 28. **Ma IWY**, <u>Chapelsky S, Bhavsar S, Connors W,</u> Fisher M, Schaefer J, Bacchus M. Procedural Certification Program: Enhancing Resident Procedural Teaching Skills. MedEd Publish. Dec 18, 2012
- 29. 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.
- 30. 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
- 30. 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
- 31. 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
- 32. 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
- 33. **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):1137-1147
- 34. **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. [Epub ahead of print]
- 35. **Ma IWY**, Teteris E, Roberts JM, Bacchus M. Who is teaching and supervising our junior residents' central venous catheterizations? BMC Medical Education. 11(1):16. Apr 25, 2011
- 36. <u>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. [Epub ahead of print]</u>
- 37. **Ma IWY**, Roberts JM, Wong RY, Nair P. Procedural teaching tree to aid resident doctor peer-teachers. Medical Education 2010;44:1134-5
- 38. 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

- 39. <u>Millington SJ</u>, 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. 14;4(7):410-416. Sep 2009
- 40. Wong RY, Saber SS, **Ma I**, Roberts JM. Using television shows to teach communication skills in internal medicine residency. BMC Med Educ 9(1):9. Feb 2009
- 41. 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 62(4):284-289. 2009
- 42. 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 3(1):26-9. Feb 2008
- 43. **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 60(6)572-8. Jun 2007
- 44. 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 71(7):687-92. Apr 2007
- 45. **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 20(2):139-46. Mar 2006
- 46. 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 17(1):244-53. 2006
- 47. 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 16(3):808-16. 2005
- 48. Cowie SE, **Ma I**, Lee SK, Smith RM, Hsiang YN. Nosocomial MRSA infection in vascular surgery patients: impact on patient outcome. Vasc Endovascular Surg 39(4):327-34. 2005
- 49. **Ma I**, Hladunewich M. Does the prophylactic use of N-acetylcysteine prevent contrast nephropathy in patients with renal insufficiency. CMAJ 170(8):1231. 2004
- 50. Hoang K, Tan JC, Derby G, Blouch KL, Masek M, **Ma I**, Lemley KV, Myers BD. Determinants of glomerular hypofiltration in aging humans. Kidney Int 64:1417-1424. 2003

#### 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. **Irene W.Y. Ma**, Rosaleen Chun and Andrew W. Kirkpatrick. Basics of Ultrasound; Chapter 1, Pages 1-36. Ultrasonography in the ICU, Practical Applications. May 2015
- 2. Brindle ME, **Ma I**, Moss L. Pulmonary Infections. Surgical Directives: Pediatric Surgery. Lippincott Williams and Wilkins. 2002

#### iv. Abstracts - Published Peer Reviewed

- 1. **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.
- 2. <u>Tesorero L</u>, 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).
- 3. 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
- 4. 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

- 5. **Ma IWY**, Brindle M, Ronksley P, Lorenzetti D, Sauve R, Ghali W. Outcomes of simulation-based education in central venous catheterization: a systematic review and meta-analysis. Open Medicine 2011; 5(3): 62.
- 6. **Ma IWY**, Zalunardo N, Brown M, Pachev G, Hatala R. Comparing two methods to evaluate technical competence in central venous catheterization on simulators. Open Medicine 2009; 3(3 suppl): 31
- 7. <u>Shanks D.</u> Wong RY, Roberts JM, Nair P, **Ma IWY**. Characterizing the optimal use of simulators for teaching medical procedures: the learner's perspective. Open Medicine 2009; 3(3 suppl): 35.
- 8. Wong RY, Saber SS, **Ma IWY**, Roberts JM. Using television shows to teach communication skills in internal medicine residency. Open Medicine 2009; 3(3 suppl): 54
- 9. **Ma IWY**, Sedlak T, Stafford S, Wong RY, Kassen B, Roberts JM. Using simulation for lumbar puncture training in an internal medicine residency curriculum. Open Medicine 2008 2(3 suppl): 63
- 10. Hill A, Roberts M, **Ma I**, Li C. Outcomes of a heart failure transitional care pilot project. J Am Geriatr Soc 2006;54(S4):S141
- 11. **Ma IW**, Li C, Roberts J, Hill A. Elderly patients with congestive heart failure adherence to clinical practice guidelines. J Am Geriatr Soc 2006; 54(S4):S43
- 12. **Ma IW**, Khan NA, Kang A, Zalunardo N, Palepu A. Reporting and use of race/ethnicity in general medical journals. J Gen Intern Med 2005;20:S1
- 13. Khan NA, **Ma IW**, Thompson C, Humphries K, Salem D, Sarnak MJ, Levin A. Association of the K/DOQI classification system of chronic kidney disease and mortality in heart failure population. J Gen Intern Med 2005;20(S1).
- 14. **Ma IWY**, Gill JS, Johnson NL, Landsberg D, Levin A. Cardiac investigations in kidney transplant wait list candidates reliance on clinical indications is not effective. Am J Transplantation 2004;4:S8
- 15. **Ma IWY**, Gill JS, Johnson NL, Landsberg D, Levin A. Time-averaged predictors of cardiac events on the kidney transplant waiting list. J Am Soc Nephrol 2003; 14:435A
- 16. **Ma I**, Gill J, Tinckam K, Landsberg D, Levin A. Adverse events on the kidney transplant waiting list: incidence and risk factors. Am J Transplantation 2003:3:S5
- 17. Hoang KN, **Ma IWY**, Derby GC, Blouch KL, Myers BD. Effects of aging on glomerular filtration rate. J Am Soc Nephrol 2002;13:657A
- 18. **Ma I**, Valantine HA, Scandling JD. Clinical predictors of angiographically significant coronary artery disease in kidney transplant candidates with diabetes mellitus type 1. Clin Invest Med 2002:25(4);151
- 19. **Ma I**, Valantine HA, Shibata A, Waskerwitz J, Dafoe D, Alfrey E, Tan J, Millan M. Busque S, Scandling JD. Current prevalence of coronary artery disease in kidney transplant candidates with type 1 diabetes mellitus. J Am Soc Nephrol; 2002:13:192A
- 20. **Ma I**, Valantine HA, Shibata A, Waskerwitz J, Dafoe D, Alfrey E, Tan J, Millan M. Busque S, Scandling JD. Detection of coronary artery disease in kidney and/or pancreas transplant candidates with type 1 diabetes mellitus. J Am Soc Nephrol; 2002:13:192A
- 21. **Ma I**, Valantine HA, Shibata A, Waskerwitz J, Dafoe D, Alfrey E, Tan J, Millan M. Busque S, Scandling JD. Validation of a screening protocol for coronary artery disease in kidney and/or pancreas transplant candidates with type 1 diabetes mellitus. J Am Soc Nephrol; 2002:13:191A

#### v. Abstracts - Published Non-Peer Reviewed

#### vi. Communications - Peer Reviewed

- 1. Desy JR, **Ma IWY.** In defence of teaching point-of-care ultrasound in undergraduate medical education. Med Educ 2017;51(10):1087.
- 2. **Ma I**. Basic Abdominal POCUS for the General Internist. American Institute of Ultrasound in Medicine Webinar, http://www.aium.org/cme/testsWebinar.aspx, https://www.youtube.com/watch?v=H9vIokcQMo8&feature=youtu.be&a. Sep 21, 2016
- 3. **Ma, I.** Emergency Ultrasound Journal Club Summaries. MGH Emergency Ultrasound Educational Website. Lung ultrasound in the diagnosis and follow-up of community-acquired pneumonia. A prospective, multicenter, diagnostic accuracy study. Available at: https://drive.google.com/file/d/0B-qoKOmZPI4kOTZfZ1NxZTNTUGs/view. Feb 24,

- 4. **Ma IWY**. Embracing complexity: taking the messiness in simulation-based training one step further. Medical Education 2015;49 (4):344-354
- 5. **Ma I**, Nagassar S, Sharma N, Wishart I, Holroyd-Leduc J, Novak K. Ultrasound-Guided Paracentesis. MedEdPORTAL;2014. Available from: www.mededportal.org/publication/9744
- 6. **Ma IWY**, Chapelsky S, Bhavsar S, Connors W, Fisher M, Schaefer J, Bacchus M. Procedural Certification Program: Enhancing Resident Procedural Teaching Skills. Medical Teacher. Jun 2013
- 7. **Ma, IWY**. Setting up a simulation-based procedural curriculum for internal medicine residency programs: what are the basic ingredients needed? Canadian Journal of General Internal Medicine. 2011; 6(1):13-14

#### vii. Communications - Non-Peer Reviewed

- 1. **Ma, I**. LP US Static Guidance. Calgary IMUS website. Available at: https://www.youtube.com/watch?v=QZVjQ2Fwj4Q. Jan 24, 2018
- 2. **Ma, I**. JVP. Basic Introduction. Calgary IMUS website. Available at: <a href="https://www.youtube.com/watch?v=y-ZxU\_jADNQ">https://www.youtube.com/watch?v=y-ZxU\_jADNQ</a>. Oct 3, 2017
- 3. **Ma, I**. Intraperitoneal Free Fluid. Basic Technique. Calgary IMUS website. Available at: https://www.youtube.com/watch?v=5k6poKu19Yc. Sep 21, 2017
- 4. **Ma, I**. Using the FMC Machines. Calgary IMUS website. Available at: <a href="https://www.youtube.com/watch?v=DXLWj6SwJQo">https://www.youtube.com/watch?v=DXLWj6SwJQo</a>. July 7, 2017
- Ma, I. Applied MedEd Methods 101: Designing a Pre-Post Simulation Study. International Clinician Educators (ICE) Blog. Invited blog. Royal College of Physicians and Surgeons of Canada. Available at: <a href="https://icenetblog.royalcollege.ca/2017/10/20/applied-meded-methods-101-designing-a-pre-post-simulation-study/">https://icenetblog.royalcollege.ca/2017/10/20/applied-meded-methods-101-designing-a-pre-post-simulation-study/</a> October 20, 2017
- 6. Babione J, Borkenhagen D, Hallihan G, **Ma I**, Wijdenes. An Augmented Reality Training Tool for Central Venous Catheterization. Heuristic Evaluation. W21C. Aug 2017.
- 7. **Ma, I.** IVC. Basic Introduction. Calgary IMUS website. Available at: <a href="https://youtu.be/qHWLFfXtGn8">https://youtu.be/qHWLFfXtGn8</a> July 7, 2017
- 8. **Ma, I.** Cardiac Ultrasound Scanning Conventions. Calgary IMUS website. Available at: <a href="https://www.youtube.com/watch?v=-1i1i9sbjqE">https://www.youtube.com/watch?v=-1i1i9sbjqE</a>. Dec 20, 2016
- 9. **Ma, I**. Basic Cardiac Ultrasound Views 3: Apical 4 Chamber (A4C). Calgary IMUS website. Available at: <a href="https://www.youtube.com/watch?v=\_xXJgRVC0pU">https://www.youtube.com/watch?v=\_xXJgRVC0pU</a>. Dec 9, 2016
- 10. **Ma, I.** Basic Cardiac Ultrasound Views 2: Parasternal Short Axis. Calgary IMUS website. Available at: https://www.youtube.com/watch?v=sz7M9ZahEUY. Dec 6, 2016
- 11. **Ma, I.** Basic Cardiac Ultrasound Views 1: Parasternal Long Axis (PSLA). Calgary IMUS website. Available at: https://www.youtube.com/watch?v=psvAcACvTcY. Dec 5, 2016
- 12. **Ma, I.** Pleural Effusion. Calgary IMUS website. Available at: <a href="https://www.youtube.com/watch?v=CtITQ7BnWRI&t=27s">https://www.youtube.com/watch?v=CtITQ7BnWRI&t=27s</a>. Nov 3, 2016
- 13. **Ma, I**. Basic Lung B Lines. Calgary IMUS website. Available at: <a href="https://www.youtube.com/watch?v=k6CgiTmgjIw&t=31s">https://www.youtube.com/watch?v=k6CgiTmgjIw&t=31s</a>. Nov 3, 2016
- 14. **Ma, I.** Basic Lung Ultrasound: Technique and Normal Findings. Calgary IMUS Website. Available at: <a href="https://www.youtube.com/watch?v=RBgGA\_rqVvE&t=37s">https://www.youtube.com/watch?v=RBgGA\_rqVvE&t=37s</a>. Nov 2, 2016
- 15. **Ma, I.** Emergency Ultrasound Journal Club Summaries. MGH Emergency Ultrasound Educational Website. Summary on An integrated imaging strategy of a clinical decision rule plus ultrasound for imaging in appendicitis s cost-effective. Available at: https://drive.google.com/file/d/0B-qoKOmZPI4kc1JvY3BjYXZPNjg/view. Feb 10, 2016
- 16. **Ma, I**. Grading Hydronephrosis on Bedside Ultrasound. MGH Emergency Ultrasound Educational Website. Ultrasound Tutorials. Available at: https://sites.google.com/site/mghedus/home/ultrasound-tutorials/gradinghydronephrosisonbedsideultrasound. Dec 22, 2015
- 17. **Ma, I**. RV versus LV. MGH Emergency Ultrasound Educational Website. Ultrasound Tutorials. Available at: https://sites.google.com/site/mghedus/home/ultrasound-tutorials/rvversuslv. Dec 5, 2015
- 18. **Ma, I**. E/A Ratio and Diastolic Dysfunction. MGH Emergency Ultrasound Educational Website. Ultrasound Tutorials. Available at: http://tinyurl.com/qgum2xh. Sep 4, 2015

19. **Ma, I.** The Role of Education in Promoting Patient Safety in Bedside Procedural Skills: The Unsung Hero. Episode 10, W21C Patient Safety Podcast. Available at: https://itunes.apple.com/mz/podcast/w21c-patient-safety-podcast/id621618444 or http://w21c.org/education/the-podcast. Jul 19, 2013

### viii. Accepted Manuscripts

1. **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. Southern Medical Journal.