the radiology report

Volume 1, Issue 3, September 2016

A Radiologist Primer for Competency by Design

Greetings comRADs!

There has been many meetings and discussions regarding the upcoming accreditation by the Royal College. Faculty and residents have been positive, constructive, open and forthcoming. As Program Directory, I thank you for your input and I appreciate all the feedback. Open, professional communication is key to building and maintaining a successful program. I believe we are all aware that accreditation is a time when we can all focus on our program: on what we are doing right, and what we can do better.

This issue is not about accreditation however. We have spent considerable productive time preparing for this event. This issue will focus on the Competency by Design, Research, and Simulation.

Competency by Design

There is an upcoming major change to how the Royal College Accredited Programs will deliver education. This is known as Competence by Design. There are significant changes coming. There is excellent opportunity to embrace how we change the training of our future physicians. This will impact how we teach and assess our trainees in the CanMEDs domains (i.e, medical expert or communicator). As your program director, I have been trying to digest the upcoming changes and I present them (greatly summarized) as best as I can to you. I *always* welcome your questions. I want there to be many!

WHY CBD?

It is felt that current specialists can graduate with knowledge gaps and feel unprepared for independent practice. Existing assessment/ feedback is not always linked well to learning objectives. Currently residents lose needed clinical practice to prepare for certification exams. We need a model that is based on patient and learner needs, and focused on skills and performance instead of a time based 5 year residency plan.

WHAT is CBD (vs CBME)?

Canadian medical education has a structure to ensure our trainees are being educated on the topics they need to serve the public. This structure is an organized framework of competencies (CanMEDS 2015).

Competency-based medical education (CBME) is an outcomes-based educational program, based on an organized framework of competencies. It is used in a variety of other educational systems.

Competence by Design (CBD) is the Royal College's "brand" of CBME for Canadian residency training.

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HOW is CBD going to change the current framework?

In the Competence by Design (CBD) model, residency has four stages *(Figure 1)*:

Moving the exam should not shorten residency training. A resident has to pass the exam at the end of the Core of Discipline stage but this will NOT lead to certification. The Royal College will only grant certification when the resident has successfully completed the Transition to Practice stage and has received sign-off from the residency program committee and the postgraduate office.

Currently residents spend the last year of their programs preparing for their certification exams (losing valuable clinical time). CBD will shift exams earlier in training, so the final year is not lost to textbooks, and instead can be used to hone clinical skills.

Completing each stage of training will require completing an EPA. What is an EPA? It is something that is made of milestones…

A little about Milestones and EPAs

Milestone is something you can watch someone do. It is an ability.

Entrustable professional activity (EPA) is a radiology task that a staff can delegate to a resident. These occur throughout each stage of the CBD continuum. EPAs are used for assessment, and are observed by the radiology staff. They are the tasks that must be accomplished, whereas milestones refer to the individual's abilities. An EPA integrates multiple milestones from multiple CanMED roles.

An example of a Medical Oncology EPA: *Initial care for urgent and emergent oncologic situations* (this is the **task**)

The abilities (**milestones**) needed to accomplish this task (EPA) are :

Recognize urgent and emergent oncologic issues, including but not limited to, pain, pain crisis, febrile neutropenia, uncontrolled diarrhea, hypocalcemia, epidural compression and malignant bowel obstruction.

Select and administer appropriate interventions for urgent and emergency key logic Issues.

Identify the limits of their own expertise and appropriately seek assistance and supervision.

Here is a little visualization of mapping milestones to each stage of the CBD continuum (Figure 2):

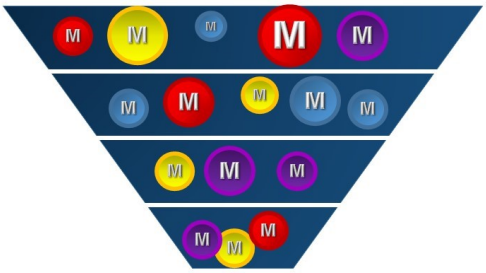

Figure 2

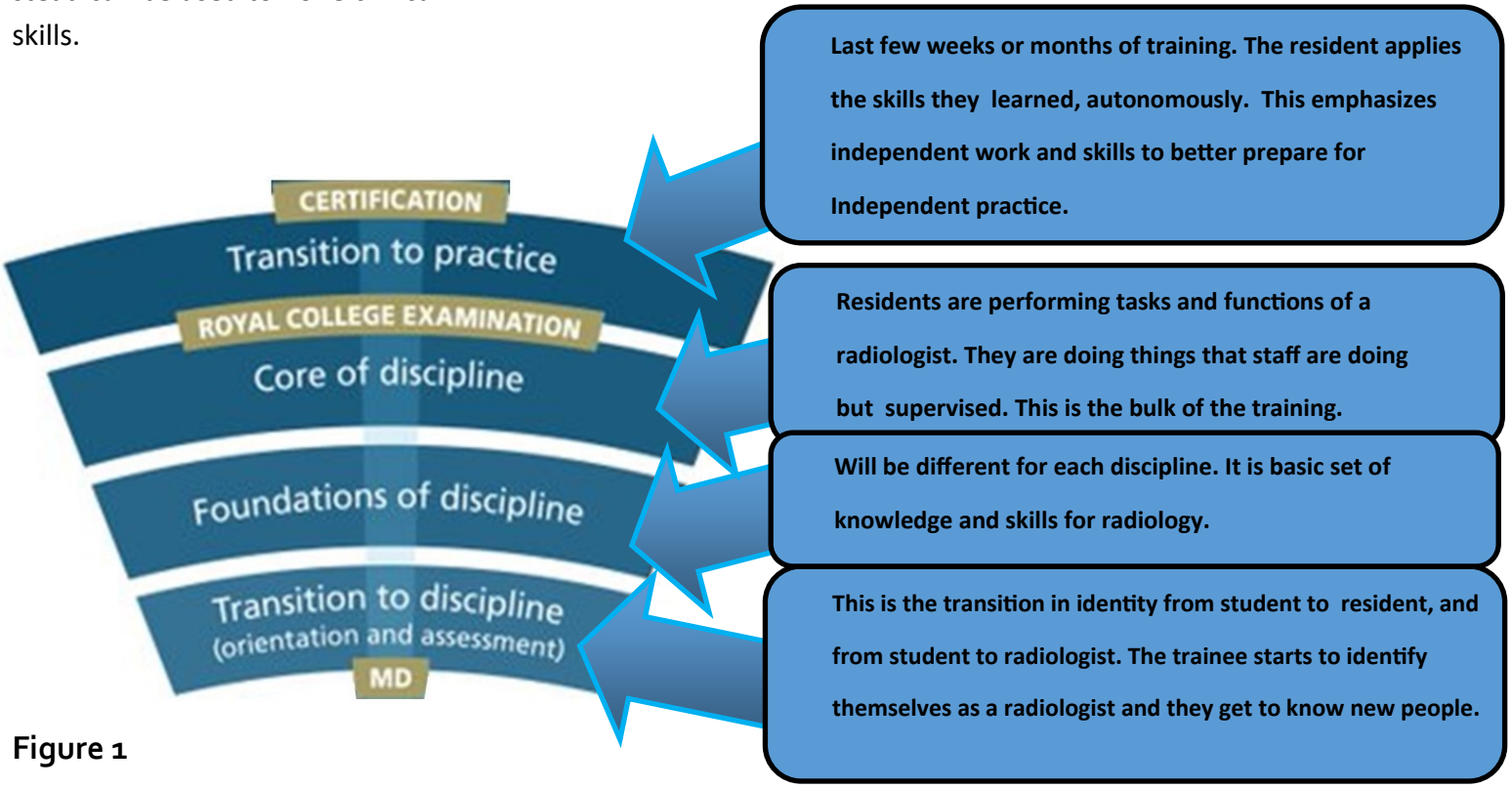

Figure 1

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And as we have learned, normally an EPA (a task) will be built from multiple milestones (Figure 3) :

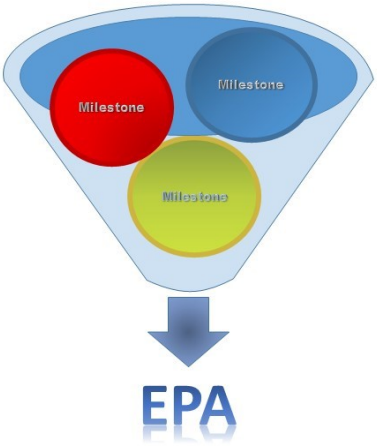


Figure 3

Finally, EPAs are to be linked to a certain stage:

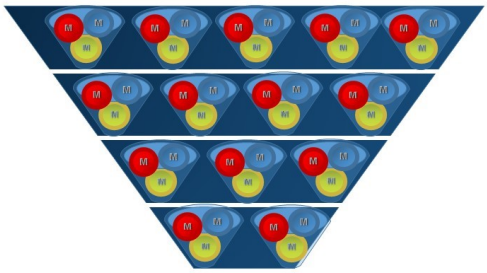


Figure 4

The intention is for radiology residents to track their progress through training. When resident collects all the EPAs for that stage, then the RPC makes a decision on the progression of the resident to the next stage

WHEN is CBD?

-CBD is being rolled out over the next decade in cohorts as follows (Figure 5):

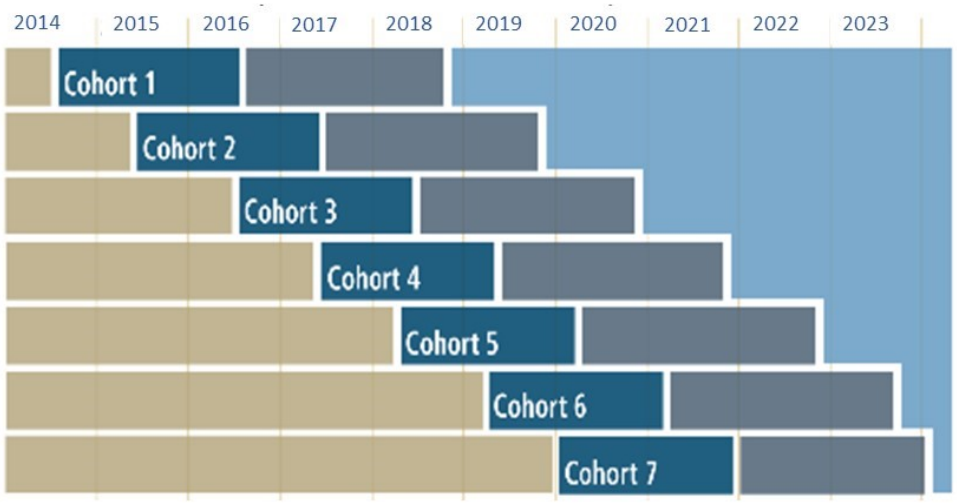


Figure 5

- Medical Oncology and Otolaryngology/Head and Neck Surgery are the 2 residency programs in the first CBD cohort. **Radiology is cohort 6.**

- Cohort 2 (Anesthesiology, Forensic Pathology, Gastroenterology, Internal Medicine, Surgical Foundations, and Urology) will integrate CBD into their teaching and assessment practices in 2017.

-Over the next decade, the remaining residency programs will work with their national colleagues, spending 1-2 years to develop CBD curriculum

What can I do as a radiology resident and radiology staff?

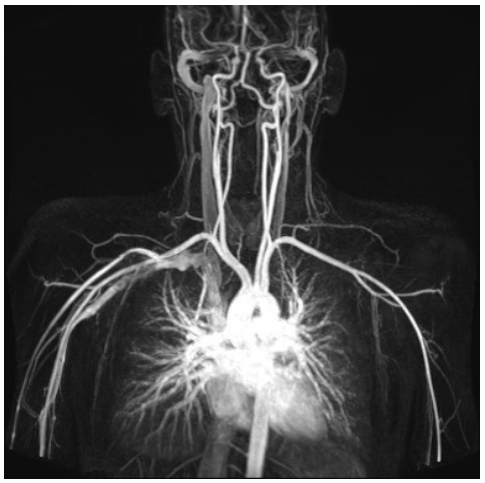
-Talk about it. This will affect anyone working in an academic institution.

-Make sure you have a solid understanding of CBD. Google it. Youtube it.

-Ask yourself What should a resident do at this point-in-training?

-Ask yourself what are some EPAS that apply to radiology?

I have collected and paraphrased this information from multiple sources: The Royal College website, including multiple webinars, webpages, and multimedia handouts. I have modified some diagrams from the source material to fit this newsletter. If you would like to see any of the original material, please contact me.



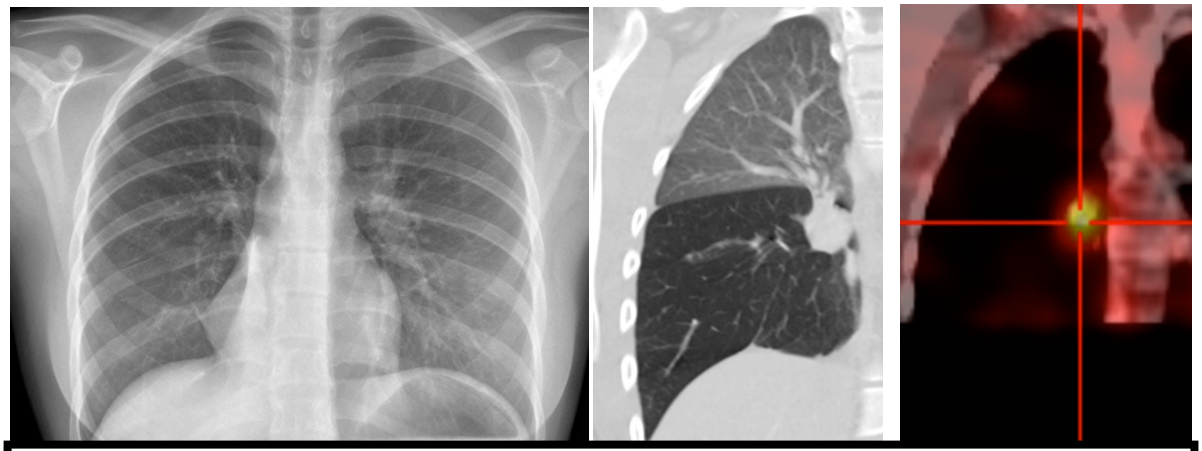
American Institute for Radiologic Pathology

The American institute for Radiologic Pathologic is a program of the American College of Radiology. Every year we support our residents in attending this course in their PGY3 year. The courses are comprehensive reviews of the spectrum of pathology on imaging, with correlation in pathology and pathophysiology.

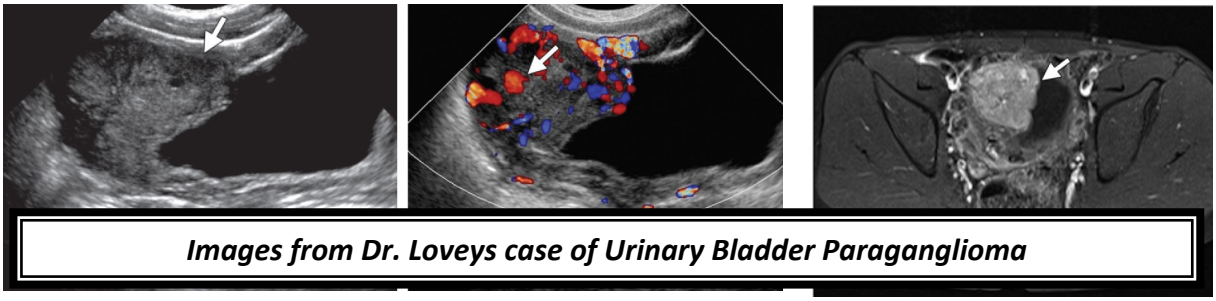
We have been well represented in the last three consecutive years with these awards:

- Dr. Loveys was chosen for publication in RadioGraphics, Sep 2015, Vol. 35: 1433–1438. His submission of a Urinary Bladder Paraganglioma won AIRP Best Cases in Radiologic-Pathologic Correlation. The authors on the paper were Fraser W. Loveys, MD, Chitra Pushpanathan, MD, Stephanie Jackman, MD.
- Dr. Melanie Stenback was chosen for AIRP Best Thoracic Case on her submission Endobronchial carcinoid during her rotation in 2015
- Dr. Sarah Pittman was chosen for publication in the ACR/AIRP eLearning RAD-PATH Dx program with her submission of a large intrathoracic benign metastasizing leiomyoma.

Our discipline is incredibly proud to be recognized so consistently at this large prestigious course. Well done to these radiology residents! Thank you to the Discipline of Pathology for contributing to our residents training! And good luck to future participating residents!



Images from Dr. Stenbacks case of Bronchial Carcinoid



Images from Dr. Loveys case of Urinary Bladder Paraganglioma

The Simulation Summit is a unique and practical, interprofessional medical simulation education conference, which attracts hundreds of international simulation educators, researchers, health care professionals and other individuals engaged in the field of simulation.

The 2016 conference theme, Extreme Simulation, will explore simulation research, learning and practice in a spectrum of contexts and settings, from hospitals and university teaching centres, to rural and remote locations.

Participants at the 2016 Simulation Summit will have the opportunity to collaborate with international colleagues on knowledge translation as it relates to simulation in healthcare; examine new technologies in medical simulation; investigate advances in medical simulation and much more.

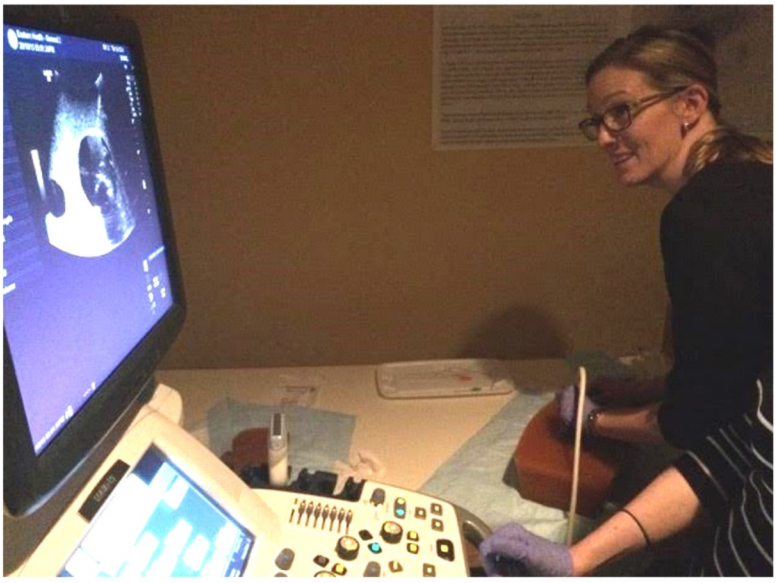
This two day conference is open to all individuals engaged in the field of simulation, from all healthcare disciplines.

Source: *http://www.royalcollege.ca/rcsite/events/simulation-summit-e*

Having this international conference occurring on our own back porch is a phenomenal opportunity and I encourage all residents and staff to participate in this excellent opportunity. Simulation education is part of our future.

-Angus Hartery

Radiology Academic Half Day Ultrasound Simulation



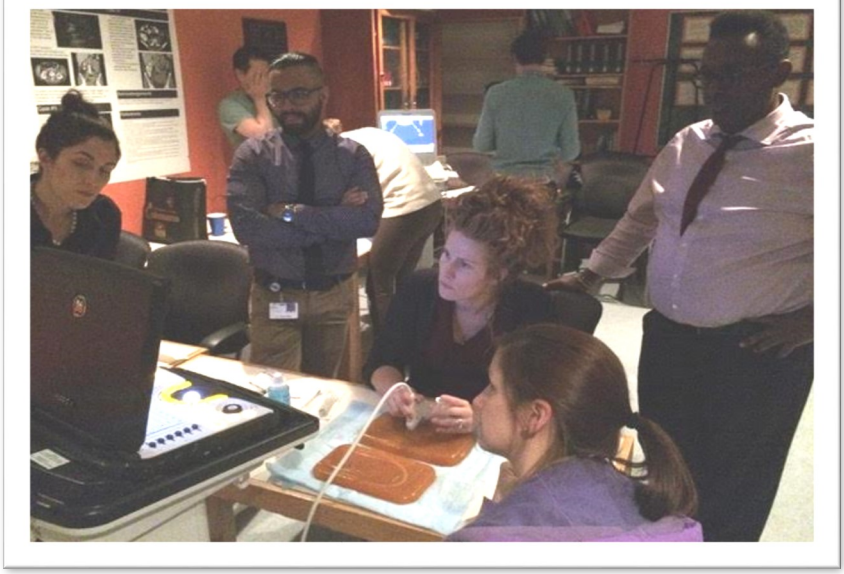
Dr. Myers obtaining best approach for pudding filled abscess with jello mould.

This past fall, residents participated in a new hands-on ultrasound simulation procedural workshop, organized by Dr. Young and Dr. Skanes.

While the senior residents fine tuned their procedural skills, the junior residents were able to learn and practice ultrasound guided punctures for vascular access, aspiration and drain placement using several "made from scratch" models.

These models were made to simulate the echotexture of human soft tissues, blood vessels, pockets of fluid and even overlying ribs when scanned with ultra-

Radiology Academic Half Day Ultrasound Simulation



Dr. Bissell performing ultrasound guided fine needle aspiration under tutelage from Dr. Skanes.

Dr. Coffey examining the acoustic window for ultrasound guided sampling.

sound! Residents worked with an ultrasound machine in small groups, rotating through and completing each of the procedural stations which included:

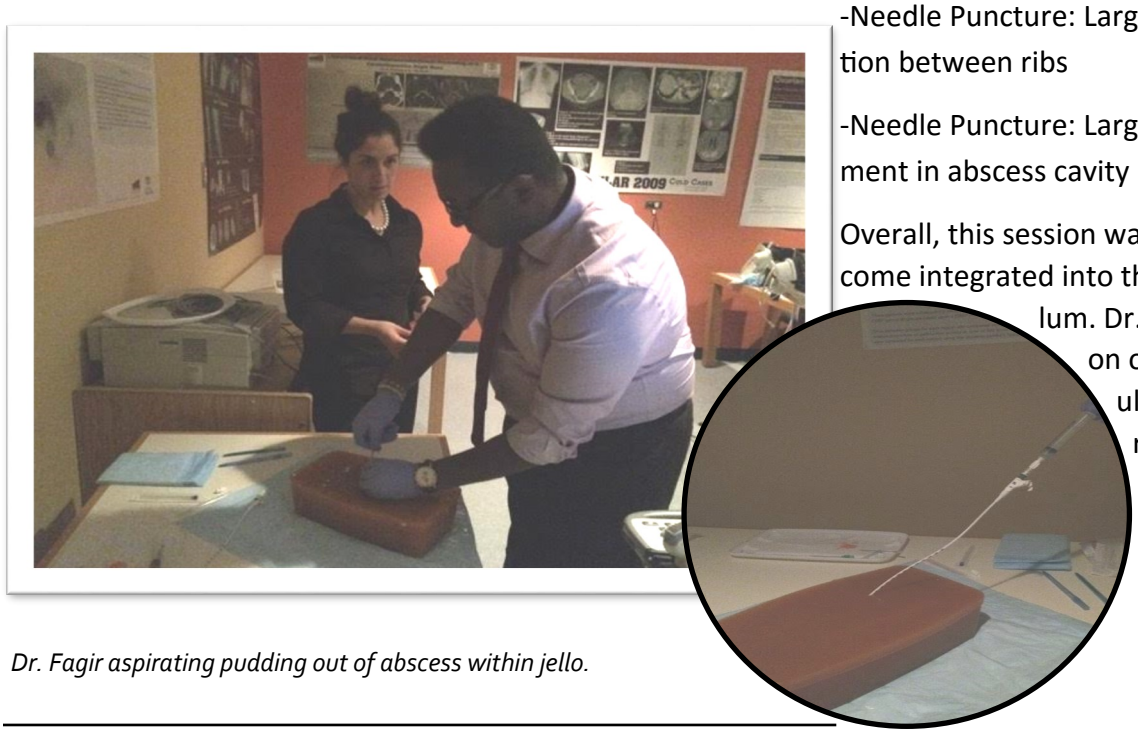
-Vascular access: In plane/Out of plane technique

-Needle Puncture: Small model superficial cyst aspiration

-Needle Puncture: Large model deep abscess aspiration between ribs

-Needle Puncture: Large model pigtail drain placement in abscess cavity

Overall, this session was well received and will become integrated into the regular teaching curriculum. Dr. Young is currently working on other methods of integrating ultrasound simulation into the residency curriculum and she welcomes all interested parties.



Dr. Fagir aspirating pudding out of abscess within jello.

UGME Radiology Research

The Annual Student Research Day for Phase 3 Medical Students at Memorial was held on Thursday, June 23, 2016. Among peers, faculty members and guests, students presented their research findings that had been conducted throughout their pre-clerkship training. This year the Discipline of Radiology was represented by four students with a variety of research projects including:

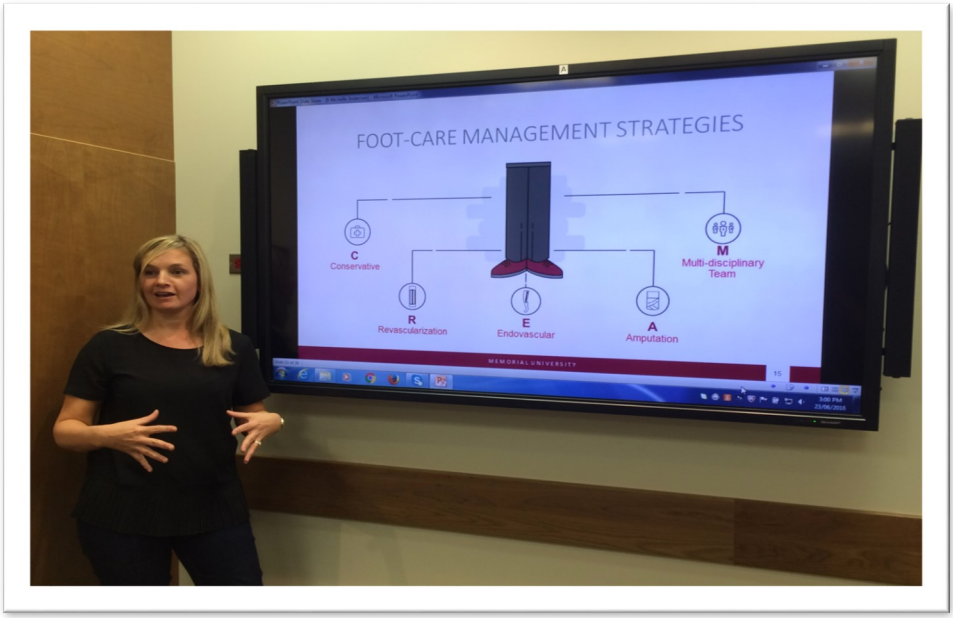
-Evaluating image quality and the volume of CT contrast used with a weight-based contrast injection protocol versus a one-dose-for-all protocol. By Jason Kinnin, Dr. Rick Bhatia, Dr. Scott Harris

-Medical Interventions and Diabetic Foot Ulcers: Knowledge and attitudes of family physicians in Newfoundland and Labrador. By Michelle Anderson, Dr. Ravi Gullipalli

-First and Second year Medical Students Knowledge and Perception of Radiology at One Canadian Medical School. By Jeffrey Macdonald, Dr. Angus Hartery

-A short-term analysis of clinical outcomes following drug-eluting stent placement in femoropopliteal disease. By Marc Earle, Dr. Ravi Gullipalli

Medical Student Marc Earle presenting his analysis of clinical outcomes following drug-eluting stent placement



Medical Student Michelle Anderson explaining her study on Medical Interventions and Diabetic Foot Ulcers.

The Residency Program Committee, including the Program Director and Research Director congratulate our medical students and mentors on this fine showing of a wide variety of ideas! We encourage more of our faculty to sign up for this rewarding experience!

The undergraduate research curriculum is a fairly new introduction to the medical school, starting with the class of 2019. The goal is to expose medical students to the process of research by having an organized curriculum. It is reliant on faculty member involvement as mentors.

It is structured in a step-by-step fashion for each phase of medical school:

Phase 1:
Literature review
Phase 2:
Research question, proposal and ethics submission
Phase 3:
Data acquisition and analysis
Phase 4: Participation in Research Day conference and

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UGME Radiology Research

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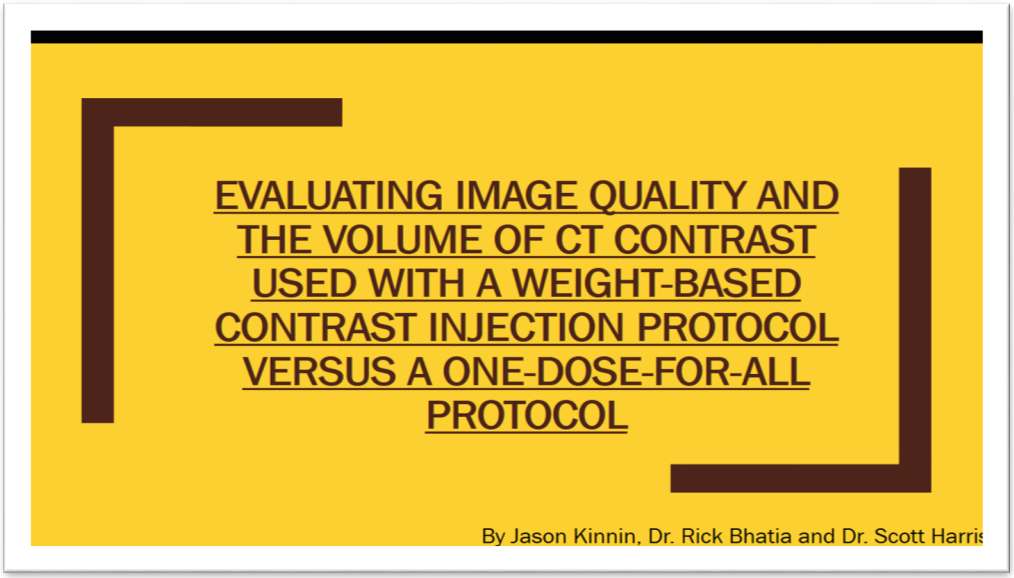
producing a manuscript.

The overall goal is to get the experience of the steps in research from asking a question, doing a literature review, collecting and analyzing data and producing a result through presentation and manuscript.

During All Phases, there is support from the medical school in the form of classroom and online sessions. For instance during Phase 1 there is specific education on how to do a literature review. During phase 2 there's education on how to write a research proposal.



Title Slide from Medical Student Jason Kinnins project on Evaluating image quality and the volume of CT contrast.

The main goal of having faculty involved is to facilitate the mentor role. Expectations of faculty include meeting with the medical student, help them form a research question, and discuss the implications of such, and then guide them through the research project over the phases of medical school. Faculty are involved with assessing the medical student. Essentially, during each phase there is a 'deliverable' – a concrete submission for the staff to evaluate. For Phase 1 that deliverable would be a literature review. Assessment is performed with a rubric emailed to the staff.

How to get involved? Normally a general email is sent to the faculty or to the discipline chair for recruitment. The undergraduate medical education office then keeps a list of all the faculty members willing to participate. For instance, for the upcoming class of 2020 there are 80 medical students. There are is currently a list of faculty members who have volunteered to be accessible (including our very own Dr. Flemming and Dr. Gullipalli). The faculty members are grouped and students submit a rank list of where they would like to do research, such as Radiology. Matching then occurs between student and mentor. This makes the process more streamlined for both students and faculty members.

Medical Student Jeffrey Macdonald presenting his survey on Medical Students Perceptions of Radiology

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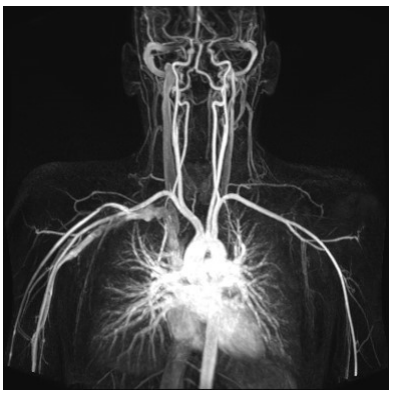
Radiology Research Director and the DIRAD group

The Discipline of Radiology welcomes Dr. Jeff Flemming. He has taken on the title of Research Director with a primary goal to update the research curriculum for our residents.

The first step was to gather a group of interested individuals whose goal will be to act as a resource for research within the department. This “DIRAD (Diagnostic Imaging and Academic Discovery)” group, is composed of the Research Director, Discipline Research Assistant, Program Director, Academic Head, the previous Research Director and Research Scientists in the department of Radiology. The role of this group is to engage with the research director in resident evaluation while assisting resident and staff researchers to access available resources that have come to light from the excellent work of previous residents. This assistance may include help with grant applications, statistics, Human Research Ethic Authority (HERA) submissions, library support, graphic design and poster design.

With the support of this group, a formal research document has been drafted for review by the residency program committee (RPC). This document addresses several issues, including the roles of the research director, research assistant, proposed research objectives, guidelines, and milestones to more clearly define the expectations we have for residents with respect to research. We will also be incorporating a didactic component to the research program, by introducing online teaching modules in the “Desire2Learn” system.

Our discipline has been, and continues to be, very productive in academic and scholarly discovery. However, there has been growing research interests, as well as a growing number of local resources for research, and this new program will hopefully make the task of research easier and more enjoyable. I greatly look forward to Dr. Flemmings’ future projects as Research Director. If you have any research related questions, I encourage to touch base with him or Michelle Simms, our new Research Assistant.



Program Administrator National Advisory Committee

Photo credit: HSIMS

I am excited and pleased to advise the discipline that I have been nominated and have accepted a position as a member of the newly formed Program Administrators National Advisory Committee. This Committee, consisting of a number of program administrators from across the country, will create a dialogue with the Royal College about the implications and impacts that the upcoming CBD changes will have across the system. The College has requested input from PA's to how best to facilitate the change. In this role, I am able to bring your concerns and any suggestions to the planning process. The Committee is currently drafting its first Terms of Reference, however; the membership is designed to include representation from all schools, variety of specialties and programs of all sizes. Although the Committee is in its initial stages, I believe it will become an important means of communication for Program Directors, PA's, Radiology staff - who every day demonstrate a vital role in our residency program, our residents and Post-graduate Medical Education office, with the appropriate individuals at the Royal College and those involved with the transition and ongoing evolution of CPD. I look forward to bringing you updates on our transition to a Competency Based Design and hope to hear from you as well, i.e., your thoughts on how our program can or alternatively, any concerns you may have as we begin to move into this exciting new method of residency training and medical education. There's lots to learn!! I look forward to sharing with you along the way.

Radiology Research Assistant

Photo credit: HSIMS

Hi everyone,

My name is Michelle Simms and I'm very excited to be the new Research Assistant in the Discipline of Radiology. I'm a proud graduate of Memorial University with a BSc in Biology and a MSc in Medicine (Immunology). Over my 20 year career I have been involved in diverse activities during my employment with Memorial University. At different times I have worked, on year long replacements, as an Instructional Assistant in Biology and more recently as a Medical Technologist with the Medical Education and Laboratory Support Services. However, the majority of my career has been in research as a research assistant. For many years I worked with the Discipline of Genetics, primarily with a large multisite project on the genetic and epidemiological factors affecting colon cancer, doing a variety of bench work and helping with the planning and analysis of parts of the research, and maintaining the biospecimen repository. In recent years as part of Clinical Epidemiology, I've been involved with a different project - the Canadian Longitudinal Study on Aging. Initially I helped with setup and implementation, especially of their laboratory space, but then I started my direct involvement with the volunteer participants as they came through the site. This involved conducting participant interviews and performing a variety of physical and cognitive testing. Radiology offers me new and diverse opportunities for research and learning, and I look forward to helping you with your research in any way I can!

My current work hours are Monday &Tuesday 9-5; Wednesday & Thursday 9-12:30
Meeting times outside of these may be possible to arrange with advance notice.
You may reach me at 777-2201 or email me at msimms@mun.ca. I look forward to hearing from you!

PGME Radiology Research

There has been some recent activity on the conference circuit for our faculty and residents.

Dr. Collingwood recently participated at the 2016 Canadian Interventional Radiology Association Annual Meeting.

Dr. Collingwood participated by:

-moderating for the Fellows and Residents Day occurring the day before the conference

-hosting a M & M Non Vascular Workshop

-hosting Fellows & Residents Film panel & Best cases session

Dr. Collingwood was also coauthor on a recent abstract presented at 2015 Canadian Surgery Forum and the Canadian Journal of Surgery Vol. 58 (4 Suppl 2) August 2015. *Impact of Portal Vein Embolization on Morbidity and Mortality of Major Liver Resection patients with Colorectal Metastasis at a Single Tertiary Care Center. P. Cyr MD, V. Falk MD, P. Collingwood MD, FRCPC, M. Hogan MD, FRCSC, A. Mathieson MD, FRCSC*

Dr. Andrew Dalton presented his research (supervised by Dr. Gullipalli) on '*Intrapopliteal Drug Eluting Balloons in Critical Limb Ischemia'*. Dr. Dalton gave an oral presentation at the eighth annual Primary Healthcare Partnership Forum (PriFor 2016). PriFor 2016 was held on June 29-30, 2016, at the Sheraton Hotel Newfoundland in St. John's, NL, Canada. This conference is presented in partnership with the Atlantic Practice Based Research Network, the Centre for Rural Health Studies, and The Primary Healthcare Research Unit Memorial University of Newfoundland. It highlights the research many varied medical professionals. This conference is not unfamiliar to The Discipline of Radiology. Dr. Stenbeck, orally presented her research (supervised by Dr. Hapgood) last June 2015 on '*Papillary Lesions of the Breast: What is the value of surgical excision?*'.

Dr. David McComiskey, (supervised by Dr. Sala) recently presented his research '*Six-Seven Year Follow-up in a Large Negative CT Colonography Screening Cohort*.' This was an oral presentation at the 27th European Society of Gastrointestinal And Abdominal Radiology Meeting June 14-16, 2016 in Prague, Czech Republic. Dr. McComiskey was awarded a plaque as one of the 2016 European Society Gastrointestinal Abdominal Radiology Top 20 Presenters. This conference highlights research and continuing education regarding aspects of Gastrointestinal Radiology and Abdominal Radiology.

Dr. McComiskey standing next to the listing of his presentation title during ESGAR 2016

Congratulations to all Faculty and Residents who continue to represent our Discipline on provincial, national and international levels. Our Discipline is fortunate to possess such talent.

UGME Radiology Research

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Key points for faculty mentors:

-Faculty members act as mentors for students and provide guidance for the development and completion of the research project.
-The research project is developed by the student with the help of the faculty mentor. The project should be uncomplicated and manageable.
-Faculty mentors are required to assess the student's deliverables. Assessment rubrics will be provided to the faculty mentors by UGME.
-Faculty mentors should be able to meet with the student as required.
-UGME appreciates that faculty may not want to wait 3 or 4 years for the project to be completed. There are instances where if the student is agreeable the project can be completed before Phase 4. However faculty should be aware that the students would not have received the necessary teaching to do so, and rubric assessments would still occur at the regularly scheduled timeline.

Curriculum Manager Dr. Jinelle Ramlackhansingh sends out calls to all faculty members and liaises with the discipline chairs in that regard as well. Interested faculty members can contact Jinelle at ugme.managercurric@med.mun.ca or Katrin Zipperlen, Academic Program Administrator at ugme.curriculum@med.mun.ca. They are currently still recruiting faculty mentors for the Class of 2020 starting in September.

Photo credit: HSIMS

Memorial University Discipline of Radiology Residents 2016 -2017

First Row: Daniel Duggan (PGY1), Jason Retallick (PGY1), Andrew Dalton (PGY2), Ning Su (PGY2), Melanie Stenback (PGY5)

Second Row: Anuj Dixit (PGY4), Hiliary Coffey (PGY3), Jillian Greene (PGY3), Nicole Myers (PGY5)

Third Row: Courtney Bull (PGY1), Ahmed Fagir (PGY4), Peter Giankopoulos (PGY4)

Fourth Row: Angus Hartery, Program Director

Missing from photo: David McComiskey (PGY2), Mary Beth Bissell (PGY3)