Committee on Medical Education Minutes – October 27, 2016

Running Items

1. The September 22nd Minutes were reviewed and approved.

2. Comments from Chair

   Dr. Stagno offered her congratulations to Dr. Patricia Thomas for being named the Amasa B Ford, MD Professor of Geriatric Medicine. There will be a reception on Tuesday, November 29 at 4:30 PM in the Wolstein Research Building Auditorium.

   Dr. Stagno thanked Dr. Rami Manochakian for his service to the committee. Dr. Manochakian has accepted a position at the Mayo Clinic in Florida.

3. Comments from Vice Dean for Medical Education

   Dr. Thomas reported that the Health Education Campus topping off ceremony will be October 28. The iron workers have finished and the building is on schedule.

   The Dean’s State of the School address from this morning will be posted online.

   Dr. Mimi Singh directed the AMA Accelerating Change in Medical Education Initiativesite visit, and they were very impressed by what they found.

   The LCME coming mock site visit will be January 30-31 and the actual site visit will be March 5-8. All documents will be submitted at the end of November.

   Minoo Darvish, Executive Director of Curricular Affairs, received the inaugural Staff Mentoring Award. Congratulations to Minoo on being nominated by her staff and receiving the award.

   Affiliation agreement—questions emerge; agreement will not affect clinical teaching in any respect; its all detailed in agreement; primarily affects the research enterprises

4. Comments from Student Representatives

   David Sweet reported the MSTP students were happy about PEAC feedback being taken seriously and they wondered if all committees have student representation. Dr. Wilson-Delfosse responded that they are working on adding students to various committees, but in some situations it is not appropriate for
students to participate. She also added that there are many ways students can provide feedback.

5. Report from Joint Clinical Oversight Group

JCOG is following up on pilots and observations. There are some scheduling issues affecting the electives calendar versus the core clinical calendar. There are 8 weeks of elective time in the 3rd year; but not all electives are in the 4th year. There needs to be some scheduling flexibility with electives.

Dr. Padrino also reported that we are transitioning to Canvas and Oasis as our new learning management platforms and we will be moving the 3rd year onto that platform.

6. Report from WR2 Curriculum Committee

The minutes from the September meeting were provided but are to remain confidential.

Trent Chiang made presentation on conflict of interest. The students are developing a pocket guide on dealing with drug representatives.

Last June there was a Bridge Week pilot. Evaluations and feedback have come in. Given the limited data and perspective, bridge week will not be required for the class of 2019. Dr. Wilson-Delfosse reported that it will run again as a pilot program. The initial pilot focused on procedures. With clinical immersion weeks being phased out, Block 8 will be incorporating more of the procedures from those weeks into its activities.

7. Report from CCLCM Steering Council

There was no meeting in September; the next meeting will be in November.

Dr. Hull reported that each curriculum committee will be adding student mistreatment as a standing agenda item.

8. Report from PEAC

Dr. Papp reported that PEAC is begin to review core clerkship rotations, beginning with Core 1, family and internal medicine. The clerkship directors are participating.

New Business

Informational:

1. Anatomy Presentation by Dr. Karin Herrmann and Dr. Susanne Wish-Baratz

Please see attached.

2. Resident Program Directors Survey and Recent Graduate Questionnaire
Dr. Klara Papp and Dr. Beth Bierer presented these reports. All are attached.

For CME Approval:

1. Grade Appeal Policy

After last year’s revision, Dr. Papp suggested that the policy needed slight fine tuning to streamline the process.

A motion to approve the policy was passed.

Attending

Dr. Susan Stagno, Chair
Dr. Beth Bierer, Guest Presenter
Dr. Joe Bokar
Dr. Michael Dell
Dr. Angelina Gangestad
Dr. Karen Herriman, Guest Presenter
Dr. Alan Hull
Dr. Bud Isaacson
Dr. Jeremy Lipman
Dr. Charles Lopresti
Dr. Megan MacNamara
Dr. Rami Manochakian
Dr. Susan Padrino
Dr. Klara Papp
Dr. Robert Petersen
Dr. Mimi Singh
Dr. Kent Smith
Dr. Pat Thomas
Dr. Amy Wilson-Delfosse
Dr. Susanne Wish-Baratz, Guest Presenter

Dr. Wenquan Zou

David Sweet, MSTP Representative

Sui Yan Scott, Registrar

Bart Jarmusch, Recording Secretary
Gross Anatomy & Radiology (GAR) after the Move to the HEC
The Plan
2 week Dissection Bootcamp followed by new GAR curriculum
Overview

• There will be no dissection in the HEC
• The current plan is for there to be a 2-week dissection boot camp between Blocks 1 and 2
• The dissections will take place in the current SOM building
  • The administration says that the current labs will be renovated

Please note, the plan is to realign with the curriculum in the new building
Current Plan

• Class divided in half / a.m. & p.m. groups
• 4 students / cadaver will dissect
  – ONE limb (either upper or lower)
  – ONE body cavity (either thorax or abdomen)
• Students will present the region they dissected to their peers who dissected the other region (and vice versa).
• There will be 24 bodies and approximately 200 students
• The bodies will remain as resource for the year at the current SOM
Issues that will need to be addressed:

1. Faculty responsibilities
2. Assessment
Learning Objectives will Include:

• Employ haptic perceptions for recognizing and identifying anatomical structures
• Examine anatomical relationships & variation
• Employ anatomical concepts, language
• Experience “Rite of Passage”
• Manage exposure to death for some, demystify the human body and death
What about students who are interested in surgical specialties and want a full dissection course?

Pass / Fail option for Graduate Anatomy Course
GAR in the HEC -
A Multimodality Curriculum

The class will be divided in 2; when it is taught, GAR will be held in identical sessions on Tuesday and Thursday mornings.

<table>
<thead>
<tr>
<th>EMA</th>
<th>REPRO</th>
<th>URINARY</th>
<th>ABDOMEN</th>
<th>THORAX</th>
<th>LIMBS &amp; BACK</th>
<th>HEAD &amp; NECK (NEUROANATOMY)</th>
</tr>
</thead>
</table>

**BLOCK 7**

GAR
Gross Anatomy & Radiology in the HEC: a Multimodality Curriculum

EACH SESSION Will be Divided into Thirds
• Students will rotate through three 40 minute sessions:

1. VIRTUAL DISSECTION
   • Microsoft HoloLens

2. APPLIED LIVING ANATOMY
   • Surface Anatomy
   • Physical Examination
   • Ultrasound

3. IMAGING ANATOMY
   • Radiology
Anatomy in a multimodality curriculum

• **Case: Breast Cancer:**
  – **Virtual:** demonstrate elements that cannot be shown on a cadaver (such as lymphatic drainage); create the “big picture”
  – **Applied:** learn how to examine a breast and lymphatics
  – **Imaging:** understand the diagnostic imaging tools such as mammography and ultrasound
We are in the process of creating a holographic anatomy curriculum for medical students using the HoloLens. In September, it was successfully beta tested on a group of approximately 40 students.
Imaging Anatomy - Radiology

- Fluoroscopy
- Digital Radiography X-ray
- Magnetic resonance Imaging MRI
- Computed Tomography CT
- Digital Subtraction Angiography
- Ultrasound
Imaging Anatomy - Radiology

- Fluoroscopy
- Digital Radiography
- X-ray
- Computed Tomography (CT)
- Magnetic resonance Imaging (MRI)
- Digital Subtraction Angiography (DSA)
- Ultrasound
- Practice
Dual-Monitor Radiology Workstation

Use of DICOM viewer to interactively review images and follow anatomic structures through cross sectional data.

Radiology-Anatomy Library

Typical Reading Room Environment

Proposal has been submitted 10/2015 for IT equipment to pilot the curriculum from Gross Anatomy to Digital Anatomy and Radiology
ULTRASOUND
- is NOT (only) RADIOLOGY!!!!!
Medical specialties using US

- Emergency Medicine
- Cardiology
- Gastroenterology
- Rheumatology
- Obstetrics and Gynecology
- Pediatrics
- Surgery
- Vascular surgery
- Transplant surgery
- Endocrinology
- Family Medicine
- Podiatry
- Nephrology and Dialysis
- Womens’ Health, Breast
- Neurology
- Neurosurgery
- Anesthesia
- Ophthalmology
- Dermatology
- Orthopedics/Musculoskeletal....

- A TOTAL of 24 specialties in medicine
Ultrasound in Anatomy...?

Why bother.....?
Why do we NOT teach it?

Barriers to Ultrasound integration

<table>
<thead>
<tr>
<th>Item*</th>
<th>Rasch Logits†</th>
<th>Standard Error</th>
<th>Rank</th>
<th>Response Frequency No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of space in current curriculum</td>
<td>+0.49</td>
<td>0.11</td>
<td>1</td>
<td>17 (25%) 19 (28%) 18 (26%) 12 (17%) 3 (4%)</td>
</tr>
<tr>
<td>Lack of financial support</td>
<td>+0.42</td>
<td>0.11</td>
<td>2</td>
<td>15 (22%) 24 (35) 10 (14%) 15 (22%) 5 (7%)</td>
</tr>
<tr>
<td>Lack of ultrasound equipment</td>
<td>+0.18</td>
<td>0.10</td>
<td>3</td>
<td>15 (22%) 14 (20%) 14 (20%) 16 (23%) 10 (14%)</td>
</tr>
<tr>
<td>Lack of trained faculty</td>
<td>-0.09</td>
<td>0.10</td>
<td>4</td>
<td>9 (13%) 13 (19%) 17 (25%) 12 (17%) 18 (26%)</td>
</tr>
<tr>
<td>Lack of student interest</td>
<td>-1.00</td>
<td>0.14</td>
<td>5</td>
<td>1 (1%) 4 (6%) 9 (13%) 18 (26%) 37 (54%)</td>
</tr>
</tbody>
</table>

*Items are listed in order of most to least significant barriers.
†Fit statistics were all within the acceptable range of -2.0 to +2.0.

Bahner D. et al.

NOW WE HAVE THE CHANCE!
US in Medical Schools 2012

The State of Ultrasound Education in U.S. Medical Schools: Results of a National Survey
Bahner, David P. MD, RDMS; Goldman, Ellen EdD; Way, David MEd; Royall, Nelson A. MD; Liu, Yiju Teresa MD

Abstract

Purpose: To determine the state of ultrasound education in U.S. medical schools and assess curricular administrators' opinions on its integration in undergraduate medical education (UME).

Method: In 2012, curricular administrators at 134 U.S. MD-granting medical schools were surveyed concerning the nature of ultrasound education in medical school. The questionnaire sought ultrasound education program characteristics, structures, and objectives. It also sought respondents' opinions on the role of ultrasound education in UME and barriers to its integration. Frequency and distribution analyses were conducted for survey responses; Rasch analysis was performed for barrier responses.

Results: Responses were received from 82 (61.2%) medical schools; these institutions were representative of the U.S. medical school population. Fifty-one respondents (62.2%) reported ultrasound training was integrated into their UME curriculum. Ultrasound was most commonly taught in the third year (38/82; 46.3%), and the purpose of training varied by curricular year. There was agreement that ultrasound should be part of the UME curriculum (56/71; 78.9%), but few respondents reported it was a priority at their institution (13/70; 18.6%). Respondents perceived lack of space in the curriculum (logit = +0.49; standard error [SE] = 0.11) and lack of financial support (logit = +0.42; SE = 0.11) as the most significant barriers to integration.

Conclusions: Despite a general consensus that ultrasound is an important skill to teach in medical school, the integration of ultrasound education in U.S. schools is highly variable. This study indicates a need for national standards to guide the integration of ultrasound education into U.S. medical school curricula.
Medical Schools with US

• NATIONALLY
  – University of South Carolina iUSC (2003)
  – University of California Irvine
  – University of California Los Angeles UCLA
  – Mount Sinai School of Medicine
  – New York University
  – University of Pennsylvania
  – University of Texas, San Antonio
  – University of Colorado
  – Rush University

• REGIONALLY:
  – Ohio State University
  – Wayne State University
  – University of Pittsburg

• INTERNATIONALLY:
  – McGill University Montreal, Canada
  – University of Melbourne, Australia
  – University of Hannover, Germany (1996)
  – University of Muenster

• .....
Why US in Anatomy?

.....because there is scientific evidence that US:

• ...enhances students’ understanding of anatomy
• ...improves students’ understanding of physiology
• ...improves students’ skills in living anatomy
• ...enhances students’ interest, motivation and engagement
• ...improves understanding of diagnostic value and limitations of US: prepares for the clinical future
• ...increases interest in Radiology
• ...represents a distinguishing factor in the competition for residencies and medical schools
• ...
• ...is innovative and will become the future
Evidence?

How much is out there?

How much is out there?

# Publications Per Year

Areas of Publication

D. Bahner OSU
Introduction of ultrasound into gross anatomy curriculum: perceptions of medical students.

Brown B¹, Adhikari S, Marx J, Lander L, Todd GL.

Abstract

BACKGROUND: The exposure to ultrasound technology during medical school education is highly variable across institutions.

OBJECTIVES: The objectives of this study were to assess medical students’ perceptions of ultrasound use to teach Gross Anatomy along with traditional teaching methods, and determine their ability to identify sonographic anatomy after focused didactic sessions.

METHODS: Prospective observational study. Phase I of the study included three focused ultrasound didactic sessions integrated into Gross Anatomy curriculum. During Phase II, first-year medical students completed a questionnaire.

RESULTS: One hundred nine subjects participated in this study; 96% (95% confidence interval [CI] 92-99%) agreed that ultrasound-based teaching increased students’ knowledge of anatomy acquired through traditional teaching methods. Ninety-two percent (95% CI 87-97%) indicated that ultrasound-based teaching increases confidence to perform invasive procedures in the future. Ninety-one percent (95% CI 85-96%) believed that it is feasible to integrate ultrasound into the current Anatomy curriculum. Ninety-eight percent (95% CI 95-100%) of medical students accurately identified vascular structures on ultrasound images of normal anatomy of the neck. On a scale of 1 to 10, the average confidence level reported in interpreting the images was 7.4 (95% CI 7.1-7.7). Overall, 94% (95% CI 91-99%) accurately answered questions about ultrasound fundamentals and sonographic anatomy.

CONCLUSIONS: The majority of medical students believed that it is feasible and beneficial to use ultrasound in conjunction with traditional teaching methods to teach Gross Anatomy. Medical students were very accurate in identifying sonographic vascular anatomy of the neck after brief didactic sessions.
Ultrasound-based teaching of cardiac anatomy and physiology to undergraduate medical students.


Abstract

BACKGROUND: Ultrasonography is a non-invasive imaging modality that offers the opportunity to teach living cardiac anatomy and physiology.

AIMS: The objectives of this study were to assess the feasibility of integrating an ultrasound-based course into the conventional undergraduate medical teaching programme and to analyse student and teacher feedback.

METHODS: An ultrasound-based teaching course was implemented and proposed to all second-year medical students (n=348) at the end of the academic year, after all the conventional modules at our faculty. After a brief theoretical and practical demonstration, students were allowed to take the probe and use the ultrasound machine. Students and teachers were asked to complete a survey and were given the opportunity to provide open feedback.

RESULTS: Two months were required to implement the entire module; 330 (95%) students (divided into 39 groups) and 37 teachers participated in the course. Student feedback was very positive: 98% of students agreed that the course was useful; 85% and 74% considered that their understanding of cardiac anatomy and physiology, respectively, was improved. The majority of the teachers (97%) felt that the students were interested, 81% agreed that the course was appropriate for second-year medical students and 84% were willing to participate to future sessions.

CONCLUSIONS: Cardiac anatomy and physiology teaching using ultrasound is feasible for undergraduate medical students and enhances their motivation to improve their knowledge. Student and teacher feedback on the course was very positive.
US and living anatomy

Undergraduate student perceptions of the use of ultrasonography in the study of "living anatomy".

Ivanusic J1, Cowie B, Barrington M.

Author information

Abstract

Ultrasonography is a noninvasive imaging modality, and modern ultrasound machines are portable, inexpensive (relative to other imaging modalities), and user friendly. The aim of this study was to explore student perceptions of the use of ultrasound to teach "living anatomy". A module utilizing transthoracic echocardiography was developed and presented to undergraduate medical, science, and dental students at a time they were learning cardiac anatomy as part of their curriculum. Relevant cardiac anatomy was explored on a student volunteer and images were projected in real-time to all students via an AV projection system. Students were asked to complete a questionnaire about the learning experience and were given the opportunity to provide open feedback. The students' evaluations of this learning experience were very positive. They agreed or strongly agreed that it was an effective way to teach anatomy (90% medical; 77% dental; 100% science) and that it was incorporated in a way that promoted reinforcement of the lecture material (83% medical; 76% dental; 100% science). They agreed or strongly agreed with statements that the experience was innovative (93% medical; 92% dental; 100% science) and stimulated interest in the subject matter (86% medical; 75% dental; 96% science), and that they would like to see more modules, exploring other anatomical sites, incorporated into the curricula (83% medical; 72% dental; 100% science). We believe that ultrasound could be a useful tool, in conjunction with traditional teaching methods, to reinforce the learning of anatomy of a variety of different undergraduate student groups.

- Effective way to teach anatomy
- Reinforced the lecture material
- Experience is innovative
- Stimulated interest
- Want to see more....
Peer teaching?

Training peer instructors for a combined ultrasound/physical exam curriculum.

Ahn JS¹, French AJ, Thiessen ME, Kendall JL.

Author information
¹a Division of Emergency Medicine, Schulich School of Medicine & Dentistry, London, Ontario, Canada.

Abstract

BACKGROUND: The integration of bedside ultrasound into medical school curricula is limited by the availability of skilled faculty instructors. Peer mentors have been utilized successfully to teach clinical and procedural skills and may serve as a valuable resource for potential ultrasound instructors. We describe a method to train senior medical students as peer instructors for a combined ultrasound/physical exam curriculum and assessed junior medical students’ perceptions of peer instruction relative to faculty.

DESCRIPTION: The University of Colorado has incorporated ultrasound into ocular, abdominal, musculoskeletal, cardiac, vascular, and pulmonary physical exam instruction for 1st-year (n=155) and 2nd-year (n=155) medical students. Fourth-year medical students who completed a 2- or 4-week bedside ultrasound elective were recruited as peer instructors. Both peer and faculty instructors received similar session training and were assigned to random groups of junior medical students. Instructor evaluation scores completed by students were collected after every session.

EVALUATION: Twenty students and 29 faculty served as instructors for the curriculum. Comparisons of evaluation scores between faculty and student teachers were equivalent (α>.05) in 5 out of 6 sessions. In addition, students who taught more than 1 session showed improvement in their instructor scores and had higher average scores than students who taught only 1 session. Student instructors who completed the 4-week elective had higher average scores than students who completed the 2-week elective.

CONCLUSIONS: Students' perception of peer instructors’ teaching competency was equivalent to faculty instructors for the majority of sessions. Senior students who have completed an elective ultrasound rotation may serve as a useful resource for circumstances where the availability of skilled instructors is limited. However, further research is required to evaluate their effectiveness.
A trend in the nation

Integration of Ultrasound in Undergraduate Medical Education at the California Medical Schools: A Discussion of Common Challenges and Strategies From the UMeCali Experience.

Chiem AT¹, Soucy Z², Dinh VA², Chilstrom M², Gharahbaghian L², Shah V², Medak A², Nagdev A², Jang T², Stark E², Hussain A², Lobo V², Pera A², Fox JC².

Author information

Abstract
Since the first medical student ultrasound electives became available more than a decade ago, ultrasound in undergraduate medical education has gained increasing popularity. More than a dozen medical schools have fully integrated ultrasound education in their curricula, with several dozen more institutions planning to follow suit. Starting in June 2012, a working group of emergency ultrasound faculty at the California medical schools began to meet to discuss barriers as well as innovative approaches to implementing ultrasound education in undergraduate medical education. It became clear that an ongoing collaborative could be formed to discuss barriers, exchange ideas, and lend support for this initiative. The group, termed Ultrasound in Medical Education California (UMeCali), was formed with 2 main goals: to exchange ideas and resources in facilitating ultrasound education and to develop a white paper to discuss our experiences. Five common themes integral to successful ultrasound education in undergraduate medical education are discussed in this article: (1) initiating an ultrasound education program; (2) the role of medical student involvement; (3) integration of ultrasound in the preclinical years; (4) developing longitudinal ultrasound education; and (5) addressing competency.

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KEYWORDS: curriculum development; medical student; ultrasound education
USME in 2016


Medical Student Core Clinical Ultrasound Milestones: A Consensus Among Directors in the United States.
Dinh VA1, Lakoff D2, Hess J2, Bahner DP2, Hoppmann R2, Blaivas M2, Pellerito JS2, Abuhamad A2, Khandelwal S2.

Author information

Abstract
OBJECTIVES: Many medical schools are implementing point-of-care ultrasound in their curricula to help augment teaching of the physical examination, anatomy, and ultimately clinical management. However, point-of-care ultrasound milestones for medical students remain unknown. The purpose of this study was to formulate a consensus on core medical student clinical point-of-care ultrasound milestones across allopathic and osteopathic medical schools in the United States. Directors who are leading the integration of ultrasound in medical education (USMED) at their respective institutions were surveyed.

METHODS: An initial list of 205 potential clinical ultrasound milestones was developed through a literature review. An expert panel consisting of 34 USMED directors across the United States was used to produce consensus on clinical ultrasound milestones through 2 rounds of a modified Delphi technique, an established anonymous process to obtain consensus through multiple rounds of quantitative questionnaires.

RESULTS: There was a 100% response rate from the 34 USMED directors in both rounds 1 and 2 of the modified Delphi protocol. After the first round, 2 milestones were revised to improve clarity, and 9 were added on the basis of comments from the USMED directors, resulting in 214 milestones forwarded to round 2. After the second round, only 90 milestones were found to have a high level of agreement and were included in the final medical student core clinical ultrasound milestones.

CONCLUSIONS: This study established 90 core clinical milestones that all graduating medical students should obtain before graduation, based on consensus from 34 USMED directors. These core milestones can serve as a guide for curriculum deans who are initiating ultrasound curricula at their institutions. The exact method of implementation and competency assessment needs further investigation.

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European Federation of Societies for Ultrasound in Medicine and Biology 2016

EFSUMB statement on medical student education in ultrasound [short version].


Author information

Abstract

The European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB) recommends that ultrasound should be used systematically as an easy accessible and instructive educational tool in the curriculum of modern medical schools. Medical students should acquire theoretical knowledge of the modality and hands-on training should be implemented and adhere to evidence-based principles. In this paper we summarise EFSUMB policy statements on medical student education in ultrasound.

Who wants to believe in international trends....
Virtual Anatomy and Applied Anatomy

Virtual Anatomy (HoloLens)

Imaging Anatomy (Radiology)

Applied Living Anatomy

Ultrasound
US in anatomy at CASE - a vision
Applied Living Anatomy and Ultrasound

• Ultrasound to complement physical diagnosis and anatomy, not to diagnose pathology
  – Educational tool to better understand
  – Be knowledgeable, not expert!
• Ultrasound teaching with hands-on experience for students under guidance and supervision
• Students’ groups of four – 8 tables /X2
• One instructor – one trained standardized patient TSP/model
• Instructor: experienced MD, sonographer, advanced trained medical students, peers
• Portable / hand-held ultrasound devices
• Catalogue following the topics in anatomy
  – Anatomy - Surface anatomy – Sono-anatomy
Inspired by University of South Carolina

- 1 portable Ultrasound Machine
- 1 monitor
- 1 instructor
- 1 Trained Standardized Patient (TSP)
- 4 Students
- 1 Catalogue of objectives for hands-on examination
Example: cardiac cycle

https://web.stanford.edu/group/ccm_echocardio/wikiupload/videos/Normal_echo_PSL.ogv
What do I need to teach the student?
- Small footprint probe
- Where to put it on the body: left parasternal 3. intercostal space
- How to orient the probe: multi-chamber view
Renal percussion

Courtesy Robert Jones, Metrohealth
# Applied Ultrasound

example of a potential curriculum

<table>
<thead>
<tr>
<th>EMA</th>
<th>BODY WALL</th>
<th>ABDOMEN</th>
<th>URINARY REPRO</th>
<th>LIMBS &amp; BACK</th>
<th>HEAD &amp; NECK (NEUROANATOMY)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>THORAX</td>
<td></td>
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<tr>
<td>Introduction</td>
<td>CHEST</td>
<td>ABDOMEN</td>
<td>GENITOURIN</td>
<td>MUSCULOSK</td>
<td>NEURO</td>
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<tr>
<td>Basic Physics</td>
<td>Cardiac chamber views</td>
<td>Liver and gallbladder</td>
<td>Kidneys and urinary bladder</td>
<td>Muscles and ligaments</td>
<td>Carotid US</td>
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<tr>
<td>Knobology</td>
<td>Cardiac blood flow, color Doppler</td>
<td>Spleen, Pancreas</td>
<td>Female pelvis</td>
<td>Shoulder</td>
<td>Thyroid</td>
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<tr>
<td>Transducers and orientation</td>
<td>Lung and pleura</td>
<td>Portal/hepatic veins, SMA</td>
<td>Male pelvis and testicles</td>
<td>Wrist</td>
<td></td>
</tr>
<tr>
<td>Image interpretation</td>
<td>Superficial cutaneous layers</td>
<td>Aorta and IVC</td>
<td>Renal arteries and veins</td>
<td>knee</td>
<td></td>
</tr>
</tbody>
</table>
Example of Objectives / Session

- Identify the liver in transverse and longitudinal view
- Measure the largest dimension of the liver
- Identify the portal vein and hepatic veins
- Identify the IVC and aorta in longitudinal view
- Demonstrate the Morrison pouch (free fluid)
- Demonstrate a longitudinal view of the gallbladder
- Demonstrate a transverse view of the gallbladder (subcostal approach)
- Demonstrate a Murphy sign
Basic US equipment

Ultrasound machines

Transducers

Accessories
A thousand and more choices...
Portable Ultrasound

Portable Ultrasound Console

Laptop-based

Pocket - hand-held
Portable hand-held Ultrasound

1. Download the app
   The robust Lumify app is available on compatible Android smart devices via the Google Play Store.

2. Connect the Lumify transducer
   Our innovation in portable ultrasound comes to your compatible device through a simple USB connection.

3. Start scanning
   Now you can quickly begin scanning with the quality of Philips imaging from your compatible smart device.

$199/months/probe
Summary

• US in a preclinical curriculum is feasible!
• US in a preclinical curriculum is helpful!
• US in anatomy helps the understanding of anatomy, physiology and living anatomy
• Now is the time and chance to innovate, complement and align our curriculum content in an interdisciplinary and logic fashion

The strongest power is the belief:
Yes, we can! Yes, we want!
Be part of the Future of Medical Education....!...THE STETHOSCOPE OF THE FUTURE
TRANSFORM

VAR

THANK YOU!
2016 RESIDENCY PROGRAM DIRECTOR SURVEY RESULTS

for graduates in the University Program

In all, 130 Residency Program Directors were surveyed for 163 University Program (UP) graduates in the Class of 2015. We sent one initial email on March 18, 2016, with 2 follow-up reminders and 1 USPS mailing to non-respondents. 93 respondents evaluated 116 residents, 71% response rate.

<table>
<thead>
<tr>
<th>Competencies: Please rate the performance of this Case Western Reserve University recent graduate to your expectations for interns in your program.</th>
<th>Mean (SD)</th>
<th>1 = Below</th>
<th>2 = At</th>
<th>3 = Above</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1) Patient Care:</strong> Demonstrates proficiency in clinical skills and clinical reasoning; engages in patient-centered care that is appropriate, compassionate and collaborative in promoting health and treating disease.</td>
<td>2.3 (0.6)</td>
<td>8 (7)</td>
<td>60 (53)</td>
<td>46 (40)</td>
</tr>
<tr>
<td><strong>2) Knowledge for Practice:</strong> Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care.</td>
<td>2.4 (0.6)</td>
<td>5 (5)</td>
<td>59 (53)</td>
<td>48 (43)</td>
</tr>
<tr>
<td><strong>3) Reflective Practice (PBLI):</strong> Demonstrates habits of ongoing reflection and analysis to both identify learning needs and continuously improve performance.</td>
<td>2.4 (0.6)</td>
<td>5 (5)</td>
<td>52 (47)</td>
<td>54 (49)</td>
</tr>
<tr>
<td><strong>4) Interpersonal and Communication Skills:</strong> Demonstrates effective listening, written and oral communication skills with patients, peers, faculty and other health professionals in the classroom, research and patient care settings.</td>
<td>2.5 (0.6)</td>
<td>5 (4)</td>
<td>45 (40)</td>
<td>63 (56)</td>
</tr>
<tr>
<td><strong>5) Professionalism:</strong> Demonstrates commitment to high standards of ethical, respectful, compassionate, reliable, and responsible behaviors in all settings, and recognizes and addresses lapses in behavior.</td>
<td>2.6 (0.5)</td>
<td>3 (3)</td>
<td>38 (34)</td>
<td>72 (64)</td>
</tr>
<tr>
<td><strong>6) Systems-based Practice:</strong> Demonstrates an understanding of and responsiveness to health care systems, as well as the ability to call effectively on resources to provide high value care.</td>
<td>2.3 (0.5)</td>
<td>4 (4)</td>
<td>62 (60)</td>
<td>37 (36)</td>
</tr>
<tr>
<td><strong>7) Teamwork &amp; Interprofessional Collaboration:</strong> Demonstrates knowledge and skills to promote effective teamwork and collaboration with health care professionals across a variety of settings.</td>
<td>2.5 (0.6)</td>
<td>4 (4)</td>
<td>47 (42)</td>
<td>62 (55)</td>
</tr>
<tr>
<td><strong>8) Research &amp; Scholarship:</strong> Demonstrates knowledge and skills required to interpret, critically evaluate, and conduct research.</td>
<td>2.4 (0.5)</td>
<td>1 (1)</td>
<td>48 (58)</td>
<td>34 (41)</td>
</tr>
</tbody>
</table>
9) **Personal & Professional Development**: Demonstrates the qualities required to sustain lifelong personal and professional growth. | 2.5 (0.6) | 6 (5) | 48 (43) | 57 (51) |

---

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>10) Do house officers in your program use portfolios to document their competence during residency?</td>
<td>Yes</td>
</tr>
<tr>
<td>11) Does your residency program have a research requirement?</td>
<td>61 (53)</td>
</tr>
<tr>
<td>12) Considering what you know now about this intern, would you have accepted him/her into your training program?</td>
<td>74 (64)</td>
</tr>
<tr>
<td>13) If your program selects chief residents, does this intern have &quot;chief resident&quot; potential?</td>
<td>107 (92)</td>
</tr>
<tr>
<td></td>
<td>47 (41)</td>
</tr>
</tbody>
</table>
In all, 163 graduates were surveyed in the Class of 2015. We sent one initial email on March 25, 2016 with 2 follow-up reminders and 1 USPS mailing to non-respondents. Total respondents =43, 26% response rate.

| Competencies: When compared to other interns in your program, how well prepared were you to fulfill your professional responsibilities in each of the following areas? | Frequencies N (%)* |
|---|---|---|---|---|
| | Mean (SD) | Poor/Fair N (%) | Average N (%) | Well/Very Well N (%) |
| 1) Knowledge for Practice: Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care. | 3.9 (0.9) | 4 (9) | 6 (14) | 33 (77) |
| 2) Patient Care: Demonstrates proficiency in clinical skills and clinical reasoning; engages in patient-centered care that is appropriate, compassionate and collaborative in promoting health and treating disease. | 4.3 (0.8) | 1 (2) | 5 (12) | 37 (86) |
| 3) Interpersonal and Communication Skills: Demonstrates effective listening, written and oral communication skills with patients, peers, faculty and other health care professionals in the classroom, research and patient care settings. | 4.6 (0.7) | 0 (0) | 4 (9) | 39 (91) |
| 4) Professionalism: Demonstrates commitment to high standards of ethical, respectful, compassionate, reliable and responsible behaviors in all settings, and recognizes and addresses lapses in behavior. | 4.7 (0.8) | 1 (2) | 2 (5) | 40 (93) |
| 5) Reflective Practice (PBLI): Demonstrates habits of ongoing reflection and analysis to both identify learning needs and continuously improve performance. | 4.1 (1.0) | 2 (5) | 7 (16) | 34 (79) |
| 6) Systems-based Practice: Demonstrates an understanding of and responsiveness to health care systems, as well as the ability to call effectively on resources to provide high value care. | 4.0 (1.0) | 2 (5) | 9 (21) | 32 (74) |
| 7) Personal and Professional Development: Demonstrates the qualities required to sustain lifelong personal and professional growth. | 4.2 (0.8) | 2 (5) | 2 (5) | 39 (91) |
| 8) Research and Scholarship: Demonstrates knowledge and skills to interpret, critically evaluate, and conduct research. | 4.0 (1.0) | 3 (7) | 9 (21) | 31 (72) |
| 9) Teamwork & Interprofessional Collaboration: Demonstrates knowledge and skills to promote effective teamwork and collaboration with health care professionals across a variety of settings. | 4.3 (0.8) | 1 (2) | 4 (9) | 38 (88) |
Overview
Each year, in a joint effort with the University Program at Case Western Reserve University (CWRU), we survey all program directors (April-July) who accepted a CWRU graduate into their residency programs.

Carol Chalkley at CWRU set up this questionnaire using CoursEval, a web-based evaluation program, for all program directors with students in the University and College programs. CCLCM followed up with non-respondents who did not have University Program graduates. CWRU sent out paper-based questionnaires to programs with University or University and College Program graduates (mandate from Dr. Armitage, previous chair of Committee on Medical Education at CWRU). All questionnaire data for College Program graduates is included in CCLCM's program evaluation data registry.

This report summarizes residency program directors’ feedback about the performance of CCLCM graduates (Classes of 2009-2015) at the completion of internship training.

Key Findings
- We received program director feedback about the performance of 163 of 216 CCLCM graduates in the Classes of 2009-2015, resulting in an overall response of 75%. Of these, responding program directors said they would still actively recruit 93% (152/163) of our graduates into PGY1 slots after spending one year with them.
- Program directors with chief residency slots rated the abilities of our graduates to serve as future chief residents. Of graduates in the Class of 2015, 13 (54%) had “chief resident potential”, 8 (33%) were rated as “too early to tell”, and 2 (8%) did not have chief resident potential.
- Aggregate performance data shows >50% of our graduates in the Classes of 2009-15 exceeded their program directors’ expectations in the competency domains of Professionalism, Patient Care, Interpersonal and Communication Skills, and Knowledge for Practice (Tables 1-2).
- Program directors would not have recruited 11 CCLCM graduates into their residency program; one of these students graduated in the Class of 2015. Table 3 lists the characteristics of graduates program directors regretted having recruited.
- To date, 53% (n = 87) of responding program directors said their trainees complete portfolios to document performance while 64% (n = 104) have a research requirement for their residents.
- A few program directors commented on our graduates’ abilities or components of the CCLCM program when responding to open-ended items on the questionnaire (Table 4).

Recommendations
- Continue to use both web- and paper-based methods to collect program director feedback.
- Continue to improve communication between the College and University Programs to ensure the correct program directors are contacted for feedback.
### Table 1: Program Directors’ Assessment of CCLCM Graduates after Internship Year

**Class of 2015**

(n = 26/31; 84% response)

<table>
<thead>
<tr>
<th></th>
<th>Below Expectations (n of graduates)</th>
<th>At Expectations (n of graduates)</th>
<th>Above Expectations (n of graduates)</th>
<th>Insufficient Evidence to Evaluate (n of graduates)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teamwork and Interprofessional Collaboration</strong></td>
<td>3 (1)</td>
<td>11 (3)</td>
<td>77 (20)</td>
<td>8 (2)</td>
</tr>
<tr>
<td>Demonstrates knowledge and skills to promote effective teamwork and collaboration with health care professionals across a variety of settings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient Care</strong></td>
<td>27 (7)</td>
<td>70 (18)</td>
<td>3 (1)</td>
<td></td>
</tr>
<tr>
<td>Demonstrates proficiency in clinical skills and clinical reasoning; engages in patient-centered care that is appropriate, compassionate and collaborative in promoting health and treating disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Professionalism</strong></td>
<td>8 (2)</td>
<td>19 (5)</td>
<td>70 (18)</td>
<td>3 (1)</td>
</tr>
<tr>
<td>Demonstrates commitment to high standards of ethical, respectful, compassionate, reliable, and responsible behaviors in all settings, and recognizes and addresses lapses in behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Personal and Professional Development</strong></td>
<td>3 (1)</td>
<td>15 (4)</td>
<td>70 (18)</td>
<td>11 (3)</td>
</tr>
<tr>
<td>Demonstrates the qualities required to sustain lifelong personal and professional growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reflective Practice</strong></td>
<td>8 (2)</td>
<td>11 (3)</td>
<td>70 (18)</td>
<td>11 (3)</td>
</tr>
<tr>
<td>Demonstrates habits of ongoing reflection and analysis to both identify learning needs and continuously improve performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge for Practice</strong></td>
<td>35 (9)</td>
<td>62 (25)</td>
<td>3 (1)</td>
<td></td>
</tr>
<tr>
<td>Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interpersonal and Communication Skills</strong></td>
<td>39 (10)</td>
<td>58 (15)</td>
<td>3 (1)</td>
<td></td>
</tr>
<tr>
<td>Demonstrates effective listening, written and oral communication skills with patients, peers, faculty and other health professionals in the classroom, research and patient care settings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Systems-based Practice</strong></td>
<td>35 (9)</td>
<td>54 (14)</td>
<td>11 (3)</td>
<td></td>
</tr>
<tr>
<td>Demonstrates an understanding of and responsiveness to health care systems, as well as the ability to call effectively on resources to provide high value care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Research and Scholarship</strong></td>
<td>31 (8)</td>
<td>39 (10)</td>
<td>30 (8)</td>
<td></td>
</tr>
<tr>
<td>Demonstrates knowledge and skills required to interpret, critically evaluate, and conduct research</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Not all percentages sum to 100% due to rounding.
### Table 2: Program Directors’ Assessment of CCLCM Graduates after Internship Year

**Classes of 2009 - 2015**

<table>
<thead>
<tr>
<th>CCLCM Graduates in Classes of 2009-15</th>
<th>Percent of Graduates (n of graduates)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Below Expectations</td>
</tr>
<tr>
<td><strong>Teamwork and Interprofessional Collaboration</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>Demonstrates knowledge and skills to promote effective teamwork and collaboration with health care professionals across a variety of settings</td>
<td>(1)</td>
</tr>
<tr>
<td><strong>Personal and Professional Development</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>Demonstrates the qualities required to sustain lifelong personal and professional growth</td>
<td>(1)</td>
</tr>
<tr>
<td><strong>Professionalism</strong></td>
<td>2</td>
</tr>
<tr>
<td>Demonstrates commitment to high standards of ethical, respectful, compassionate, reliable, and responsible behaviors in all settings, and recognizes and addresses lapses in behavior</td>
<td>(3)</td>
</tr>
<tr>
<td><strong>Patient Care</strong></td>
<td>4</td>
</tr>
<tr>
<td>Demonstrates proficiency in clinical skills and clinical reasoning; engages in patient-centered care that is appropriate, compassionate and collaborative in promoting health and treating disease</td>
<td>(6)</td>
</tr>
<tr>
<td><strong>Interpersonal and Communication Skills</strong></td>
<td>3</td>
</tr>
<tr>
<td>Demonstrates effective listening, written and oral communication skills with patients, peers, faculty and other health professionals in the classroom, research and patient care settings</td>
<td>(4)</td>
</tr>
<tr>
<td><strong>Knowledge for Practice</strong>&lt;sup&gt;3&lt;/sup&gt;</td>
<td>5</td>
</tr>
<tr>
<td>Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care</td>
<td>(8)</td>
</tr>
<tr>
<td><strong>Reflective Practice</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>Demonstrates habits of ongoing reflection and analysis to both identify learning needs and continuously improve performance.</td>
<td>(5)</td>
</tr>
<tr>
<td><strong>Systems-based Practice</strong></td>
<td>1</td>
</tr>
<tr>
<td>Demonstrates an understanding of and responsiveness to health care systems, as well as the ability to call effectively on resources to provide high value care</td>
<td>(2)</td>
</tr>
<tr>
<td><strong>Research and Scholarship</strong>&lt;sup&gt;4&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>Demonstrates knowledge and skills required to interpret, critically evaluate, and conduct research</td>
<td>(2)</td>
</tr>
</tbody>
</table>

<sup>1</sup>Represents a new competency included on the questionnaire.

<sup>2</sup>Combined with data previously labeled as Practice Based Learning and Improvement.

<sup>3</sup>Combined with data previously labeled as Medical Knowledge.

<sup>4</sup>Combined with data previously labeled as Research.
Cleveland Clinic Lerner College of Medicine
Summary of Feedback from CCLCM Graduates
Classes of 2009-2015

August 10, 2016

Overview
Each year the Office of Curricular Affairs at CCLCM uses a web-based questionnaire\(^1\) to collect feedback from CCLCM graduates about their preparation for internship, career interests, and scholarly work since medical school. Responding graduates are eligible to receive a $100 gift certificate. Additionally, graduates may receive a copy of aggregate results if they provide current contact information. This report summarizes the feedback and career interests of graduates in the Classes of 2009-2015 following completion of internship training.

Key Findings
- We received feedback from 161 of 216 CCLCM graduates in the Classes of 2009-2015, resulting in an overall response of 75%.
- Most graduates (n = 151, 93.7%) seemed satisfied with their residency training program in that they would recommend their residency program to future CCLCM graduates.
- Over 90% of responding graduates believe they received good (n = 53, 32.9%) to excellent (n = 99, 61.4%) preparation for internship. Graduates also indicated that they received good  (n = 36, 22.4%) to excellent (n = 121, 75.1%) preparation for competency-based assessment encountered during residency.
- The CCLCM and University programs adopted the same competencies in 2015. This change required new wording on this year’s questionnaire. Table 1 shows > 80% of 2015 graduates believed they were better prepared than other interns in the following competency domains: Reflective Practice, Professionalism, Research and Scholarship, Personal and Professional Development, and Interpersonal and Communication Skills.
- Eighteen of 161 graduates (11.1%) rated their medical knowledge preparation below that of other interns (Table 1).
- In terms of additional clinical training, 135 (83.8%) of responding graduates plan to pursue fellowship training. Table 2 shows that graduates were interested in a variety of fields, with Medical Oncology and Hematology remaining among the most popular (15 graduates said they intend to apply for this fellowship).
- Forty-three graduates (26.7%) intend to pursue more research training by obtaining a graduate degree, taking additional coursework, or engaging in more research activities (Table 3).
- The majority of our graduates entered residency training programs that had a research requirement (n = 99, 61.4%). Graduates reported fewer training programs (n = 41, 25.4%) that used portfolios to document trainee competence.
- Several graduates (n = 116, 72%) identified a mentor during residency year and described research projects (i.e., chapters, publications, posters, etc.) during internship.
- Finally, the majority of graduates remained in touch with their CCLCM classmates (n = 154, 95.6%) and faculty (n = 131, 81.4%) during internship, suggesting the desire to maintain positive relationships after medical school.

\(^1\) The questionnaire was approved by the Cleveland Clinic's IRB and is included in CCLCM's program evaluation data registry.
Table 1: Graduates’ Perceptions of their Preparation for Internship Training

<table>
<thead>
<tr>
<th>CCLCM Graduates in Class of 2015 (n = 25/31, 81% response)</th>
<th>Less Prepared than Other Interns</th>
<th>Just as Prepared as Other Interns</th>
<th>Better Prepared than Other Interns</th>
<th>Insufficient Evidence to Evaluate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Care</td>
<td>32%  (8)</td>
<td>68%  (17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrates proficiency in clinical skills and clinical reasoning; engages in patient-centered care that is appropriate, compassionate, and collaborative in promoting health and treating disease.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge for Practice</td>
<td>8%  (2)</td>
<td>52%  (13)</td>
<td>40%  (10)</td>
<td></td>
</tr>
<tr>
<td>Demonstrates knowledge of evolving biomedical, clinical, epidemiological, and social-behavioral sciences as well as the application of this knowledge to patient care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal and Professional Development</td>
<td>16%  (4)</td>
<td>84%  (21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrates the qualities to sustain lifelong personal and professional growth.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpersonal and Communication Skills</td>
<td>20%  (5)</td>
<td>80%  (20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrates effective listening, written and oral communication skills with patients, peers, faculty, and other health care professionals in the classroom, research, and patient care settings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionalism</td>
<td>12%  (3)</td>
<td>88%  (22)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrates commitment to high standards of ethical, respectful, compassionate, reliable, and responsible behavior in all settings, and recognizes and addresses lapses in behavior.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systems-based Practice</td>
<td>60%  (15)</td>
<td>40%  (10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrates understanding of and responsiveness to health care systems, as well as the ability to call effectively on resources to provide high value care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teamwork and Interprofessional Collaboration</td>
<td>28%  (7)</td>
<td>72%  (18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrates knowledge and skills to promote effective teamwork and collaboration with health care professionals across settings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research and Scholarship</td>
<td>16%  (4)</td>
<td>84%  (21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrates knowledge and skills required to interpret, critically evaluate, and conduct research.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective Practice</td>
<td>8%  (2)</td>
<td>92%  (23)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrates habits of ongoing reflection and analysis to both identify learning needs and continuously improve performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCLCM Graduates in Classes of 2009-14 (n = 136/185, 74% response)</td>
<td>Less Prepared than Other Interns</td>
<td>Just as Prepared as Other Interns</td>
<td>Better Prepared than Other Interns</td>
<td>Insufficient Evidence to Evaluate</td>
</tr>
<tr>
<td>Patient Care</td>
<td>1.5%  (2)</td>
<td>33.8%  (46)</td>
<td>63.2%  (86)</td>
<td>1.5%  (2)</td>
</tr>
<tr>
<td>Demonstrates compassionate and effective treatment of health problems and advocates for health promotion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>11.8%  (16)</td>
<td>55.9%  (76)</td>
<td>30.9%  (42)</td>
<td>1.5%  (2)</td>
</tr>
<tr>
<td>Possesses appropriate knowledge and applies to patient care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice-based Learning &amp; Improvement</td>
<td>29.4%  (40)</td>
<td>68.4%  (133)</td>
<td>2.2%  (2)</td>
<td></td>
</tr>
<tr>
<td>Investigates and evaluates his/her delivery of patient care in relation to scientific evidence for improvement purposes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpersonal and Communication Skills</td>
<td>.7%  (1)</td>
<td>19.1%  (26)</td>
<td>78.7%  (107)</td>
<td>1.5%  (2)</td>
</tr>
<tr>
<td>Demonstrates effective information exchange and teaming with patients, families, allied health, and colleagues.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionalism</td>
<td>.7%  (1)</td>
<td>28.7%  (39)</td>
<td>69.1%  (94)</td>
<td>1.5%  (2)</td>
</tr>
<tr>
<td>Demonstrates commitment to professional responsibilities, adherence to ethical principles, and sensitivity to cultural diversity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systems-based Practice</td>
<td>2.9%  (4)</td>
<td>58.8%  (80)</td>
<td>34.6%  (47)</td>
<td>3.7%  (5)</td>
</tr>
<tr>
<td>Demonstrates awareness of larger healthcare system and can effectively call on system resources to provide care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>8.8%  (12)</td>
<td>86.8%  (118)</td>
<td>4.4%  (6)</td>
<td></td>
</tr>
<tr>
<td>Demonstrates knowledge base, skills, and critical thinking to conceptualize and conduct research.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective Practice</td>
<td>14.0%  (19)</td>
<td>83.1%  (113)</td>
<td>2.9%  (4)</td>
<td></td>
</tr>
<tr>
<td>Possesses ability to identify performance gaps accurately and develops plans that result in improved performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prepared by S. Beth Bierer, PhD
Office of Curricular Affairs
Cleveland Clinic Lerner College of Medicine
Table 2: Graduates' Self-reports of Fellowship Interests and Research Training Intentions

<table>
<thead>
<tr>
<th>Fellowship Interests/Intentions</th>
<th>Advanced Research Training Intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medicine Subspecialty</strong></td>
<td><strong>Obtain Doctoral Degree</strong></td>
</tr>
<tr>
<td>Adolescent Medicine</td>
<td>• PhD in biostatistics</td>
</tr>
<tr>
<td>Allergy/Immunology (2)</td>
<td>• MPH and PhD</td>
</tr>
<tr>
<td>Cardiology (7)</td>
<td><strong>Obtain Masters Degree</strong></td>
</tr>
<tr>
<td>Critical Care</td>
<td>• I am planning on completing MBA course work at Wharton-University of Pennsylvania business school.</td>
</tr>
<tr>
<td>Endocrinology (4)</td>
<td>• Not sure. Maybe MBA.</td>
</tr>
<tr>
<td>Gastroenterology (2)</td>
<td>• I am the 6 year research resident, may get a masters.</td>
</tr>
<tr>
<td>Genetics</td>
<td>• Maybe an MPH (2)</td>
</tr>
<tr>
<td>Geriatrics</td>
<td>• Masters of science in clinical epidemiology</td>
</tr>
<tr>
<td>Hematology and Oncology (15)</td>
<td>• Masters in Clinical Investigation</td>
</tr>
<tr>
<td>Infectious Disease (3)</td>
<td><strong>Take Additional Coursework</strong></td>
</tr>
<tr>
<td>Medical Toxicology</td>
<td>• I am accepted into the GME Healthcare Administration Track through the hospital here, involving 2 years of coursework and research related to assessing resources and running healthcare resources</td>
</tr>
<tr>
<td>Movement Disorders</td>
<td>• I would like to take additional course in biostatistics</td>
</tr>
<tr>
<td>Neuro Critical care/Stroke Neurology</td>
<td>• I would like to take an extra course or two on large database analysis and use of advanced statistical packages, but this will depend on whether I decided to take time off for research during residency.</td>
</tr>
<tr>
<td>Primary Care Sports Medicine</td>
<td>• Leadership development; clinical research scholar program through a national organization</td>
</tr>
<tr>
<td>Procedural Dermatology</td>
<td>• Functional medicine and integrative medicine</td>
</tr>
<tr>
<td>Pulmonary and Critical Care</td>
<td>• …doing a capstone project in the area of AQ as well as taking courses to become a better clinical educator</td>
</tr>
<tr>
<td>Reproductive Endocrinology (2)</td>
<td><strong>Pursue Research Opportunities</strong></td>
</tr>
<tr>
<td>Research/Critical Care</td>
<td>• Already completed my MS while at CCLCM, so no plans for formal training in research. I am continuing to pursue research opportunities in residency.</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>• 2 years basic science research.</td>
</tr>
<tr>
<td><strong>Surgical Subspecialty</strong></td>
<td>• I hope to be able to conduct clinically-based research during residency once I get beyond intern year.</td>
</tr>
<tr>
<td>Bariatric Surgery</td>
<td>• Participating in ongoing research projects</td>
</tr>
<tr>
<td>Colorectal Surgery (2)</td>
<td>• I'm already in the 6 year ortho research track.</td>
</tr>
<tr>
<td>Hand Surgery (1)</td>
<td>• My ophtho program has a research requirement.</td>
</tr>
<tr>
<td>Head and Neck (2)</td>
<td>• Dedicated research time/year off, with possible masters</td>
</tr>
<tr>
<td>Hip and Knee Arthroplasty</td>
<td>• Plan to become involved in clinical research</td>
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<tr>
<td>Neurosurgery</td>
<td></td>
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<tr>
<td>Ophthalmology – Retina (3)</td>
<td></td>
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<tr>
<td>Orthopaedic Oncology</td>
<td></td>
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<tr>
<td>Orthopedic Sports Medicine (4)</td>
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<tr>
<td>Spine</td>
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<tr>
<td>Surgical Oncology (2)</td>
<td></td>
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<tr>
<td>Surgical Pathology (2)</td>
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<tr>
<td>Thoracic Surgery</td>
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<tr>
<td>Trauma</td>
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<tr>
<td>Urology Subspecialty (2)</td>
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<tr>
<td>Vascular Surgery</td>
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<tr>
<td><strong>Pediatric Subspecialty</strong></td>
<td></td>
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<tr>
<td>Child and Adolescent Psychiatry</td>
<td></td>
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<tr>
<td>Pediatric Anesthesiology</td>
<td></td>
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<tr>
<td>Pediatric Cardiology (2)</td>
<td></td>
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<tr>
<td>Pediatric Dermatology</td>
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<tr>
<td>Pediatric Hematology/Oncology (2)</td>
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<tr>
<td>Pediatric Neurology (2)</td>
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<tr>
<td>Pediatric Orthopedics</td>
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<tr>
<td>Pediatric Rheumatology</td>
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<tr>
<td><strong>Procedural Subspecialty</strong></td>
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<tr>
<td>Abdominal Imaging/Interventional Radiology</td>
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<tr>
<td>Cardiothoracic Anesthesiology</td>
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<tr>
<td>Cytology or Hematopathology</td>
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<tr>
<td>Interventional Radiology (3)</td>
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<tr>
<td>Musculoskeletal Radiology</td>
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<tr>
<td>Neuroradiology</td>
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</tbody>
</table>

Prepared by S. Beth Bierer, PhD
Office of Curricular Affairs
Cleveland Clinic Lerner College of Medicine
Grade Appeal Policy

1. A student wishing to appeal the grade received in a particular block, clerkship, or AI rotation should first attempt to resolve the matter by meeting with the block, clerkship, or AI rotation director(s). The request for a meeting should occur within 10 business days of release of the student’s grade to the student.

2. If the student has attempted resolution via the block, clerkship, or AI rotation director(s) without success and would like to pursue the matter further, the student may file a formal written appeal with the Co-Chairs of the Student Assessment Committee who will gather the facts and work to resolve the matter. The appeal must be made within 25 business days of released of the student’s grade to the student, and must follow the format below2. The Co-Chairs of the Student Assessment Committee (or designees) shall investigate the matter and make a decision to sustain the appeal or deny the appeal.

3. If the student is not satisfied with the resolution after following the above processes, then the student may appeal the decision. The student should forward the formal written appeal to the Vice Dean for Medical Education of the School of Medicine within 10 business days from the time the decision was conveyed to the student. The Vice Dean will consider the student’s arguments and may either dismiss the appeal or appoint an appeal panel.

Witnesses may be called at the discretion of the chair of the appeal panel. No legal counsel is permitted in the appeal hearing. However, a student may request that a faculty member or another student be present in the capacity of an advisor to provide the student advice but may not represent the student or directly question or cross-examine witnesses. A family member may not serve in this role. The appeal panel will make a recommendation to the Vice Dean. The Vice Dean will make a decision to sustain or deny the appeal.

4. If, after being notified of the decision, the student feels that the School of Medicine did not properly follow its established procedures, then an additional written appeal may be forwarded to the Dean of the School of Medicine within 10 business days and may only appeal on the basis of procedural issues. This step exhausts the student’s appeal options and the Dean’s determination is final.

1Note that this policy applies to University Program students since grades are not assigned to students in the College Program.

2 Submit a Word document to SOMgradeappeal@case.edu containing the following:
   Your name:
   The block, clerkship, or AI rotation:
   Site (if applicable):
   Date that you completed it:
   Your attempts to resolve the matter with the block, clerkship, or AI rotation director:
   Grade received:
   Grade you believe you earned:
   Justification and rationale for this assertion: