

Scientific Foundations Committee

October 3, 2014

7:30 – 9:00 am

Mayo B-646

Minutes

2014-2015 Scientific Foundations Committee Members		
MEMBER	COURSE/ROLE	ATTENDANCE
Steve Katz	Chair (INMD 6814 Physiology)	x
Sharon Allen	INMD 6803/6804/6805 ECM 1, ECM 2, ECM 3A	x
Richard Amado	INMD 6815 Human Behavior	
H. Brent Clark	INMD 6819 HHD – N & P	x
Eli Coleman	INMD 6816 Human Sexuality	
Greg Filice	MS 2 ID Thread	x
Glenn Giesler	INMD 6813 Neuroscience	
Bob Kempainen	INMD 6808 HHD – C & R	
Anne Minenko	INMD 6809 HHD – R, D & O3	
Kaz Nelson	INMD 6819 HHD – N & P	
Catherine Niewoehner	INMD 6810 HHD – R & E-R3	x
James Nixon	INMD 6803/6805/6806/6807 ECM 1, ECM 3A/B/C	
Jan Norrander	INMD 6801 Human Structure and Function	x
Deborah Powell	INMD 6817 Principles of Pathology, MS2 Pathology Thread	
Michel Sanders	INMD 6802 Science of Medical Practice	x
David Satin	INMD 6803/6804/6805/6806/6807 ECM 1, ECM 2, ECM 3	
Lisa Schimmenti	INMD 6802 Science of Medical Practice	
Peter Southern	INMD 6812 Microbiology	x
Heather Thompson Buom	INMD 6811 HHD – GI & Heme	x
Doug Wangenstein	INMD 6814 Physiology	
Tony Weinhaus	INMD 6801 Human Structure and Function	x
Kevin Wickman	INMD 6818 Principles of Pharmacology	
Mary Ramey	MS2 Lab Med/Path Coordinator	
Kevin Kay	MS2 Student Representative	
Nicole Cairns	MS1 Student Representative	x
<i>Mark Rosenberg</i>	<i>Vice Dean for Medical Education</i>	
<i>Kathy Watson</i>	<i>Senior Associate Dean for UME</i>	
<i>Jeffrey Chipman</i>	<i>Assistant Dean for Scientific Foundations</i>	x
<i>Majka Woods</i>	<i>Assistant Dean for ACE</i>	x
<i>Anne Pereira</i>	<i>Assistant Dean for Clinical Education</i>	
<i>Marshall Hertz</i>	<i>Faculty Advisor</i>	
<i>Brad Clarke</i>	<i>ACE Curriculum Specialist</i>	
<i>Leslie Anderson</i>	<i>Chief of Staff, Medical Education</i>	
<i>Scott Slattery</i>	<i>Director of Learner Development</i>	x
<i>TBA</i>	<i>Medical School Registrar</i>	
<i>Brian Woods</i>	<i>Lead Course Manager</i>	x

Guests: Tarissa Lai, Sam Kozloff, Miriam Smetak, Chelsey Jernberg

The meeting was called to order at 7:34am by Steve Katz.

Minutes

Draft minutes from the September 5 meeting were reviewed. It was moved and seconded to approve the September minutes as submitted. The motion passed unanimously.

Student Issues/Concerns/Questions

Knowledge Coop & MedWiki - Sam Kozloff, Tarissa Lai, Miriam Smetak (MS2 students)

Slides attached. Please reference for details of the presentation.

Knowledge Coop is a registered UMN Student Organization. They work to develop collaborative & comprehensive resources for the Medical student body and develop deep & long-standing partnerships with faculty. <http://sua.umn.edu/groups/directory/group/3220/>

Best practices get passed on from class to class, and learning resources are consolidated for studying. Currently, about 40% of the student body uses the MedWiki to supplement their study, especially MS2s. The MedWiki is set up like Wikipedia and is readily searchable with text, diagrams, quizzes. It can also be edited by students. There are links to Anki cards, if available.

MedWiki is NOT: a note-taking service. Materials are contributed voluntarily. It's an active learning experience & students learn by participating.

Benefits of MedWiki

- It's a trusted resource, available to everyone. Notes are approved (ideally) by the faculty in a collaborative way.
- Faculty gets feedback. Helps create educational supplements tailored to the students needs/requests.
- Can be used as a marketing tool by the Med School. It's a comprehensive resource for at-risk students.

MedWiki is a collaboration between med students, faculty & Student Council. Students want to grow this into an "Official" resource, with the collaboration of faculty, and to make it sustainable through student council representation.

The MedWiki is in the voice of the students, for the students. Current faculty involvement include Dr Powell (ANKI collective flashcards), Dr Gutierrez (Embryology notes-students meet w/her for note approval before posting), Dr Weinhaus.

Long-Term Vision

- Increased faculty participation, including providing material or proofing notes
- Comprehensive of the entire curriculum
- Add 3rd & 4th years

The MedWiki is a protected site. It's currently not on an AHC server, so they are working on moving it to a secure University server. There may some issues with copyright, which are being investigated. Currently posted images are under a Creative Commons license.

MedWiki vs. BlackBag

- MedWiki is student generated vs. faculty generated
- MedWiki is consistently formatted with what needs to be learned, as determined by students
- MedWiki includes Anki Cards
- Editable by students (hopefully with approval from the faculty member)

Concerns raised by the Committee: Incorrect or false information; information is outdated and does not get updated; incomplete information. Content may change, it does not get updated, and a student then uses it to study, resulting in incorrect testing.

**A request from the Knowledge Coop: after content and format are created, that faculty is open to students presenting the material to them for review & correction.

Announcements

- LCME: follow-up to non-compliance issues need to be addressed by April 2015. There are still some issues that need compliance including formative assessments. Administration will be coming back to SFC with solutions.
- SFC meeting dates were passed out for the Academic Year.
- There is a new tab on all BlackBag courses called “Tutorials, Tips & Student Links” which includes a video on how to navigate BlackBag, technology tips from the student techs, and links to student-run resources.

3

Annual Course Reports

ECM 1 & ECM 2 (skills section) – Sharon Allen

See attached ACR document for details.

*ECM1

Learning objectives are available on the ACR.

Evidence of outcomes being achieved:

Students score high on the practicals.

Honors criteria had to be adjusted down to include more students.

HDPE (Hypothesis Driven Physical Exam): used to teach the physical exam.

Working well:

Students like the small groups, the faculty facilitators, and working with standardized patients. They do well on HDPE, but are not comfortable doing the exam.

Areas of Concern:

- Articles for HDPE sessions are above their heads.
- HDPE final was too contrived and a waste of time for students, based on feedback.
- Honors—perhaps it shouldn't be there since this is a competency-based course. But with the new Honors criteria, this may not be such a problem this year.

Changes

- Inconsistent teaching between faculty facilitators. Difficult to maintain consistency with 17 tutors, with 17 different teaching styles.
- New approach to HDPE exam—will now be on-line rather than with a standardized patient
- New Honors criteria
- HDPE—For readings, faculty have been asked to give a synopsis of 3 points from each reading for students to know before each case.
- Continuing to incorporate the radiology sessions with anatomy, including on-line sessions
- Added 3 ultrasound sessions

**ECM2 (Clinical skills sections)*

There are 5 sessions in the IERC including clinical-based interviewing, physical exams, write-ups, and oral presentations. Students are in small groups with patient-educators. There are 3-4 students per patient and 5 cases during the duration of the course. There are workshops for oral presentations, and clinical write-ups are required. Workshops include advanced cardiac & pulmonary skills, neurology exams, pediatrics exams, oral communication. Patient-educators are involved in the workshops, too.

Assessments include open-book, on-line formative quizzes; 1x1 practical interviews & physical exams with standardized patients which are written up and then presented. Students perform very well on tests & practicals.

Working well:

- Skills sessions with standardized patients. However confidence & comfort levels are still pretty low for exams, but a little higher for interviews.

Areas of Concern:

- Communication workshop: ratings are still low, but it's improving from the last couple of years.
- Consistency in grading write-ups: faculty grade with a rubric, but scores are still not consistent.
- Students want more time in the IERC and more opportunity for oral presentations.

Changes:

- Adding patients to the communication sessions.
- There are new videos for students.
- The final moved to the week after course midterm week.
- Part of the HDPE may be moved online, as it did in ECM 1.
- Adding 2 ultrasound sessions to ECM 2.

Dr Allen is grateful to all the faculty who participate, as it's a lot of work. Committee members feel that it's ok for comfort levels on practical exams to be in the 2.8 - 2.9 range. This is appropriate for where the students are in their studies at this time. Communication skills are needed & very necessary for doctors, as it's often lacking in the real world. But there is only limited time for the students to practice this in the 3 communication workshops.

Is there a "UMN" standardized physical exam & write-up? Yes, there is a physical exam checklist with designated maneuvers for the exam. Not all maneuvers are tested on the exam, but may be demonstrated in the videos that students watch. *Are the faculty trained to teach the exam in the same way?* No. The standardized patients are trained, though. Only the HDPE is demonstrated during faculty orientation. All faculty are either family medicine or internists. There are slides & a video available for faculty to watch on the physical exam.

Suggestion for patient admitting & patient presenting: Determine from the start why the patient is in the clinic, and what is the problem s/he was admitted for. Address only 1-3 major problems before the history is presented. Dr Allen will talk to Dr Berryman about this.

Discussion

Practice Formative Assessments

Table of course formative assessment offerings is included at end of minutes. Highlights include:

Purpose of formative assessments:

- non-graded practice questions
- used for students to measure their process

Observations from the survey:

- it's a very heterogeneous between courses
- some offer several hundred questions; some offer very few
- if old exams are posted for students, course directors need to be certain that all concepts/content are updated for the current year, and that question formats are the same as the current tests

No student has ever complained about "too many" practice questions. However, it's difficult to generate these questions. The students' biggest concern is "what is the level of detail" that will be tested, and how will questions be worded? One representative exam/example of each summative assessment may be sufficient as an example.

5

It's important to have consistent formative assessments, as there is usually no time for formal review before finals. These help to let students know if they are studying correctly BEFORE the test. There needs to be compromise between what the students want and what the faculty can provide. Students may want a set of questions each week, but does faculty have time to supply weekly questions?

There are various format possibilities: i.e. questions with the answers right away, questions with the answers at the end.

There must be a way to assess student process and progress, but overload is not necessarily the way to go. Students may concentrate too much on the detail of questions at the expense of the larger concepts.

Dr Woods is very pleased with the distance that courses have come over the last few years in providing formative/practice questions. This was not available in the past. We've come a long way, and the continuous dialogue between Course Directors on this topic is a great way to continue.

Formative assessments could be a great collaborative tool for the MedWiki.

Dr Slattery shared that many students look for as many questions as possible, including on-line. *Can there be a collaboration between commercial question banks, and those questions supplied by faculty?* This is difficult, as there is a disconnect between the focused subject questions from NBME/USMLE/on-line sources, and the integrated questions that the Medical School is trying to encourage. They are also not in the style of any particular instructor.

Nikki Cairns suggested that students could generate the practice questions and submit to faculty for approval!

The comfort level of students is the issue, not the knowledge level. Our students perform well on exams & Step 1.

Dr Katz asked Dr Woods to draft a letter to Course Directors re: this topic and whether they can add/revise questions for their course. Using the table info, SFC needs to address Course Directors who supply no or few questions. The table could also be used to answer the Medical School's LCME shortcomings.

FUTURE AGENDA ITEMS

Suggestions from Course Directors for future SFC meeting topics:

- Student disability and accommodations
- ExamSoft & BlackBag assessments
- ILT feedback
- BlackBag search functionality

The next SFC meeting is November 7.

The December 5, 2014 meeting will be a joint one with the Clinical Education Committee and CUMED in Duluth.

The meeting was adjourned at 9:00 am.

Respectfully submitted,
Brian Woods

Knowledge Coop

Tarissa Lai
Sam Kozloff
Miriam Smetak



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

WHAT IS THE MEDWIKI?



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Goals of MedWiki

- Generate highly trusted, validated content
- Pass on best practices from year to year.
- Encourage collaborative learning, resulting in future physicians who are better equipped for providing coordinated care.
- Improve faculty-student feedback process
- Enhance the medical student experience by consolidating learning resources.

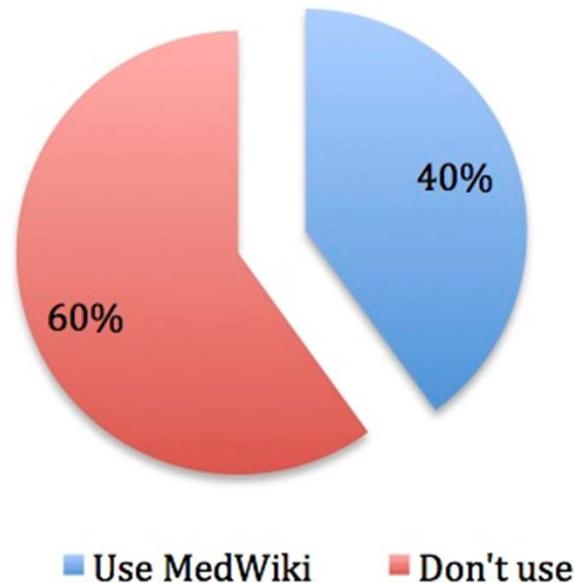


UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Who uses it right now?

- 40% of survey participants are currently using the MedWiki to supplement their studying



What does it look like?



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM



KCooop Neuroscience: Somatosensory 1

Contents (view)

- 1 What you need to know
- 2 Dermatome Landmarks
- 3 DORSAL COLUMN—MEDIAL LEMNISCUS PATHWAY
- 4 Anatomy
 - 4.1 FIRST ORDER NEURONS
 - 4.2 SECOND ORDER NEURONS
 - 4.3 THIRD ORDER NEURONS
- 5 Summary
- 6 QUIZ TIME

What you need to know

1. Dermal nerves and landmarks
2. The dorsal column—medial lemniscus pathway
3. The spinothalamic tract (STT)

Dermatome Landmarks

Dermatome: area of body supplied by one DRG (dorsal root ganglion)

You should quickly memorize these landmarks. It's probably worth a question on the test. (But keep in mind that in real life the sensory fields do overlap, and cutting one dorsal root does not equal complete loss of innervation to a dermatome)

C2:	Back top of head	
C5-C8:	Forearms and hands	
T4:	Nipples	T4 is at the Test. Pore
T10:	Umbilicus	T10 is at the belly button
L1:	Inguinal	
L4-S1:	Legs and feet	Lower in the Foot (L) and S1= (H)
S2-S5:	Buttocks and genitalia (S2,3,4 keep the penis off the floor)	

DORSAL COLUMN—MEDIAL LEMNISCUS PATHWAY

One of two major pathways. You should know this inside out. There will be several questions that test your comprehension of the pathway and the STT.

Inputs to this pathway are the mechanoreceptors. They receive the following info:

- Fine tactile sensation (two-point discrimination)
- Vibratory sensation
- Joint proprioception (position sense)

This info comes from:

- SA1 (Meissel discs - indentation)
- SA2 (Puffin endings - stretch)
- Pacinian Corpuscle (vibration)
- Meissner's Corpuscle (indentation)
- Hair follicles

Ok, now forget all that, and really know this:

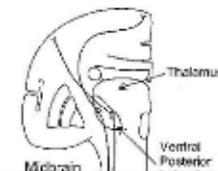
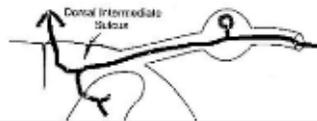
- This pathway is for feeling, vibration, 2 point discrimination and proprioception.

Anatomy

First, here's an overview figure of the pathway. For now, just use it as a reference as we go through each of the steps.

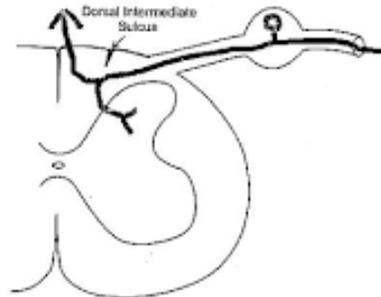
FIRST ORDER NEURONS

Mechanoreceptors enter dorsal column via the medial part of the dorsal root. Many of these neurons send a local branch to terminate in the dorsal horn. All of these first order neurons ascend in the ipsilateral dorsal column of the spinal cord. Remember that they stay ipsilateral to begin with.



FIRST ORDER NEURONS

Mechanoreceptors enter dorsal column via the **medial part of the dorsal root**. Many of these neurons send a local branch to terminate in the dorsal horn. All of these first order neurons ascend in the **ipsilateral** dorsal column of the spinal cord. Remember that they stay ipsilateral to begin with.



The dorsal columns are organized. Info from the legs and feet is **medial**, in the **gracile fasciculus**. Info from the arms and hands is **lateral**, in the **cuneate fasciculus**. (This is why the dorsal columns get bigger as you move up from lumbar to cervical—you are adding more and more neuron fibers.)

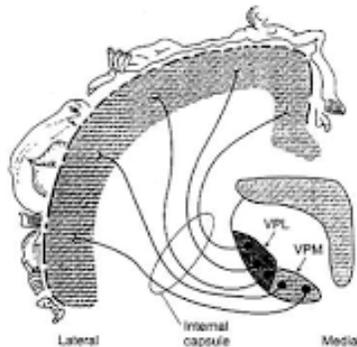
These primary neurons ascend all the way to the **medulla**, where they finally synapse in the **gracile and cuneate nuclei**. Know that:

- They have not crossed; they are still **ipsilateral**. Therefore if you have a lesion at or below the cuneate and gracile nuclei (i.e. Cuneate, gracile, dorsal column) you have **ipsilateral** loss of the big 3 (proprioception, 2 point discrimination, and fine touch).
- These are still the first order neurons.
- Only 25% of neurons that started at the mechanoreceptors actually make it here. The other 75% make **propriospinal** connections in the spinal cord gray matter. This allows your spinal cord and muscles to communicate without talking to your brain. The organization is still the same. Info from legs and feet is medial, arms and hands are lateral -this is why when you cut off a cat's head it can still walk on a treadmill. For a while, anyway...
- A lesion below the medulla in the spinal cord results in **ipsilateral symptoms**

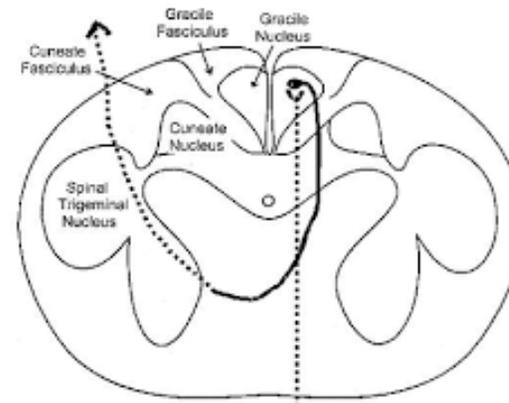
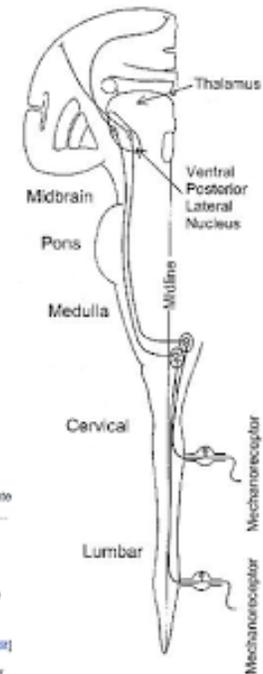
While we are talking about synapsing, you should know that in the Dorsal Column–Medial Lemniscus Pathway, neurons stay **segregated**. This means that an SI receptor neuron will synapse on a SI 2nd order neuron will synapse on an SI 3rd order neuron etc. However, **convergence** will occur—where many of the first-order neurons will synapse on a single second-order neuron (the neuron's receptive field is larger). Also, be aware of the concept of **magnification**. A disproportionately high number of neurons in the gracile and cuneate nuclei are devoted to the hands and feet. This is why they are so sensitive to the big 3.

SECOND ORDER NEURONS

These neurons start in the gracile and cuneate nuclei (in the medulla) where they are synapsed on by the first order neurons. The axons then cross to the other side via the **sensory decussation** in the medulla where they form the **medial lemniscus**. The information is still organized, but the organization has changed. Now, the arms are dorsal and the legs are ventral. Think of it as a person standing on the pyramids. **Any lesion after this point will produce contralateral sensory deficits of the big 3.** Here is a picture of the last few paragraphs:

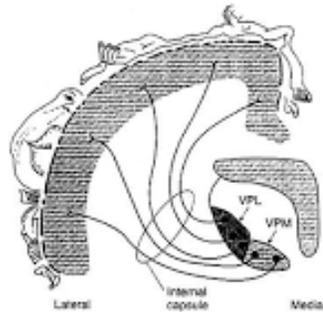


The second order neurons continue on through the **medial lemniscus** to the thalamus where they synapse on third order neurons in the **ventral posterior lateral nucleus (VPL)**. They are still organized, but they're related some more. Now, the information from the legs is lateral, and the stuff from the arms is medial. This is the opposite of the organization in the dorsal columns.



SECOND ORDER NEURONS

These neurons start in the gracile and cuneate nuclei (in the medulla) where they are synapsed on by the first order neurons. The axons then cross to the other side via the **sensory decussation** in the medulla where they form the **medial lemniscus**. The information is still organized, but the organization has changed. Now, the arms are dorsal and the legs are ventral. Think of it as a person standing on the pyramids. Any lesion after this point will produce **contralateral sensory deficits of the big 3**. Here is a picture of the last few paragraphs:



The second order neurons continue on through the medial lemniscus to the thalamus where they synapse on third order neurons in the **ventral posterior lateral nucleus (VPL)**. They are still organized, but they rotated some more. Now, the information from the legs is lateral, and the stuff from the arms is medial. This is the opposite of the organization in the dorsal columns.

THIRD ORDER NEURONS

The third order neurons travel from the VPL to the ipsilateral **postcentral gyrus** in the **somatosensory cortex (S1)** where they arrange in the familiar homunculus (see above picture). Notice how they travel through the **posterior limb of the internal capsule** on the way to the cortex. Therefore think about what symptoms and signs a patient would have if you knocked out the blood supply to the posterior limb of the internal capsule.

Don't worry about the VPM on this figure yet, that's just stuff from the face that you'll learn about that later in this packet. Just notice how the third order neurons go from the VPL to the cortex. Now, the organization is such that the legs are medial and the arms are lateral, just like in the dorsal columns. Ahhhh... it came full circle, isn't that satisfying?

Summary

- Know the start and end of the neurons for the DCM system.

	Start	End Structure	End Location	Information	Legs	Arms
First Order	Mechanoreceptors	Gracile and Cuneate Nuclei	Medulla	Ipsilateral	Medial	Lateral
Second Order	G1 and C nuclei	VPL	Thalamus	Contralateral	Lateral	Medial
Third Order	VPL	Postcentral Gyrus	Cortex	Contralateral	Medial	Lateral

- Know the organization of the neurons (i.e. where the legs are in relation to the hands) for each start and end point. Note: The head is not actually present until the level of the postcentral gyrus due to the fact that the innervation to the head comes from a different set of nerves. Imagine little people sitting on the structures.

- Know that the pathway only crosses the midline once: the second order neurons cross from the gracile and cuneate nuclei via the sensory decussation to the medial lemniscus on the contralateral side and finally to the VPL. Know at every point in the pathway whether the information is ipsilateral or contralateral and what deficits would occur with a lesion.

QUIZ TIME

1. Neurons in the lateral part of the ventral posterior lateral nucleus (VPL) of the thalamus on the left side of the brain are part of the pathway that underlies which of the following?

- pain originating from the left leg
- temperature sensation on the right arm
- 2-point discrimination on the right face
- joint position sense on the left arm
- joint position sense on the right leg

2. A lesion that cuts all of the axons in the lateral half of the dorsal columns in the right side of segment L1 (but spares all axons in the medial half) will have which of the following effects?

- reduce vibration sense in the right hand
- reduce 2-point discrimination on the right thigh
- reduce vibration sense on the right buttock
- reduce joint position sense for the toes of the left foot
- reduce vibration sense for the left hand

ANSWERS: 1. C, 2. B



UNIVERSITY OF MINNESOTA
Driven to DiscoverSM

WHAT IS MEDWIKI NOT?



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Not a Note-Taking Service

- Collaborative learning.
- *Active* learning experience.
- Learn by participating.



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Not a Replacement for Lecture

- Meant to supplement and complement
- Offers a collective and verified perspective on course material
- Meant to be a conversation between students and faculty



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

WHY IS IT IMPORTANT?



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Benefits to Students

- Centralized, trusted learning resources
- Improve communication with faculty
- Shared workload
- Increase time dedicated to mastering the material, opening time for community involvement
- Reduces anxiety



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Benefits to Faculty

- Reduces instructor's workload: FAQs
- Ensures students are getting the right information out of lecture.
- Improves feedback to instructors
- Improves student satisfaction
- Reduces student anxiety
- Ability to tailor lectures with timely feedback
- Help instructors create useful educational supplements



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Benefits to the medical school

- Assists at-risk students by equipping them with high-quality resources
- Source of remediation and recovery for students with academic issues
- Admissions benefit - Looks good to prospective students
- Continual and timely curriculum improvement



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

WHO IS INVOLVED?



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Medical Students

- Generate content with faculty coordination
- Curate content
- Identify and promote effective tools
- Maintain and improve infrastructure



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Faculty

- Verify content
- Endorse Knowledge Coop learning resources
- Timely feedback and clarification on misconceptions and what is important
- Coordinate with student content makers



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

SFC/Student Council

- Recruitment of faculty
- Promotion and legitimacy
- Consistency and sustainability through student council representation
- Funding
 - temporary



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Examples

- Current MedWiki/Anki Collective
- Dr. Powell
 - Anki Decks
- Dr. Gutierrez
 - Embryology notes
- Dr. Weinhaus
 - Additional resources



FUTURE OF MEDWIKI



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Long-Term Vision

- Sustainable platform
- Increased student-faculty partnerships
- Comprehensive and consistent presentation of entire curriculum
- Ongoing process of curriculum improvement
- Adding 3rd and 4th years
- Rotation reviews and advice



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM



UNIVERSITY OF MINNESOTA
MEDICAL SCHOOL

Thank you!



UNIVERSITY OF MINNESOTA
Driven to DiscoverSM

Annual review, Essentials of Clinical Medicine (ECM 6803) Part 1 2/18/14

Learning Outcomes:

- This course teaches communication and medical interviewing skills, basic physical exam skills and begins to teach clinical reasoning. A series of lectures and clinic activities was added as the Masters of Clinical Information section of the course last year.
- It is designed with small groups, 10 students per group with a faculty facilitator that meets over a period of 18 weeks starting in August through early December.
- ECM consists of 2 Communication sessions, 5 Interview sessions and 8 Physical Exam Tutorials.
- The MCI section included lectures which covered topics that include biostatistics, study design, critical review of journal articles, and application of clinical information to patients, translational research and managing conflicts of interest.
- Assessment for ECM 1 consisted of:
 - 6 online anatomy quizzes
 - 5 open book radiology quizzes
 - An interview practical at the end of November
 - A written medical history practical at the end of November
 - A physical exam practical in early December
- The MCI assessment consisted of online quizzes and a project.
- Professionalism was assessed at the end of the course by a facilitator evaluation form. This included several categories such as attendance and participation.
- All students scored high on the practicals: the interview practical – Mean = 33.7/35; the written history practical Mean = 48.3/50; the final physical exam practical: the head-to-toe sections - Mean = 55.7/58 and the HDPE section - Mean = 17.8/20
- Honors was based on cumulative points, as well as demonstrating outstanding professionalism, attending all sessions and demonstrating outstanding skill in critical thinking. Originally we aimed for the top 3% of total points but only 7 students met points for honors so we lowered the total points for honors to 323/333 and this gave 22.5% of the class to receive honors – 39 students

What changes were made in the course?

Additions in 2013

- The HDPE cases were tweaked.
- The detailed and exam checklists and the physical exam cards were revised to better reflect and match the physical exam maneuver checklist.
- The radiology sessions stayed the same with three live sessions, and the rest were recorded. We tried to connect this part of the course better with anatomy.
- The HDPE evaluation section of the Final Physical Exam practical was the same as 2012 and was done using patient educators as evaluators. The students were also not given the case before hand; they were only given a general organ system that was involved in the chief complaint of the case.
- We allowed the open book anatomy quizzes to be open till end of the course.

- MCI was converted to team based learning format.
- We had a 2 hour lecture/discussion on healthcare disparities and determinants of health.

Describe what is working well in your course:

- Small group sessions are a highlight.
- Faculty facilitators are highly praised. They bring their experience and give the course a real-life, hands-on experience.
- The standardized patients are always wonderful.
- All faculty facilitators were rated at a level of 4-5.
- On a scale of 1-5, with 5 being strongly agreed; students rated the HDPE physical exam teaching as being beneficial to help develop clinical reasoning and gave it a score of 3.6.
- Again on a scale of 1-5. With 5 being strongly agreed; students rated “I feel comfortable performing the HDPE part of the physical exam during tutorials” at a level of 3.6 points.
- The students rated their comfort level with physical exam skills a 2.8 (scale 1-4 with 4 being very comfortable)
- The students rated “I felt comfortable performing the HDPE part of the physical exam during tutorials” a 3.6
- The faculty facilitators are phenomenal and do a wonderful job.
- Students in general are positive about the radiology section of the course – they appreciated the on line sessions. This still gets a low rating of 2.9.

Describe any areas of concern:

- Students don't like the HDPE part of the physical exam tutorials – they felt the readings were too much material and they have no pathophysiology to understand the readings –
- Students did not like the HDPE section of the final exam – they felt it could be done on paper, was too contrived
- Students felt that they didn't have enough time to practice the physical exam skills -although most rooms in the IERC were empty by 3:30 when the sessions went till 4:25
- Inconsistencies in teaching among the facilitators is an ongoing problem. Facilitators teach differently and there is always anxiety amongst the students that some other group is learning more than they are.
- In spite of weekly communication to all the facilitators, the students felt they didn't have a good understanding of what was expected each week especially on the final HDPE test
- Students felt the final section of the HDPE test was poorly designed in that we didn't need to have a patient educator and the skills lab (they didn't realize that we have been unsuccessful in finding an online program for them to do the HDPE section of the final exam)
- Students felt that the course could use more organization that we did not give information in a timely fashion - there are a lot of moving pieces in the course and it is hard to get a grasp on the overall big picture.
- Honors was questioned by several students who received total points but were not recommended by their facilitator to receive honors. This is an ongoing issue which last year was denied that this course be exempt from honors.
- For MCI some students had some concerns about the TBL format

Describe any changes you plan to make:

- Would like to revise the interview sessions to initially build a framework for the interview. Then allow students to interview with SP's. We would need an SP for each group for the afternoon rather than sharing a SP between 2 groups which is what we do now. This might require extra budget money as we would need more SP's for a given session (would need 8 or 9 on a given day instead of 4-5).
- Delete the HDPE readings and still give the hypotheses for the cases and let students use Medline to read about the disease – Emphasize with the facilitators to present a brief synopsis of the given hypotheses before they do the HDPE case – i.e. what should students be looking for in terms of the physical exam and what they would expect to find –
- Move the HDPE part of the final exam in ECM 1 to ECM 2 where we could use the last IERC case tutorial for an HDPE assessment with a Patient Educator – use a musculoskeletal or neurological case that PEs could simulate better and have students do a 25 min encounter with a focused hx and exam
- Introduce 1 session with sim man portal for the abdominal exam – this would require training of faculty to run the sim man. Will drop the HDPE case for that tutorial
- We reviewed the radiology sessions and will change the question on course evaluation to better reflect the objective. We will continue with the online sessions.
- We will continue to try to get more consistent with teaching; however I think this is an inevitable issue that will not go away. Overall all the facilitators have high ratings and overall the students score high so it does not appear to be detrimental.
- For the honors policy next year notify the faculty facilitators of students in their group that have total number of required points for honors before they decide who to recommend for honors. I still feel Honors is not appropriate in this course.
- For MCI will adjust TBL some to try and respond to student concerns

Annual review, Essentials of Clinical Medicine (ECM 6804) Part 2

4/21/14

Course Summary:

- This course teaches communication and medical interviewing skills, focused physical exam skills as well as head to toe and teaches medical record documentation, teaches oral presentation communication skills and it also teaches students how to apply concepts of behavioral science, social science and ethics in clinical reasoning.
- The clinical skills section is designed in small groups (3-4) working with patient educators in the IERC. Teaching is from patient educators who have been specifically trained. There are 5 IERC based case sessions, 6 advanced skills workshops scheduled over the 10 weeks. In addition there is ½ day weekly sessions which consist of large and small groups with faculty facilitators and 10 students per group.
- The workshops consist of cardiovascular and pulmonary advanced skills (1), neurological exam skills (1), pediatric exam (1), and communication skills (3) working on written and oral communication skills.
- The Wednesday sessions mainly focused on ethics with large group lectures and then small group discussions.
- Assessment for the clinical skills ECM 2 consisted of:
 - 5 individual online case based quizzes
 - 5 group quizzes in clinic on medical history
 - A final practical which included a brief medical history and selected ROS, a head to toe physical, a brief HPI write up and an oral presentation
 - 5 complete medical and physical exam write ups of the clinical cases
- Assessment for the Wednesday sessions was a take home written exam where students had to apply ethics and social science principles to clinical cases.
- Professionalism was assessed at the end of the course by a facilitator evaluation form. This included several categories such as attendance and participation.
- All students passed both the clinical skills practical and the take home written exam.

1. Overall mean for Final clinical skills exam (Parts A, B & C) = **147.4/154**

2. Overall mean for Part A = **16.3/17**

3. Overall mean for Part B = **109.6/114**

4. Overall mean for Part C = **22 /23**

5. Overall mean for all course points = **/384**

6. Range for all course points = **(low) (high)**
 7. Overall mean for take home test = **/100**
 8. Range for take home test = **(low) (high)**
- Honors were based on cumulative points, 96% of the possible course points as well as other criteria: demonstrating outstanding professionalism, attending all sessions and participating, demonstrating outstanding skills in critical thinking and creative thinking.

What changes were made in the course?

Additions in 2014:

- The communication workshops were revised to incorporate patient educators as helping with the oral presentations in role playing and giving feedback
- Videos of interviews were used in all 3 communication workshops
- A rubric was developed to help in the communication workshops
- Quizzes regarding the clinical cases were revised for Black Bag
- One of the cases was revised
- Quizzes were a formative evaluation
- The final was after mid-term week and spread over 4 days

What is working well in your course?

- Skills sessions were highly beneficial to students.
- Interaction with patient educators was very positive.
- The cardio pulmonary workshop was rated **4.2 (1-5)**
- Neurology workshop was rated **4.7 (1-5)**
- Pediatric workshop was rated **4.1 (1-5)**
- Confidence level of the physical exam was a **2.8 (1-4) same as last yr.**
- Comfort level of the physical exam was **2.9 (1-4) same as last yr.**
- Confidence level for the medical interview was **3.2 (1-4) same as last yr.**
- Comfort level in conducting a medical interview **3.2 (1-4) same as last yr.**
- The write up assignments helped me learn about medical records **4.1 (1-5)**

Describe any areas of concern:

- Communication skills workshop was rated 3.8 **(1-5) same as last yr.**
 - Wanted more opportunity to do oral case presentations
 - Wanted smaller groups – currently about 6/group doubt we can get smaller

- Consistency of grading write ups and spread of scoring
 - Satisfactory
 - Score of 5 = 4%
 - Score of 6 = 0%
 - Score of 7 = 1%
 - Score of 8 = 30%
 - Score of 9 = 3%
 - Outstanding (score of 10) = 62%
- Lack of extra time in the IERC
- Quizzes were formative and therefore less concerns about points
- Honors remain problematic – this is a competency based course.
- Students get mixed instruction from PE's and from faculty in ECM1 -faculty have individual ways of doing exam maneuvers and PE's watch the video and were trained by Dr. Allen – and some PE's are inconsistent

Describe any changes you plan to make:

- Use the last clinical skills session for an HDPE practical with a given musculoskeletal or neurological case
- Encourage faculty to be more discriminating in their grading of write ups. Continue the grading range for the write ups – Satisfactory (5), Excellent (8) and Outstanding (10)
- Continue with the new structure of the communication workshops and videos for the sessions
- Continue to have all the ECM finals during the week after mid-terms
- Continue with Quizzes online to be formative – not count for total points
- Continue with Quizzes in the IERC to be formative – not count for total points
- Would still like to eliminate honors

MS1 and MS2 Courses - Practice Formative Assessments

Year/ Semester	Course	Course Director(s)	Does the course supply practice formative assessments?	If No, why does the course not supply practice formative assessments?	What types of practice formative assessments does the course supply?	Approximately, how many practice formative assessment items of each type does the course supply?
M F S A 1 L - L	Human Structure & Function	Anthony Weinhaus, Jan Norrander	Yes		<u>Anatomy/Embryo</u> : Test banks, old exams, formative quizzes • <u>Histo</u> : Formative quizzes	<u>Anatomy</u> : 3 practice practical formative assessment for both midterm and final exam. In addition, there are approx. 10 sets of old written exam questions for each exam. • <u>Embryo</u> : a test-bank for each lecture. There is then an on-line quiz for each lecture. There are also 3 practice practical formative assessments for each exam. • <u>Histo</u> : one lecture quiz and one lab quiz for each of our 20 topics. Quizzes take random questions from databanks, so students get a different set of questions each time they take the quiz. (There is also an option for getting all the questions in a databank at once). In addition, there are 12 multi-topic quizzes which combine questions from topics covered on summative quizzes, Midterm and Final exams.
	Science of Medical Practice	Lisa Schimmenti, Michel Sanders	Yes		We have both a subject based question bank and quizzes.	There is a 500+ question bank and weekly quizzes with one question per lecture hour for a total of approximately 100 questions. The quizzes are about 10% of the total course points. • The quizzes provide feedback with explanations regarding the responses and references back to the relevant lecture material. • There are two lower stakes tests in addition to the midterm and final. The lower stakes tests are 30 questions each and are 9% of the total course points each. The students get to keep the lower stakes tests as a study tool.
	Essentials of Clinical Medicine 1 & 2	Sharon Allen	Yes		Prep questions	ECM 1: 6-7 • ECM 2: 5
S M P S R 1 I - N G	Microbiology & Immunology	Peter Southern	Yes		Old exams	3 example question sets are provided on BlackBag in advance of each Quiz, the Midterm and the Final. • Answer keys are posted separately on BlackBag.
	Neuroscience	Glenn Giesler	Yes		Old exams	We supply at least three old quizzes or exams for each quiz and exam.
	Physiology	Stephen Katz, Doug Wangenstein	Yes		Old exams plus questions relevant to particular lectures	OLD EXAMS: 12, approx. 630 questions. • Questions relevant to particular lectures, approx. 250.
S M U S M 1 M - E R	Human Behavior	Rick Amado	No	I don't provide them and I don't know if students can access previous materials or not.		
	Human Sexuality	Eli Coleman	Yes		Formative quizzes	2
	Principles of Pathology	Deborah Powell	Yes		Formative quizzes	We give one formative mid-term exam. • We post about 30 multiple choice review questions and short answer review questions. • We set up a lab exam review.
	Principles of Pharmacology	Kevin Wickman	No information			
	Essentials of Clinical Medicine 3A	David Satin, James Nixon	No information			

MS1 and MS2 Courses - Practice Formative Assessments

Year/ Semester	Course	Where do these practice formative assessments come from?	Do other instructors in the course contribute practice formative assessments?	How are the practice formative assessments in the course delivered to students?
M F S A 1 L - L	Human Structure & Function	<u>Anatomy/Embryo</u> : Old exam questions are literally from written exams that occurred before the secure exam policy. Test banks are newly written based-upon examples from board review books. Practice practical formative assessments are a co-operative effort between the students, TAs, and faculty - all participating equally. On-line quizzes are written by the lecturer. • <u>Histo</u> : For the lecture quizzes, the questions are from old exams. For the lab quizzes, I used images from an our old atlas.	<u>Anatomy/Embryo</u> : Yes • <u>Histo</u> : No	<u>Anatomy/Embryo</u> : Old exam questions and testbanks are provided both as a .pdf and an on-line Moodle activity. Quizzes are through Moodle (I do not believe the function works well in BBag). Practice practical formative assessments are conducted in the gross labs on the dissections. • <u>Histo</u> : Moodle quizzes. There are links to the quizzes on BlackBag, or students can go directly to the Moodle site.
	Science of Medical Practice	The quizzes, tests and mid-terms are written each year. Most of the questions are fresh with a minority from previous examinations. • The question bank is from questions from old examinations and quizzes.	Yes	The question bank is in a word document that can be downloaded from BlackBag. •The quizzes are in BlackBag. • The two tests are in paper format with bubble sheets and taken over the course of an hour.
	Essentials of Clinical Medicine 1 & 2	newly written questions	No	BlackBag
S M P S R 1 I - N G	Microbiology & Immunology	Archived materials, including questions from quizzes and examinations in previous years.	Yes	Word files on BlackBag
	Neuroscience	Old tests.	Yes	Accessed through Blackbag
	Physiology	Generally older assessments that have been kept up to date and some newly written questions from other sources.	Yes	Old exams on BlackBag. • Questions relevant to particular lectures generally follow the lecture or are nested within the lecture, and are found in the course packet (lecture notes).
S M U S M 1 M - E R	Human Behavior		No	
	Human Sexuality	newly written questions	No	BlackBag quiz
	Principles of Pathology	Newly written questions and review exams which we reuse	No	Blackbag, ExamSoft exam and practice lab exam in the lab
	Principles of Pharmacology			
	Essentials of Clinical Medicine 3A			

MS1 and MS2 Courses - Practice Formative Assessments

Year/ Semester	Course	Course Director(s)	Does the course supply practice formative assessments?	If No, why does the course not supply practice formative assessments?	What types of practice formative assessments does the course supply?	Approximately, how many practice formative assessment items of each type does the course supply?
M F S A 2 L - L	HHD - Cardio & Resp	Robert Kempainen	Yes		Formative midterm, quizzes, selected old test questions but not old exams.	Formative midterm: 50 items from 4 disciplines • Formative quizzes: 45 items from 2 disciplines • Practice questions: 40 additional questions from 4 disciplines
	HHD - GI & Heme	Heather Thompson Boom	Yes		Both old exams and quizzes	Old exams: 2 • Quizzes: 13 (prior to small groups)
	HHD - Neuro & Psyche	Kaz Nelson, H. Brent Clark	Yes		Formative quizzes	2 practice quizzes
	Essentials of Clinical Medicine 3B	David Satin, James Nixon	No information			
S M P S R 2 I - N G	HHD - Renal & Endo-Repro	Catherine Niewoehner	Yes		Old Exams • Other: weekly review questions with answers discussed. Pathology to provide new questions pertaining to the Lab practical exams this year.	•Old exam questions: approximately 100 old exam questions that have been updated before the midterm and again before the final exam. •Question and answer sessions: 20-25 questions per session (six sessions /7 weeks). •Lab Practical review questions: number to be determined.
	HDD - Rheum, Derm, Opth, Ortho & Otol	Anne Minenko	No information			
	Essentials of Clinical Medicine 3C	David Satin, James Nixon	No information			

MS1 and MS2 Courses - Practice Formative Assessments

Year/ Semester	Course	Where do these practice formative assessments come from?	Do other instructors in the course contribute practice formative assessments?	How are the practice formative assessments in the course delivered to students?
M F S A 2 L - L	HHD - Cardio & Resp	old exams, newly written	Yes	Quizzes and midterm assigned on BlackBag. Additional questions imbedded in lecture or syllabus.
	HHD - GI & Heme	The old exams are actually quite "old" since the exam has been sequestered for several years now. That was part of the problem; the content had changed, and the old exam questions were not as relevant.	No	BlackBag quizzes to be completed prior to small group. These are created by the GI and Heme instructors.
	HHD - Neuro & Psyche	Old assessments, newly written questions, modified questions.	Yes	BlackBag quiz
	Essentials of Clinical Medicine 3B			
S M P S R 2 I - N G	HHD - Renal & Endo-Repro	Old exam questions come from the 2008 exams, but these have been reviewed and updated. Additional questions are added as the course content changes. The weekly question and answer session questions were developed specifically for these sessions and are updated annually.	Yes. I provide the Endo/Repro Pathophysiology questions; Renal Pathophysiology, Pharmacology, Pathology and Laboratory Medicine questions come from those disciplines.	All practice formative assessments are provided on Black Bag. The weekly review session questions also are discussed at optional review sessions from 12:20-1:05 on Friday noons.
	HDD - Rheum, Derm, Opth, Ortho & Otol			
	Essentials of Clinical Medicine 3C			