



2010 Spring Conference Abstracts

Entering A New Decade of Medical Education

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Friday Concurrent Session Abstracts

Session I

Preparing to Be a VSAS Host School: Practicalities, Payoffs, and Pitfalls

Mary McIlroy MD, The Ohio State University College of Medicine

Chris Meiers MS, University of Kansas Medical Center

Sean Bragg BA, The Ohio State University College of Medicine

The AAMC Visiting Student Application System (VSAS) provides a streamlined electronic process for both students and medical schools to deal with applications for visiting electives. VSAS has invited additional medical schools and COTH-member academic medical centers to become host schools next year. Medical schools and hospitals considering joining VSAS as host institutions will need to address specific questions and challenges to make a successful transition to becoming a VSAS host. Crucial preparation and planning foci include staffing, establishing procedures, requirements, approval processes, fees, increased application numbers, and system access for departmental coordinators, among other topics. In this session, experienced users will highlight issues to consider, successful approaches, benefits of using the system, pitfalls to avoid, and “best practices” recommendations. The panelists will provide perspectives from a registrar and Assistant Dean of Students, a Med 3-4 program coordinator, and a Med 3-4 program director/clerkship director from two large medical schools. The moderator will encourage discussion, comments and questions from the audience following the panelists brief presentations.

Medical Education Research Exchange Session

Using Curriculum Management Systems to Respond to LCME ED-33 (Integrated Institutional Responsibility for Curriculum)

Terri Cameron MA, Association of American Medical Colleges

Laura Dast BA, University of Wisconsin School of Medicine and Public Health

Celeste Hubbard BA, Creighton University School of Medicine

Larry Hurtubise MA, The Ohio State University College of Medicine

Michael Karr BS, University of Kansas School of Medicine

Stacey Jackson MS, Indiana University School of Medicine

Monica Martin, Creighton University School of Medicine

Celeste Hubbard BA, Creighton University School of Medicine

Kelly Noll BS, Washington University School of Medicine

Several LCME Education Standards relate to institutional responsibility for medical school curricula: • ED -33: “...integrated institutional responsibility for the overall design, management, and evaluation of a coherent and coordinated curriculum.” • ED-34: “The program’s faculty must be responsible for the detailed design and implementation of the components of the curriculum.” • ED-35: The objectives, content, and pedagogy of each segment of the curriculum, as well as for the curriculum as a whole, must be subject to periodic review and revision by the faculty.” Curriculum Management Systems can assist in meeting these standards by supporting the efforts of curriculum committees, faculty, and curriculum administration to actively participate in curriculum, pedagogy, and evaluation design. In addition, data generated by the system can enhance curriculum committee discussion of coverage and assessment of key topics and competencies, of outcomes data, and of evaluation of courses and the overall program. In this session, six medical schools will provide a brief overview of their curriculum management systems, and discuss how they use the CMS to meet LCME ED standards related to institutional responsibility for the curriculum. In the discussion that follows the presentations, presenters and participants will outline the key components of a curriculum management systems, discuss how they use the systems to support curriculum committee discussions and initiatives, and develop a list of best practices for use of curriculum management systems.

Service Learning in Medical Schools: Requiring, Formalizing, and Documenting Student's Service Learning Activities

Nicole Borges PhD, Wright State University Boonshoft School of Medicine

Katherine L. Cauley PhD, Wright State University Boonshoft School of Medicine

Jennifer Mendez PhD, Wayne State University School of Medicine

Denise D. Gibson PhD, University of Cincinnati College of Medicine

In July 2008, the LCME put forward a new standard on service learning (IS-14-A). The standard reads: Medical schools should make available sufficient opportunities for medical students to participate in service-learning activities, and should encourage and support student participation. Although some medical schools have had service learning opportunities for their students for years, medical schools are more inclined now to formalize these experiences and to document service learning activities for their medical students. This discussion group will address: 1) formalizing service learning into the curriculum by adding a service learning requirement to the existing curriculum and offering academic/elective credit for service learning and 2) models for documenting service learning opportunities. Brief presentations by 3 discussants representing different medical schools in the Central Region will highlight the different nature and mission of each medical school (i.e., community based medical school, medical school affiliated with a large academic health center, urban medical school with 16 hospitals, etc) with each institution having its unique set of strengths and challenges to formally incorporate service learning into the structure of the curriculum. The discussion group will strategize ways to enhance service learning opportunities for medical students at their institution by providing a venue for participants to discuss existing service learning opportunities at their medical school, and identify opportunities in the medical school arena where service learning could be implemented, formalized, and documented.

Using Simulation to Obtain a Baseline on New Surgery Interns' Knowledge and Skills

Dena Higbee MS, University of Missouri-Columbia School of Medicine

Nicole Fearing MD, University of Missouri-Columbia School of Medicine

Mark Wakefield MD, University of Missouri-Columbia School of Medicine

As simulation has become an accepted practice in the delivery of training and assessment experiences in undergraduate medical education, the adoption of simulation in residency programs has been slower. With the opening of a new multi-modality simulation center at the University of Missouri's School of Medicine, the development of a new intern orientation for surgery was implemented. This discussion group will highlight the overall objectives of the event, logistics required in order for it to appear as a seamless operation for a multi-part simulation, evaluations and touch on lessons learned.

Academies Collaborative: The Central Edition

Nicole Roberts PhD, Southern Illinois University School of Medicine

Hilary Sanfey MB BCH, Southern Illinois University School of Medicine

The AAMC's Academies Collaborative has grown each year since its inception, now including 50+ members from all regions of the United States. Academies serve various purposes, including recognizing and rewarding excellence in teaching and educational research, fostering collaboration within institutions, and maintaining teaching excellence. As the Collaborative membership has grown, though, it has become evident that the concerns of individual Academies vary based on longevity, institutional concerns, financial arrangements, institutional politics, and other local circumstances. This version of the Academies Collaborative will address the concept of creating and maintain the Academy that your institution needs.

Faculty Vitality and Productivity: Sustaining Your Medical Education Career

Majka Woods PhD, University of Minnesota School of Medicine

Kathryn Huggett PhD, Creighton University School of Medicine

Linda Perkowski PhD, University of Minnesota School of Medicine

Encouraging and supporting faculty vitality and productivity are key elements in keeping faculty active and engaged in the medical education arena. As the faculty population ages, demand for clinical work increases, and compensation for medical education activities remains stagnant or decreases it is imperative that we foster an environment that allows our faculty to feel successful. Medical education continues to need active engaged faculty who are able to share their passion about teaching and learning with their students and at the same time continue with their own professional development. The literature has shown us that the faculty want to stay active and involved but are often so overrun with the everyday minutia that it is difficult to sustain the vitality they first brought to the profession. Generating a dialogue around the needs of people (faculty, staff, and medical educators) in medical education has the potential to enhance our field of work. By keeping on the pulse of what keeps faculty motivated we are more likely to sustain professionals who foster both their own and others learning. This discussion group aims to introduce the audience to the current literature on faculty vitality and then use the collective knowledge of the attendees to help determine gaps and identify ways in which to better recruit and retain individuals in medical education.

RIME Oral Abstract Presentations Session 1

Does Clinical Performance on Third Year Required Clerkships Reliably Identify Students with Serious Deficiencies in Clinical Skills

Casey White PhD, University of Michigan Medical School

Mary Hernandez MD, University of Michigan Medical School

Joel Purkiss PhD, University of Michigan Medical School

Joseph Fantone MD, University of Michigan Medical School

Purpose The summative OSCE, given at the end of the third year, often detects students with serious deficiencies. Earlier identification and remediation of these students is desirable. This study examined the relationship between third year clinical performance on each of seven required clerkships and performance on the OSCE. Methods Overall clinical performance was measured for 500 students (2007-2009) using a standard clerkship assessment instrument (12 items, 9 point scale). Correlations were examined between scores for each clerkship and each OSCE station, and mean overall OSCE and mean overall clerkship performance. Based on mean clinical performance, the students were stratified into quintiles and the correlations re-examined. Results Overall clinical and CCA performance were moderately correlated ($R=0.368$, $p<0.001$; $R\text{-squared}=0.135$). For students in the top quintile the correlation persisted ($R=0.386$, $p<0.001$; $R\text{-squared}=0.149$), but there were no significant correlations for the other quintiles. Educational Significance These findings suggest clerkship grades are associated with, but do not reliably predict, poor performance on the summative OSCE. They also suggest that the OSCE is measuring something different than the clinical clerkships.

Prevalence of Performance Problems Among Medical Students Completing a Year 3 OSCE

Brian Mavis PhD, Michigan State University College of Human Medicine

Dianne Wagner MD, Michigan State University College of Human Medicine

Rebecca Henry PhD, Michigan State University College of Human Medicine

Background: Hauer and colleagues (2007) interviewed clinical skills faculty and derived a taxonomy of students' common performance problems. The current study extends this work by attempting to quantify the relative frequency of each performance problem among third year medical students. Method: The subjects were 41 M3 students who, based on SP checklist ratings, did not demonstrate minimum competency during their OSCE. In total they failed 142 clinical encounters. Each encounter was rated independently by pairs of clinical faculty, using a 26-item checklist of cognitive and technical performance problems derived from Hauer et al. Results: In 60% of the encounters, the medical interview was found to have an inadequate history to rule out other diagnoses. Few of the interview problems were related to technique; most were associated with insufficient data collection. Overall, 37% of the encounters had an unsatisfactory medical interview. Almost

twice as many (70%) failed because of the physical examination. Missing required elements (69%) and inadequate data gathering (69%) were the most common physical exam problems. In contrast to the medical interview, many physical examination problems were related to poor technique (41%), examining patient through gown (31%) and lack of structure/order (26%). Conclusions: Eleven of the performance problems affected 25% or more of the observed encounters. These findings document the relative likelihood of various problems associated with the medical interview, physical examinations, and teamwork and professionalism. Performance problems were equally distributed in the medical interview and physical examination. These findings can inform efforts for curricular feedback, student remediation and instructor development. Hauer, KE., Teherani, A., Kerr, K.M., O'Sullivan, P. & Irby, DM. Student performance problems in medical school clinical skills assessments. *Acad Med.* 2007; 82(10 Suppl): S69-S72.

Bridging the Transfer Gap: Laboratory Combines Clinical Exposure and Anatomy Review

Laura Thorp MPT, PhD, Rush Medical College of Rush University

Adam Wilson MS, Rush Medical College of Rush University

Michael Petty PhD, Rush Medical College of Rush University

James M. Williams PhD, Rush Medical College of Rush University

Purpose: One goal of medical education is to bridge the gap between basic science and clinical practice. Students acquire basic science knowledge during preclinical years, yet have limited opportunities to apply this knowledge clinically. This hands-on laboratory exercise was designed to facilitate a review of anatomy in the context of select clinical procedures, highlighting the application of anatomical concepts in clinical practice. Methods: In 2008, second-year medical students participated in a clinical procedures laboratory taught by senior residents and attending physicians. Before participating, all students completed anatomy and clinical pretests and received syllabi detailing the select procedures and the anatomy pertinent to each. Students were organized into experimental (EG; n=48) and control (CG; n=17) groups. EG observed and practiced 5 procedures on cadavers and CG participated in a traditional anatomy review lab with no procedural demonstrations or practice. Anatomy and clinical posttests were administered to both groups following the 3 hour interventions. Surveys and focus sessions were used to assess student opinions. Results: After comparing anatomy pre- and posttests, scores significantly increased ($p=0.015$) for each group with EG performing better than CG ($p=0.001$). EG showed significant improvement in clinical posttest scores as well ($p<0.001$). CG clinical scores did not improve ($p=0.393$). Conclusion: The review of anatomy coupled with the teachings of clinical procedures elicits an anatomical review superior to traditional methods, enhances knowledge of clinical procedures, and heightens students' awareness of the relationships between basic science and clinical practice.

Year 3 Clinical Campus Model Pilot: A Comparative Outcome Study Between the Pilot Single Clinical - Campus Cohort and All Others

Lawrence Schwartz MD, MEd, Wayne State University School of Medicine

Patrick Bridge PhD Wayne State University School of Medicine

Nelia Afonso MD, Wayne State University School of Medicine

Purpose: To compare academic performance outcomes of year 3 medical students based on their hospital assignment(s) – the pilot single hospital campus cohort (group 1) vs. the traditional multi-hospital campus cohort (group 2). Methods: Traditionally, year 3 medical students at Wayne State University School of Medicine (WSUSOM) in Detroit have been assigned to multiple hospital systems for their clerkships. During the 2008-2009 academic year a single campus model was piloted by 62 out of 302 year 3 students. 48 of the 62 students in the pilot group participated in the study and 139 of 240 students in the traditional group participated. The inclusion criterion was obtaining the rank of a year 3 student by July 2008; exclusion was not completing all year 3 clerkships by October 2009. Results: Prior to year 3 there were no significant differences in the two groups regarding age, gender, USMLE step 1 scores, the end-of-year 1 (EOY1) and end-of-year 2 (EOY2) calculated scores (Table 1 and Table 2). There were no significant differences in year 3 shelf exam scores by site. However, in family medicine and psychiatry final grades were significantly lower in group 1, $p = .010$ and $.026$ respectively (Table 3). Conclusions: At the end of year 3 there were no differences in outcome between the two groups as measured by shelf exam scores. However, the mean grades in family medicine and psychiatry were lower in the pilot group.

Session II

Faculty Development in Quality Improvement: Building Human Capital

Aleece Caron PhD, Metrohealth Medical Center, Case Western Reserve University

Charles Clark MD, Indiana University School of Medicine

Mamta Singh MD, Louis Stokes Cleveland Veterans Affairs Hospital, Case Western Reserve University

Anna Maio MD, Creighton University School of Medicine

Rationale: Today, healthcare quality data are everywhere and few medical students, residents, and faculty have been taught how these data vary in their collection, analysis and interpretation. In turn, this makes it very difficult to initiate, evaluate, and sustain any meaningful improvement activities. Moving forward, providers will need to regularly take a fresh look at their performance data, including clinical quality, patient experience, and cost to ask what can be done to provide additional value, serve their communities better, and become higher performers. Since these requirements are new to most practicing providers, many need to learn the science of improvement and cannot provide adequate mentoring to residents and students. CQI initiatives are becoming particularly important for all specialties and are required activities for maintenance of certification and for many residency training programs. With time limited certificates came a paradigm shift, from processes focused on teacher centered knowledge acquisition to learner centered knowledge application. Practitioners need to demonstrate continual professional development, a dedication to lifelong learning, a commitment to self-assessment and to ongoing practice evaluation. While it is not a part of all medical school training programs, many schools are experimenting with methods to add CQI training to their curricula. All levels of medical education struggle with this because there are very few individuals in medicine who know how to coach teams and teach CQI methods. The purpose of this panel discussion is to 1) review the pertinent literature 2) discuss the need to train providers in CQI methods and coaching, 3) share success stories and challenges, and 4) discuss how to build human capital in CQI. Objectives: The purpose of this discussion is to generate ideas for how to train more faculty in quality improvement coaching. Panelist will discuss how to successfully implement QI efforts for UME, GME and CME. Attendees and panelist will discuss ways to enhance this education so that systematic, comprehensive education can occur at every level of training and how faculty can coach trainees in CQI. Methods/Session: Our discussion will center on describing our methods for developing curricula for residents and faculty, and describe our efforts in detail, including our successes and challenges with developing, implementing and evaluating teaching others to teach CQI.

Why Teaching Service Excellence to Residents Will Be The Best Thing You Ever Did For Yourself!

Charles Ellis MD, University of Michigan Medical School

Service Excellence (also called Customer Service) is a critical competency for physicians; at a minimum, service excellence is a component of the ACGME competencies Patient Care, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, and Professionalism. Best taught during residency, training in providing good service leads to a more efficient and happier workforce. Service Excellence forms a foundation for other projects, including use of "lean" (Toyota manufacturing) principles and safety improvements. After instituting Service Excellence Programs, Program Directors will spend more time in education and less in problem-solving. Furthermore, studies have shown that patient satisfaction is driven largely by patient experiences, even more than patient outcomes. There is evidence that quality medicine and patient satisfaction are one and the same. Residents who understand how to provide fabulous service can take the concepts into their future work, whether in private practice, academics, or other positions.

Teaching, Assessing and Remediating Clinical Reasoning Skills

Elizabeth Baker MD, MHPE, Rush Medical College of Rush University

Cynthia Ledford MD, The Ohio State University College of Medicine

Beth Liston MD, The Ohio State University College of Medicine

Physicians are expected to accurately assess and diagnose patients. To do so requires that a physician use a complex combination of analysis and pattern recognition, apply it to a specific context, consider the degree of uncertainty and accuracy of input information, and arrive at a most likely diagnosis. This workshop is designed for teaching physicians and medical educators interested in increasing their ability to explicitly articulate clinical reasoning and to recognize the points at which a learner may succeed or struggle in pursuit of this skill. We will

present a method of teaching case-based reasoning that begins with a problem list from which a one sentence summary and differential is generated. This is then explicitly linked to a plan to diagnose and to treat the patient. The workshop will highlight key challenges to reasoning and knowledge organization faced by physicians-in-training from the first and second years in medical school into residency. Participants will be asked to evaluate examples of written documentation to determine how well learners reason and to establish a consensus as to what defines excellent, average and inadequate reasoning. Potential remediation strategies for learners with deficits in reasoning will be explored.

Clinical Skills Remediation for Medical Students

Audem Ekpenyong MD, Rush Medical College of Rush University
Toshiko Uchida MD, Feinberg School of Medicine, Northwestern University
Janet Riddle MD, University of Illinois-Chicago
Heather Heiman MD, Feinberg School of Medicine, Northwestern University
Elizabeth Baker MD, Rush Medical College of Rush University
Keith Boyd MD, Rush Medical College of Rush University

Clinical skills remediation for medical students is challenging. In this workshop participants will be introduced to the clinical skills remediation processes at Rush Medical College (RMC) and Northwestern University Feinberg School of Medicine (NUFSM). Participants will assess a student's performance in a videotaped standardized patient encounter. They will then be introduced to the RMC remediation worksheet which includes a student self-assessment, faculty assessment and individual learning plan. Participants will see how the worksheet can be used to understand the students' perspectives of their performance and how NUFSM included the worksheet in an individualized remediation activity. Finally, participants will develop an individual learning plan for the student.

Integration of a Clinical Decision Support System to Teach and Assess Medical Student Diagnostic Reasoning

John Tomkowiak MD, Chicago Medical School at Rosalind Franklin University
James Carlson MS, PA-C, Chicago Medical School at Rosalind Franklin University

Diagnostic reasoning is central to a clinician's ability to deliver appropriate patient care. One suggested strategy to minimize the potential for diagnostic error is to employ the use of a clinical decision support system (CDSS). Isabel®, a web-based CDSS, works by engaging users to enter a query based on pertinent clinical information, searches the medical literature, and returns a list of DDX to reflect on. While not well studied in educational settings, exposure to a CDSS, especially during simulated training vignettes, may be a valuable method to help trainees develop diagnostic reasoning skill and become familiar with how to informatics tools in the context of a patient case. The goals of this session are to: -Understand the features of the Isabel clinical decision support system and how it might be used to engage diagnostic reasoning and the use of informatics tools in educational settings. -Describe the results of a pilot study using Isabel to engage and assess medical student diagnostic reasoning during simulated training encounters. -Identify the benefits and challenges to integrating a clinical decision support system during simulated training encounters as a strategy to teaching and assess diagnostic reasoning in medical students.

Course Redesign - Opportunities to Create Significant Learning Experiences in Medical Education

Marc Raslich MD, Wright State University Boonshoft School of Medicine
Patricia D Hudes MSIT, Wright State University Boonshoft School of Medicine

In medical education competencies for knowledge and skills are necessary but not sufficient for the education of a physician. L. Dee Fink's Significant Learning taxonomy and Integrated Course Design defines learning in terms of change: "For learning to occur, there has to be some kind of change in the learner. No change, no learning. Significant Learning requires that there be some kind of change that is important in terms of the learner's life." This presentation will describe the redesign of the Clinical Decision Making course for second year medical students applying Fink's Significant Learning and Integrated Course Design approach and how this may yield significant benefits based on the following premises: • Improved understanding of course design processes allows teachers to creatively design courses for significant learning • Integrated course design in medical education has the potential to improve the educational experiences for both the teacher and the learner.

RIME Oral Abstract Presentations Session 2

Relationship of Clinical Skills Examinations to Residency Program Director Ratings: Results of a Multi-Institutional Collaboration

Anthony Paolo PhD, University of Kansas School of Medicine

Heather Hageman MBA, Washington University School of Medicine

Brian Mavis PhD, Michigan State University College of Human Medicine

Jon Veloski MS, Jefferson Medical College

Donna Jeffe MD Washington University School of Medicine

Objective: To determine the relationship between medical school clinical skills (CSE) examinations and residency program director ratings. Methods: Data from four medical schools' 2006-2008 graduating classes were aggregated to increase reliability and external validity. Three CSE exam scores [history, physical exam, and interpersonal communication (IC)], and clerkship grades were equated across schools by converting each school's score to T-scores (Mean = 50, sd = 10). Program director ratings were equated by each school conducting a principal components analysis with varimax rotation, which identified two factors (clinical knowledge/skill and IC); and then factor scores were computed and converted to T-scores. Analyses: Separate hierarchical linear regression analyses using program director factor scores as dependent variables were conducted. Independent variables were gender, race (Caucasian/non-Caucasian), school type (public/private), 3-digit first-attempt Step 1 and Step 2 CK scores, Step 2 CS (pass/fail), clerkship grade T-score, the three CSE T-scores and selected two-way interactions. Results: Sample size was 799 (53% male, 73% Caucasian, and 28% public institution). Program director IC ratings were positively correlated with clerkship GPA ($p < .0005$) and CSE IC scores ($p = .03$). Higher program director clinical knowledge/skill ratings were correlated with clerkship grades ($p < .0005$) and Caucasian race ($p = .005$). A significant gender-by-race interaction emerged ($p = .04$), with non-Caucasian males rated lower than the other groups. Step scores were not significantly associated with program director ratings. Conclusions: Higher clerkship grades were related to higher program director clinical knowledge/skill and IC ratings. Medical school CSE IC performance was also positively correlated with program director IC ratings.

Proficiency-Based Open Surgical Skills Curriculum Improves Novice Surgeon's Performance

Paul G. Gauger MD, University of Michigan Medical School

Adam C. Frischknecht MSE, University of Michigan Medical School

Melissa E. Brunsvold MD, University of Michigan Medical School

Rebecca Minter MD, University of Michigan Medical School

Linnea S. Hauge PhD, University of Michigan Medical School

Purpose: Surgical training benefits from defined skill curricula and assessments based on proficiency-targets. Previous efforts have concentrated on laparoscopic skills, while open surgical skills are critical for all surgical procedures and specialties. Methods: 21 interns from 7 surgical specialty residency programs underwent proficiency-target based practice and assessment for 12 defined open skills involving suturing and knot-tying. Baseline performance was established by pre-testing followed by feedback and instruction from experts. After 4 months of self-guided practice using provided instruments and models, expert post-testing measured the level of performance accomplished. A scoring system determined three threshold levels of achievement based on task time and occurrence of defined errors. Gold targets were established by faculty performance. Data were compared using paired t-tests and are expressed as mean \pm s.d. Results: Expressed as group mean of task time performance across all 12 tasks, significant decreases in task time were measured. Reported as percentage of threshold achievement levels met upon testing, the group achieved $99 \pm 41\%$ of the silver level time target at pre-test vs. $167 \pm 68\%$ at post-test ($P < 0.001$). The group achieved $55 \pm 19\%$ of the gold level time target at pre-test vs. $92 \pm 30\%$ at post-test ($P < 0.001$). Identified errors decreased an average of $29 \pm 23\%$ between pre-test and post-test ($P = 0.004$). Conclusions: An open surgical skills curriculum based on standardized tasks and clearly-communicated proficiency-targets, combined with self-guided practice, resulted in demonstrable individual and group attainment of open surgical skills.

Testing Surgeons' Use of the Briefing, Intraoperative Teaching, Debriefing (BID) Model for Teaching in the Operating Room

Lee Radford BS, Southern Illinois University School of Medicine
Reed Williams PhD, Southern Illinois University School of Medicine
Nicole Roberts PhD, Southern Illinois University School of Medicine

Testing Surgeons' Use of the Briefing, Intraoperative Teaching, Debriefing (BID) Model for Teaching in the Operating Room Lee Radford, BS, Reed Williams, PhD, Nicole Roberts, PhD Southern Illinois University School of Medicine Objectives: As duty hour restrictions limit the exposure residents have to the operating room, teaching becomes imperative and a good model for deliberate teaching in the OR is essential. The Briefing, Intraoperative teaching, Debriefing (BID) model provides a framework to encourage specific, goal oriented instruction in the operating room. We sought to determine whether or not surgeons would use our model when teaching in the operating room. Methods: We performed a pre-post pilot study of resident report and observation of surgeon's teaching behaviors. For two months prior to teaching surgeons to use the BID model, two researchers interviewed residents after randomly selected operations (n=32) to assess surgeon teaching behaviors. In month 3, a self-selected subset of surgeons attended training in the BID model. After the training, the two researchers interviewed residents and observed operations to assess teaching behaviors (n=32). Teaching behaviors were compared pre and post the teaching intervention. Results: Preliminary analysis comparing pre and post intervention interview/observation showed that trained surgeons changed their teaching behaviors. This effect spanned the two month observation period. Educational Significance: Surgeons who teach have long sought an easy, useable approach to streamline their teaching and make it efficient and effective. Surgeons used two of three essential elements of the BID model after a short intervention, suggesting that this model has potential for addressing the needs of teaching surgeons.

Systems Based Practice In An EM Clerkship: Is High-Fidelity Simulation Or Self-Directed Log Books A Better Teaching Tool?

Michael Takacs MD MS, University of Iowa Carver College of Medicine
Michelle Krupp MS, University of Iowa Carver College of Medicine
Anna Ostrander MD, University of Iowa Carver College of Medicine

Objectives- The objective of this study was to compare high fidelity simulation versus self-directed log book for teaching systems based practice (SBP) to fourth year medical students taking a four week selective in emergency medicine. Methods- At the start of the clerkship, all students were given a 17 question survey with a 5 point rating scale on various aspects of SBP. The students were then assigned to either the simulation group or the log book group. The simulation group was then given specific scenarios designed to teach SBP. The log book group was given a detailed log book asking them to record various aspects of SBP on 10 patients they had seen during their rotation. At the end of the clerkship, the 17 question survey was taken again. Results- 24 students were in the simulation group. 26 were students in the log book group. A t-test analysis was performed on each question in the survey. In pre/post analysis of each group, 15 out of 17 questions showed a significant improvement with a $p < 0.05$. A question regarding health care information was not significant in both groups. Being a patient advocate was only significant in the log book group ($t=2.5$ and $p < 0.01$). Being part of a team was only significant in the simulation group ($t=2.0$ and $p < 0.04$). Discussion- High-fidelity simulation and log books provide methods to teach systems based practice in an emergency medicine clerkship. Log books have the advantage of teaching patient advocacy. Simulation has the advantage of teaching teamwork.

Session III

Teaching Electives for Fourth-Year Medical Students

Kristi Ferguson PhD, University of Iowa Carver College of Medicine
Linnea Hauge PhD, University of Michigan Medical School
Katie Huggett PhD, Creighton University School of Medicine
Deborah Simpson PhD, Medical College of Wisconsin
Jeffrey Pettit PhD, University of Iowa Carver College of Medicine

Background: As demands on residents' time increase, providing teaching skills instruction before they begin

residency may help them be more effective and efficient in their teaching from the outset. Other benefits might include encouraging students to consider academic medicine as a career, encouraging students to think about teaching as a scholarly activity, and providing an area of concentration for interested students. There is limited information in the literature, however, regarding fourth year medical student focused teaching electives. This session will address that gap by focusing on three primary objectives. Objectives: After participating in this session, attendees will be able to: (1) Describe different models for fourth-year medical student teaching electives; (2) Understand the benefits and challenges involved in implementing such a rotation; (3) Identify curriculum components that would be effective at their own institutions Topic Outline and Session Format: Following a brief introduction/overview of session, moderator will brainstorm with the audience the key questions they would like answered by the conclusion of the session. Each presenter will describe then specifics of the rotation, including the curriculum, evaluation mechanisms, and cost/benefits to the institution. This will be followed by a general discussion. The audience-generated questions will be reviewed focusing on those questions not yet addressed by the panel during their presentations. Common areas of convergence and areas of divergence will be identified and discussed. The moderator will summarize the key themes and future directions based on the panelists' remarks and audience discussion.

“Educational Technology for the Next Decade: Tales from the Trenches”

Lauren Taylor MEd, Feinberg School of Medicine, Northwestern University

Larry Hurtubise MA, The Ohio State University College of Medicine

Geraud Plantegenest MA, Michigan State University College of Human Medicine

Elizabeth Ryan EdD, Feinberg School of Medicine, Northwestern University

There's a lot of buzz today about how to use new instructional technologies in medical education. Medical students, who are mostly of "Generation Y" have been brought up their entire lives with computers and are able to multitask and learn information from tools such as blogs, wikis, social networking, video conferencing, online modules, and iPhone or iPod applications. Some of these technologies have resulted in faculty changing the way they teach. Many medical schools are piloting or launching the same technologies concurrently and sharing these experiences and "lessons learned" will be helpful to other schools considering such technologies.

The BID Model for Teaching in Surgical and Procedural Specialties: A Train the Trainer Workshop

Nicole Roberts PhD, Southern Illinois University School of Medicine

Reed Williams PhD, Southern Illinois University School of Medicine

Hilary Sanfey MB BCh, Southern Illinois University School of Medicine

Lee Radner BS, Southern Illinois University School of Medicine

Teaching in the operating room is characterized by lots of talk, some of it utilitarian, some of it focused on relationships within the operating room, and much of it directly focused on teaching a particular skill or approach. Likely these observations are true in other procedural settings. Although physicians may be generous teachers, there are approaches to teaching that may help them ensure that their learners carry lessons away from each procedure they perform, whether it's for the first time or the 100th time. The Briefing, Intraoperative Teaching, Debriefing (BID) model for teaching was initially developed for teaching in the operating room, but can be applied to various procedural specialties (i.e. gynecology, interventional radiology, gastroenterology, etc.) It is a theoretically grounded, easily remembered, easily enacted approach to structuring teaching. Using it allows both learner and teacher to focus instruction on a particular learning objective, thereby ensuring that along with any informal or incidental learning, at least one piece of deliberate teaching occurs per procedural encounter. This workshop is designed to teach generalists in medical education how they can teach their faculty to use the BID model.

TBL 101 Workshop: How to Reinvigorate Your Medical Science Classroom!!

Michael Petty PhD, Rush Medical College of Rush University

Gabriella Cs-Szabo PhD, Rush Medical College of Rush University

The Team-Based Learning (TBL) movement is rapidly expanding within higher education. The purpose of this workshop is to introduce the TBL instructional method to medical educators who are interested in forging a learner-centered culture and increasing "active" learning in their courses. The workshop is designed to introduce participants to the basic principles and methods of TBL and help them explore where and how they can be used in medical education. It teaches by example - using a TBL format to illustrate the key concepts and methods inherent in TBL. Participants will be assigned to small groups (5-7) for the experience. They will briefly study a 3-

page paper to emulate the first phase – Content Delivery. They will demonstrate Readiness Assurance by completing a short Individual Readiness Assurance Test (IRAT) quickly followed by a group test on the same items (GRAT). These both are preparation for the 3rd phase, Application, where they apply their acquired knowledge. This session is fast-paced and enjoyed by all participants. Participants' questions will arise throughout the session and the facilitators will provide only limited assistance during the TBL session; however, all questions will be answered by the end. After total immersion in TBL, participants will be able to identify areas within their curriculum where the method can provide a benefit to their students and more enjoyment to the teacher.

Interprofessional Education and Cultural Awareness for First Year Health Professional Students

Cathy Lazarus MD, Chicago Medical School at Rosalind Franklin University

Sarah S. Garber PhD, College of Health Professions and Chicago Medical School at Rosalind Franklin University

Brandi N. Woodard MS, PA (ASCP), College of Health Professions at Rosalind Franklin University

Research has shown that interprofessional practice improves patient outcomes and professional satisfaction in both primary and specialty care. Increasingly medical schools are incorporating interprofessional educational experiences into the curriculum. In 2008, Rosalind Franklin University (RFUMS) added a component addressing culture in healthcare to a required first year interprofessional teams course. The course is taught in interprofessional groups of 14-16 students with mentors from across the university community. Topics include: personal and familial awareness, health and healing traditions, health disparities, culturally comfortable patient centered interviewing and patient education including health literacy, and the correct use of trained interpreters in the health care setting. Participants in this interactive session will discuss the essential elements of a successful interprofessional course, share lessons learned at RFUMS, and develop ideas for their home institutions.

Beyond Ask Me 3: Strategies for Teaching about Health Literacy

Stuart Slavin MD, MEd, Saint Louis University School of Medicine

Health literacy is a major problem affecting the health and well being of a large proportion of the US population. Some efforts have been made in developing curricula for medical students and practicing physicians but new initiatives are needed to help physicians communicate more effectively with their patients. In this session after a brief introduction, discussion of the following questions relating to curricular development addressing the problem of health literacy will be conducted. •What educational principles should be followed in developing health literacy curricula for medical students, residents, and physicians? •What teaching formats are likely to be most effective in influencing behavior? Should the topic of health literacy be woven into more general teaching about doctor-patient communication and if so how? •What is the appropriate timing of interventions across the educational continuum? •What are the barriers to curricular implementation and how can they be overcome? Audience members will be encouraged to share their experiences in developing curricula in this area.

Collaborative Planning and Implementation of an Inter-departmental Faculty Development Program for Preceptors of Medical Students in Ambulatory Settings

Keith Boyd MD, Rush Medical College of Rush University

Sharon Sholiton MD, Rush Medical College of Rush University

Viju John MD, Rush Medical College of Rush University

Maria Brown MD, Rush Medical College of Rush University

Clinicians in ambulatory settings provide increasingly important education for medical students while under greater productivity demands. Providing needed faculty development to these busy physicians has always been problematic, especially if the physicians are off-site. The Rush directors who administer educational experiences in the ambulatory setting share the common challenge of providing effective faculty development. Although the content and structure of the ambulatory experiences differ, faculty need development in a number of core areas. Rush ambulatory rotations include a primary care experience for M1 and M2 students and many of the core clerkships for M3 students. The directors collaborated to plan and implement an annual faculty development program for these preceptors. This new program addressed a common problem in a unique way and has been judged, based on participation and post-program satisfaction surveys, to be significantly more successful than past programs with the same purpose. Because effective faculty development is a vexing problem common to most medical schools, the Rush group is eager to share this program, both its successes and short-comings, and to provide a forum for participants to discuss faculty development for preceptors in the ambulatory setting. This discussion group will present the process through which the new Rush faculty development program was

conceived, from the identification of the issues and hurdles through the collaborative development and implementation of the inter-departmental annual program. Participants will be able to adapt the Rush approach to create a similar program at their own institutions.

Clerkship Administrators' SIG: Boomers, Xers and Ys: Facilitating Interactions that Build Strong Working Relationships

Mary Beth Dunning MS, University of Wisconsin School of Medicine and Public Health

Suzan Morschauer, University of Wisconsin School of Medicine and Public Health

Virginia H. Cleppe AM, Medical College of Wisconsin

Christopher Stillwell MA, University of Wisconsin School of Medicine and Public Health

Rationale: Literature and workplace discussions give much attention to the differences and similarities among the Baby Boomer, X, and Y generations. Clerkship administrators are uniquely situated to observe the characteristics of several generations of individuals at various stages in their medical careers, from undergraduate students through experienced faculty members. Administrators frequently find themselves faced with seemingly conflicting perceptions and demands of individuals from two or three generations, and need to know how to negotiate these differences in ways that enhance learning, meet program requirements, and build and maintain productive working relationships with everyone, including students, paid faculty, volunteer faculty, both within and beyond the institutional borders. Objectives: Participants will 1. develop appreciation for varying perspectives based on generational differences; 2. identify strengths inherent in each generational perspective; 3. be able to identify common characteristics of each generational viewpoint, and 4. take away specific strategies for resolving intergenerational conflicts that may arise in the context of medical training. Methods and content: Presenters will provide basic overview of the three generations, comparing and contrasting specific characteristics. Learning styles and communication issues across generations will be emphasized. The majority of the session will focus on exploring critical incidents, including examples provided by the presenters, followed by scenarios provided by the participants. This exploration will involve discussion to identify differing perspectives each generation might bring to the table, and strategies for communicating effectively.

RIME Oral Abstract Presentations Session 3

Development and Initial Assessment of a Curriculum to Teach the Performance of Pediatric Otoloscopy to Medical Students

Caroline Paul MD, University of Wisconsin School of Medicine and Public Health

Craig L. Gjerde PhD, University of Wisconsin School of Medicine and Public Health

Gwen C. McIntosh MD, University of Wisconsin School of Medicine and Public Health

Objective: While the performance of pediatric otoscopy is an essential skill for medical students, curricula are limited. We aimed to develop and assess a curriculum in pediatric otoscopy. Methods: A needs assessment of our students showed a preference for a "hands-on training lab" to increase otoscopy skills. Based on ePROM content, a curriculum was developed as a 2 hour lab, incorporated into the pediatric clerkship. Objectives focused on the ear exam approach and interpretation of tympanic membrane findings. "Hands-on training was accompanied by the use of a skill checklist and mannequins of varying age. The checklist was demonstrated and then, students practiced their skills and received feedback. Pre- and post-intervention written tests were used to assess knowledge and skill gain. Results: The intervention was performed on 21 consecutive students. In addition, a subset of 8 students already assigned to clinic sites performed ear exams on their clinic patients. Their preceptors assessed their skills before and after the intervention using the skill checklist. There was a statistically significant difference ($p < 0.01$ on paired t-test) between the pre- (mean 13.5) and post- (mean 22.5) intervention scores on the written test (average gain 9.0 points). For the students who performed exams on their patients, there was a statistically significant difference ($p < 0.01$ on paired t-test) between the pre- (mean 12.1) and post- (mean 20.0) intervention checklist scores (average gain 7.9 points). Conclusions: A curriculum for performance of otoscopy was successfully implemented during the pediatric clerkship. Preliminary data indicates knowledge and skill gain including gain demonstrated in actual patient encounters.

Perceptions of Medical Students Regarding Their Learning Experience of the Pediatric Ear Exam During a Pediatric Clerkship

Caroline Paul MD, University of Wisconsin School of Medicine and Public Health

Craig L. Gjerde PhD, University of Wisconsin School of Medicine and Public Health

Objective: Pediatric ear exam curricula are limited. Currently, medical students are to acquire this skill mainly through clinic experience. We aimed to assess students' perceptions of their learning experience with the ear exam. Methods: A Likert-type web-based survey was administered to all medical students at the end of their pediatric clerkship. The survey focused on expectations, preferred learning format, and attending teaching behaviors. Results: Response rate was 83% (66/88 students). Ninety-seven percent of students expected to learn how to perform the ear exam during their clerkship. Seventy-three percent reported anxiety in performing the exam and 74% desired to have acquired more clinical skills. To increase skills, students preferred a mini-lab with hands on training (89%) over lectures (24%) [chi-square= 57.1, $p < 0.05$]; they preferred the mini-lab (89%) over web-based learning (44%) [chi-square = 30.7, $p < 0.05$]. Ninety-seven percent of students reported that an attending demonstrated the ear exam to them (mean = 3.9 times), 94% reported that an attending observed them perform an exam (mean= 3.8 times), and 86% reported receiving feedback from an attending on their exam (mean = 3.1 times). Eighteen percent reported a zero in one of those three areas. Desire for more clinical skills was significantly correlated (Pearson coefficients= -0.27 to -0.66, $p < 0.05$) with lower ratings on all three attending teaching behaviors. Conclusions: Although given attention to, students still reported anxiety and desire to increase their ear exam skills at the end of their clerkship. More deliberate and improved teaching behaviors and use of active learning methods are likely to enhance student learning.

Laying the Foundation for the Future of Health Care: The Evolution of Medical Students' Beliefs about Health Care Teams

Nancy Myers PhD, Northeastern Ohio Universities Colleges of Medicine and Pharmacy

Objective: Effective health care in the 21st century must be patient-centered and delivered by interprofessional teams. An implicit (but unsupported) assumption is that medical students value and are ready to participate in team-based care. This study documents the evolution of medical students' beliefs about health care teams over time. Methods: Baseline surveys were distributed in 2007 to all medical students (N = 453, response rate = 92%), including the "Attitudes Toward Health Care Teams Scale" (Heinemann, et al., 1999, modified by Leipzig, et al., 2002). Gender, experience with health care teams, and presence of friends/family members with training in the health professions were documented. Class of 2010 students continue to be tracked annually with the same survey. Results: Reports about the value of teams remains consistent and positive, while perception of team efficiency declines and belief that physicians can overrule teams increases from the first to the fourth year of school. Further analysis is underway and will be presented to evaluate how students' background characteristics influence these trends. Conclusion: Medical students' beliefs about the value and efficiency of teams evolve over time, and are most positive early in their curriculum. Educational significance: These findings suggest that to build a stronger foundation for team-based care, educators should focus on activities that expose students to the fundamentals of team-based care early in the curriculum and continue to reinforce these concepts through clinical experiences, particularly during clerkships, in order to avoid degradation in attitudes about teamwork in health care.

Measuring the Natural History of Empathy, Cynicism, Burnout, Stress, Cohesion, Psychological Safety, Learning Environment, Quality of Life and Residency Preference of Medical Students

Rollin Nagel PhD, The Ohio State University College of Medicine

Catherine Lucey MD, The Ohio State University College of Medicine

Daniel Clinchot MD, The Ohio State University College of Medicine

Judith Westman MD, The Ohio State University College of Medicine

Dave Way MEd, The Ohio State University College of Medicine

Purpose: We lack information about empathy and related constructs in medical school matriculates. Are students empathic and humanistic during their first two years of school and become cynical after exposure to overtired and overworked residents and faculty? Or do cynicism and lack of empathy have its roots during the preclinical years? The purpose of this longitudinal assessment is to measure the level of empathy, cynicism, burnout, stress, cohesion, psychological safety, learning environment, quality of life and residency preference as students progress through medical school. Methods: On-line assessments of OSU medical students using end-of-year (EOY) surveys and at entry are solicited. Student empathy, personal distress, and perspective taking (Interpersonal Reactivity Index), exhaustion, cynicism and personal efficacy (Maslach Burnout Inventory Student Survey), stress (Perceived Stress Scale), emotional climate, nurturance, student-student interaction, meaningful learning experience, flexibility (Learning Environment Questionnaire), cohesion (Perceived

Cohesion Scale), 10-item Quality of Life, Psychological Safety, and top residency specialty choices are currently being captured each year and, when appropriate, at entry. Two-way repeated measures ANOVAs have assessed changes among classes and across time. Results: These assessment instruments have previously demonstrated reliability and validity. Currently two years of data from three classes at OSU have been collected. Many of the ANOVAs demonstrate significant interactions (differences across time among classes) with additional time and/or class differences. Conclusions and Significance: Many of the differences were a result of changes from medical school entry to EOY1. Future EOY assessments may clarify class differences and used to study the impact of major curricular changes.

Longitudinal Assessment of Empathy, Cynicism, and Stress in Medical Students

Rollin Nagel PhD, The Ohio State University College of Medicine

Catherine Lucey MD, The Ohio State University College of Medicine

Daniel Clinchot MD, The Ohio State University College of Medicine

Judith Westman MD, The Ohio State University College of Medicine

Dave Way MEd, The Ohio State University College of Medicine

Purpose: There are concerns that medical students' empathy may actually decrease during medical school giving rise to cynicism and burnout. There is little information about these constructs in matriculates of medical school and when or if the decline of empathy and increase in cynicism occurs. The purpose of this study was to measure the level of empathy, cynicism, and burnout in entering medical students and assess its natural history during medical school. Methods: This report is based on a 2-year longitudinal assessment of three classes of OSU medical students using end-of-year (EOY) surveys and also at entry for one class. Student empathy and personal distress (Interpersonal Reactivity Index), exhaustion, cynicism and personal efficacy (Maslach Burnout Inventory Student Survey), and stress (Perceived Stress Scale) were assessed in medical students across years and between classes. Two-way repeated measures ANOVAs were performed to determine class and year to year differences. Results: The ANOVAs resulted in significant ($P < .05$) interactions for these measures. Post hoc analyses for entry to EOY1 indicated significant ($P < .05$) increases in distress, stress, cynicism, emotional exhaustion, and personal efficacy. There was less exhaustion and more personal distress for EOY1 to EOY2. EOY2 to EOY3 indicated less empathy and less distress. Comparisons between classes yielded many similar results. Conclusions and Significance: Many of the differences were a result of changes from medical school entry to EOY1. The decrease in empathy from EOY2 to EOY3 between and within years is notable. Additional future EOY assessments are needed to clarify changes across years.

Saturday Concurrent Session Abstracts

Session I

Professionalism Education: Getting to the top of Bloom's Taxonomy

Larry Hurtubise MA, The Ohio State University College of Medicine

Stephanie Dreher M2, The Ohio State University College of Medicine

Cynthia Ledford MD, The Ohio State University College of Medicine

Sheryl Pfeil MD, The Ohio State University College of Medicine

In the digital age professionalism education faces new challenges and opportunities. Web 2.0 technology and Social Networking sites make it increasingly common for individuals to connect with others while creating and posting content on the internet. Perhaps in a reaction to inappropriate use of these technologies, initial educational efforts seem to focus on developing policies and educating students on the pitfalls of inappropriate behaviours instead of leveraging the strengths of these tools to move students to the upper levels of Bloom's Taxonomy during professionalism education. At The Ohio State University College of Medicine students are encouraged to be a creative part of the professionalism curriculum. During the summer of 2009, medical students used appreciative inquiry to record inspiring stories from practicing faculty physicians. The students analyzed these inspiring stories and grouped them for a showcase. Students also created a "fake" Facebook site used as an interactive example during professionalism sessions covering social networking. The students included examples of inappropriate activities, encouraging a rich discussion of some of the pitfalls of social networking sites. "Project Professionalism" includes a student committee responsible for composing the class oath each class reads at graduation. Students personalize, develop, and present their own goals and principles that they pledge to carry with them into their medical careers. The students who create these learning objects demonstrate an ability to communicate about professionalism issues while the examples and stories seem to resonate better with students in general.

Teaching An Interprofessional Approach to Patient Care: A Problem Based Learning Course

Carol Hasbrouck MA, The Ohio State University College of Medicine

Linda Daley RN, PhD, Ohio State University College of Nursing

Beth Liston MD, Ohio State University Medical Center

Teaching An Interprofessional Approach to Patient Care: A Problem Based Learning Course Interprofessional education has been identified as a key component in quality medical education. This is an on-going area of interest, described by Hall and Weaver as "a long and winding road" (2001), and it relates to the conference theme of "entering a new decade of medical education." An interprofessional problem based learning pilot designed to foster collaboration and teamwork was conducted at The Ohio State University. Faculty from the Colleges of Medicine, Nursing, Pharmacy and the School of Allied Medicine created a PBL case designed to engage students from multiple disciplines. Sixteen students from five disciplines (medicine, nursing, pharmacy, medical dietetics, and physical therapy) met together in this four week, 2 hours per week, course. Three panelists, including a nurse, a hospitalist and an educator, will provide a brief description of the synchronous interdisciplinary pilot. They will describe the course (including methodology, strengths and weaknesses); preliminary outcomes; challenges encountered (e.g., scheduling, structure, level of student, curricular timing); suggestions for change; and next steps. Based on the course evaluations, it appears that this interdisciplinary problem based learning pilot made positive contributions to perceived collaboration and interprofessional understanding. In addition to the course evaluation, two attitude surveys were administered and preliminary data indicate that some attitudes changed and one change was statistically significant. By the end of the session, participants should be able to: discuss institutional approaches to interprofessional education; identify barriers to interprofessional education; describe short and long-term strategies to foster interprofessional education; and describe incentives/resources to facilitate interdisciplinary education.

Green Acres: Leadership That Gets Results

Jeffrey Pettit PhD, University of Iowa Carver College of Medicine

Kathryn Huggett PhD, Creighton University School of Medicine

Deborah Simpson PhD, Medical College of Wisconsin

Janet Riddle MD, University of Illinois College of Medicine

Ernest Yoder MD, PhD, Providence-St. John Hospital

Caren Stalburg MD, MA, University of Michigan Medical School

Heather Hageman MBA, Washington University School of Medicine

Effecting change in academic medicine requires that medical educators effectively lead committees, participate in work groups, and negotiate for resources. Common to these efforts is knowing how to effectively manage people - both vertically and horizontally - within one's organization. To be successful, educators must understand how their own and others' leadership & management styles affect all of these activities. This session will assist leaders in exploring their own leadership style by examining various style types, understanding how their style affects followers, and effectively using their style to identify others' styles in order to effect change.

Reviewing Educational Research

Brian Mavis PhD, Michigan State University College of Human Medicine

Linnea Hauge PhD, University of Michigan Medical School

Faculty with interest and expertise in education are frequently recruited to serve as reviewers of educational research submitted to meetings and journals. Reviewing educational research requires knowledge and skill in analyzing an abstract, critiquing a research proposal, and providing constructive feedback to researchers. The purpose of this workshop will be to provide educators with knowledge and skills related to reviewing educational research abstracts. Upon completion of this interactive workshop, participants will be able to: 1. outline critical components of an educational research abstract, 2. describe factors that contribute to the quality of abstract components, 3. identify the potential range of abstract quality, 4. list practical principles regarding written feedback and reviewer etiquette, and 5. summarize strategies for maintaining consistency throughout a review process. This workshop session will include hands-on practice with the process of reviewing educational research, especially: • components of an abstract (background and purpose, methods, results, conclusions), • evaluating the quality of an abstract and its components, • providing constructive feedback, and • bracketing biases and maintaining rating consistency during a review process.

Curriculum SIG: Longitudinal Integrated Clerkships, A successful Model for Clinical Education

Lori Hansen MD, University of South Dakota Sanford School of Medicine

Kathleen D. Brooks MD, MBA, MPA, University of Minnesota Medical School

Roger Schauer MD, University of North Dakota School of Medicine

Gwen Hallaas MD, University of North Dakota School of Medicine

Rationale: A number of institutions are interested in developing longitudinal integrated clerkships to offer students a clinical clerkship model that fosters continuity relationships with patients, preceptors, and healthcare teams. Our institutions have significant experience with this educational model. We believe the model sequences and guides learning individually and longitudinally and create a workplace learning environment that fosters students' identity formation as physicians. Objectives: At the end of the session, participants will be able to: Understand the curricular structure of successful Longitudinal Integrated Clerkships (LICs) Compare and contrast LICs focused on primary care and rural workforce development Discuss the various options for integration Discuss the resources necessary for successful LICs Discuss various outcome measures for LICs Topic outline: 1. Longitudinal integrated clerkships require significant organization and planning. 2. Collaborative relationships with community preceptors are essential, and require ongoing institutional commitment 3. Integration of the curriculum occurs in various ways. 4. The longitudinal relationship students have with patients, their preceptors and the healthcare team fosters their identity development as future physicians. 5. Ethical erosion is less likely to occur for students in this model. Methods/Session Format: Each program will spend 6-7 minutes discussing their curriculum, including their outcomes and their present and future challenges. Then the session will be open for attendees to engage in discussion with the presenters on this model. Experience: The speakers are all physician faculty directors/deans of longitudinal integrated clerkships in their respective institutions, and collaborate nationally to research the impact of their programs.

Academic Development SIG: How Well Do We Identify Learning Disabilities in Students Having - Academic Difficulties?

Gina Paul PhD, Southern Illinois University School of Medicine

Susan Kies EdD, University of Illinois College of Medicine

The Americans with Disabilities Act was amended at the beginning of 2009; the amendment expanded the definition of a learning disability (LD) to include thinking, concentrating, and reading. It is estimated that 3% of medical students have some type of LD, and it is not uncommon for students to be diagnosed after entering medical school. In 2008 the Academic Development SIG conducted an on-line Accommodations study of CGEA member schools. Of the 24 medical schools responding, 96% reported accommodating 1-5 students at each academic level during 2007-2008 with some type of learning disability (ADD, ADHD, Dyslexia, Verbal Processing and/or Psychological). Additionally, the findings from the SIG's 2006-2007 study on Academic Problems found that students sought assistance for problems than can be associated with LD's such as the management of instructional materials and time, critical thinking, testing, motivation, and concentration. Consequently, it is important to recognize the difference between a student having "normal" academic problems versus a student with an undiagnosed LD. The small group discussion will begin with a ten-minute overview of the two Academic Development SIG's results from the 2008 Accommodations and 2007 Academic Problems studies to guide the attendees discussion regarding how well we identify learning disabilities that can affect student performance and encourage the sharing of expertise, ideas, and solutions in a community of learning.

Research Consultations

A Structured Computer-Based Tool to Improve Feedback and Capture Performance Information: - Identifying and Addressing Barriers to Implementation and Effectiveness

Michael FitzGerald PhD, Cincinnati Children's Hospital Medical Center

Corinne Lehmann MD, MEd, Cincinnati Children's Hospital Medical Center

Purpose – We are implementing a tool to better ensure that learners regularly receive effective feedback and to provide a means for capturing and sharing that performance information. Unlike similar efforts, this tool provides specific guidance for developing an effective corrective, or positive, feedback message. In addition, the tool will be administered electronically, providing a feasible method for collecting individual performance information which could then be used to effectively enhance formative, and perhaps even summative, evaluation efforts. The first phase objective is successful implementation with each resident receive at least one instance of both corrective and positive feedback per week. A second-phase study will follow to determine if the performance information can be used for summative purposes without reducing the regularity and quality of the feedback. **Measures** – At the end of each rotation, residents and faculty members are currently completing a survey to capture their perceptions and suggestions regarding the implementation and effectiveness of the tool. **Results/conclusions** – We plan to present the current implementation status including a review of barriers and any actions taken to address them and look forward to getting additional input from peers and experts. In addition, we hope to obtain additional insight into the potential challenges of using this formative feedback information for summative purposes. **Educational significance** – This tool could serve as a model for medical educators who are currently in need more feasible and effective evaluation methods that can serve both formative and summative purposes.

Validation of the Observed Structured Assessment of Technical Skills (OSAT) Instrument in Simulated Pediatric Rapid Sequence Intubation

Joseph House MD, University of Michigan Medical School

Michele M. Nypaver MD, University of Michigan Medical School

Purpose: Competency in pediatric rapid sequence intubation (pRSI), is an American College of Graduate Medical Education (ACGME) requirement for Emergency Medicine (EM) physician training. pRSI requires cognitive and psychomotor skill on the part of the physician yet few assessment tools are available. Most rely on checklists of critical steps or simply measure outcome (tube in versus out). Validated tools are needed to assess competence in critical procedural skills. The purpose of this project was to: 1) Modify a previously validated surgical assessment tool, the Objective Structured Assessment of Technical Skills (OSATS) Global Rating Scale of Performance for use in pRSI. 2) Validate this instrument in a group of EM residents performing pRSI in a simulated setting. **Methods:** Content validity was completed by a panel of EM and Pediatric EM (PEM) physicians. The OSAT was modified for pRSI in three steps: a) Determination of 7 critical domains of knowledge

and technical skill derived from evidence review b) Assignment of domains to a 5 point Likert scale and c) Development of performance standards for each domain and scale. Raters were trained, practiced scoring and pilot tested the instrument. Validation of the tool will occur during EM residents (PGY 1-4; goal N=48 residents) assessment using the same pRSI infant scenario. Two trained faculty raters assess each resident live and 6-8 weeks later via video tape review. Inter and intra rater agreement of live, videotaped and overall performance of the collection instrument will be measured. Results: Pending completion of study Conclusion: To be determined.

Session II

Faculty Development “On the Fly”, Academic Detailing, and Communities of Practice: Alternatives to Faculty Development Workshops

Janet Riddle MD, University of Illinois-Chicago

Karen Marcdante MD, Medical College of Wisconsin

Marcy Rosenbaum PhD, University of Iowa Carver College of Medicine

Maria S. Cole PhD, Kansas City University of Medicine and Biosciences

Faculty developers are confronted with the challenge of designing timely and effective faculty development activities that go beyond episodic workshops or longitudinal programs such as medical education fellowships. In this workshop, the presenters will provide examples of faculty development that occurs in small amounts of time – during the normal activities of medical college committees and through outreach visits to community preceptors. Faculty development experts are frequently “embedded” as members of medical college committees and can respond to opportunities for “just-in-time” development for the other committee members. Over time, this teaching “on the fly” can accumulate into a substantial amount of faculty development. Similarly, academic detailing, or office visits by educational experts, brings faculty development to volunteer community preceptors who are crucial to the success of educational programs, yet may be unable to attend workshops held at the medical school. We will also present an example of the development of a community of practice composed of graduates of a medical education fellowship who to meet episodically in order to continue instructional and curricular innovation and educational scholarship. The members of this educational community have ongoing needs for professional development and benefit from the support of faculty developers. Participants in the workshop will have the opportunity to begin designing faculty development activities to use in their own setting based upon the models presented.

Measuring Professionalism as a Motivator for Culture Change

Hugh Stoddard PhD, University of Nebraska College of Medicine

Carol R. Thrush EdD, University of Arkansas for Medical Sciences

The topic of professionalism for medical students has been discussed at length in a multitude of venues. This workshop will take the topic beyond theoretical discussions to present examples of how student professionalism and the professional environment for students have been measured at two different medical schools and will discuss how the results have been used to stimulate change in the culture of those schools. Faculty at the University of Arkansas for Medical Sciences developed and validated a survey to measure the professional environment experienced by medical students. This survey has been adopted for use at the University of Nebraska College of Medicine as well. UNCOM had already implemented a system for measuring student professionalism. Both of these measurement instruments were created for the purpose of identifying areas of strength and needs for improvement. Instrument design and data collection will be presented in this workshop, but the emphasis will be on using the data to promote professional behavior. This workshop will focus on the use of the data that were collected by these two instruments to motivate desired changes in individual and institutional behavior. Data can provide a powerful rationale for motivating changes; however, collection and use of such data comes with many caveats. Participants in this workshop will learn strategies for fostering changes based on the experience of these two institutions in measuring professionalism.

Medical Education Research Exchange Session

Practical Implementation of the Core Competencies at a Large Academic Medical Center

Aleece Caron PhD, Metrohealth Medical Center, Case Western Reserve University

Description of Topic and Rationale: All residency programs are required to teach, evaluate and analyze the six general competencies mandated by the ACGME which include Patient Care, Medical Knowledge, Practiced Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism and Systems Based Practice. Every residency program is facing the same dilemma as to how to teach and evaluate the residents in their programs. However, the ACGME has not established guidelines for the facilitation of knowledge or the assessment of knowledge in these competencies. Additionally, the ACGME has requested that programs use creative methods in designing the framework, teaching method, and evaluative techniques that may assist in establishing competency in the six areas. MetroHealth Medical Center (MHMC) is a 752-bed academic medical center affiliated with Case Western Reserve University which serves as the public hospital for Northeastern Ohio. In 2008, the Senior Medical Educator conducted an in-depth assessment of how each program was teaching and assessing the core competencies. While most programs excelled in the areas of patient care and medical knowledge, they struggled to understand how to implement and evaluate the remaining competencies. We created an interdisciplinary competency committee, comprised of 5 program directors, coordinators, and the senior medical educator who was charged with the task of designing curricula to teach, and assess progress in the remaining competencies. The overall goal was to create standardized educational initiatives for the competencies that are difficult to implement and evaluate and that could be used in every training program. We designed curricula and evaluation tools for the following competencies: Practice Based Learning and Improvement (PBLI), Systems-Based Practice (SBP), Communication, and Professionalism. Objectives: By the end of this workshop, participants will: 1. Obtain a working knowledge of how to assess the progress of core competency implementation 2. Begin to develop curricula in several of the competencies that can be applied in their residency program 3. Learn how to measure and track resident progress in the Competencies Topic Outline: The discussion will center on three projects that were developed at Metro. The first part of the discussion will focus on our efforts to address the communication competency. We developed the Observed Structured Competency Assessment of Residents (OSCAR). The OSCAR consisted of 6 modules: writing a discharge note, refilling a narcotics prescription, handling a disruptive patient, giving bad news to a patient, disclosing a medical error, and informing a patient of an abnormal mammogram. Faculty in the department of medicine wrote the scenarios and trained residents to be standardized patients. The second part of the discussion will focus on Continuous Quality Improvement Training and evaluation for residents. The third part will focus on the development of a tool to facilitate knowledge & skills in Systems Based Practice through application in clinical environment. This project focused on the importance of error reporting and how to report errors, designing and implement error reporting system for residents, facilitating the identification of medical error and systems failures in daily practice, and examining error patterns and design system solutions. Session Format: The curriculum for each of these will be described in detail along with the evaluation process and barriers to success. The remainder of the time will be devoted to a group discussion of the implementation, evaluation, and review of the materials. If time permits, participants will analyze an error and discuss system solutions. Materials: For the OSCAR, we will distribute one of the cases and the evaluation form. This is the form that the standardized patients completed on each resident. For the CQI training, we will distribute the Standards for Quality Improvement Reporting Excellence (SQUIRES) guidelines, which provide a framework for reporting and publishing CQI activities. For the error reporting, participants will receive a competency based grid that corresponds to Lucian Leape's(1) taxonomy of errors. 1. Leape L, Lawthers AG, Brennan TA, et al. Preventing Medical Injury. *Qual Rev Bull.* 19(5):144-149, 1993.

Introducing New Medical Students to the Importance of Cultural Awareness through a Book Discussion Group

Keith Boyd MD, Rush Medical College of Rush University

Ivonne Hobfoll MD, Rush Medical College of Rush University

Elizabeth Jacobs MD, Rush Medical College of Rush University

Andem Ekpehyong MD, Rush Medical College of Rush University

Michael Petty PhD, MS, Rush Medical College of Rush University

Rush Medical College has developed a 2-week introductory curriculum (Clinical Skills Intensive – CSI) to better prepare students to be physicians. One of the topics covered is cultural sensitivity and awareness, presenting it as a major focus of the medical school experience. To aid in teaching cultural competence, students were required to read a book prior to arriving on campus – Anne Fadiman's *The Spirit Catches You and You Fall Down*, the story of a Hmong family who moved to the US and their challenges in caring for their daughter's medical condition. An introductory session provided an overview of the book's place in their education, with three small group discussion sessions led by 2 facilitators (1 MD/1 non-MD) from various Rush programs, followed by a discussion by a Hmong physician and a panel discussion by physicians with cross-cultural ties. Student's comment on the experience: Dr. Ku was amazing. I really enjoyed her talk. It gave us a great conclusion to all of the discussions on the book. I also think she just had a great philosophy for practicing medicine. Students' perspectives on the experiences were captured through an evaluation of the sessions. Three questions were asked using a 5-point Likert scale where 1 = SD and 5 = SA. These covered organization, preparation and meeting objectives. Student responses were very favorable on all questions for all sessions, ranging from 4.41 to 4.60. More importantly, students came prepared and were active participants. Participants will be able to incorporate this into their curriculum.

Teaching Feedback Techniques to Medical Students: Using Peer Evaluation at Indiana University School of Medicine – South Bend

Edward E. McKee PhD, Indiana University School of Medicine - South Bend

Stacey A. Jackson MS, Indiana University School of Medicine - South Bend

When evaluating a medical student's performance there are many sources of input that are gathered to render a final course grade - NBME exams, PBL facilitator evaluations forms, OSCEs, etc. However, in most cases an administrator (i.e., course director), teaching faculty, residents, etc. are the main sources of feedback to students. But what about medical students' peers? How valuable is this feedback to a student's performance and should it be weighed with the other evaluation measures in a course? Peer evaluation can be an effective measurement in delineating certain behaviors by medical students that are acceptable or inappropriate particularly in a team environment. Medical students interact with each other in ways that no faculty or resident can measure. In particular peer evaluation can serve as another tool in providing timely and effective feedback to students. Objectives of this session are to: • Describe the peer evaluation process at IUSM-SB. • Demonstrate appropriate critiques and grading of student written feedback. • Discuss peer evaluation implementation strategies. Session outline: • Participants will examine the competency-based curriculum at IUSM and learn about a brief overview of team-based learning and the implementation of peer evaluation. • Participants will pair into teams to simulate the peer evaluation training session used with first year medical students. • Samples of student's feedback reports will be distributed and participants will assist with critiquing the student's written feedback to peers. • Participants will use a grading schema to evaluate the depth and breadth of each student's feedback to peers.

The Community Integration Program: Influencing Medical Students to Become Rural Physicians by Exposing Them to Rural Culture and Health Disparities During Clinical Training Through Service Learning

Kathleen Quinn PhD, University of Missouri-Columbia School of Medicine

Kevin Kane MD, University of Missouri-Columbia School of Medicine

Jana Porter MS, University of Missouri-Columbia School of Medicine

Introduction To help address the health care needs of Missouri, the MU School of Medicine Rural Track Pipeline Community Integration Program (CIP) seeks to integrate students into rural communities to better prepare them for rural living and practice. Project Description CIP is a voluntary program with 3 levels of participation (getting involved, volunteering and service learning) for M3 medical students completing rural clinical rotations. CIP's

goal is to integrate students into rural communities to develop an understanding of rural health, quality of life concerns and to promote the ethic of service as an integral part of professional practice. Community stakeholders develop a “menu” of projects necessary to meet community needs. The CIP coordinator mentors students in designing projects that align community needs with student interest. CIP participants complete self evaluations reflecting on their ability to contribute to community solutions. Students participating at the service learning level are evaluated by their community organization director, write reflexively about their experience and present on project outcomes and community impact. Outcomes Student and director evaluations indicate students can identify community risk factors and health disparity issues; identify strategies for improving health care standards; and communicate about their contributions. Students report their experience influences them to return to rural areas to practice and enhances their cultural knowledge of the communities where they lived and worked. Conclusion CIP complements students’ clinical education and demonstrates the importance of community integration through service learning. Understanding the physician role in the community-at-large may influence students’ choice of rural practice.

ifolio: Faculty-Student Mentorship via a Six Core Competency Infrastructure - in a Next Generation Electronic Learning Portfolio

Gerald Wickham MA, University of Iowa Carver College of Medicine

Joel Gordon MD, University of Iowa Carver College of Medicine

Rick Axelson PhD, University of Iowa Carver College of Medicine

Suraj Yalamuri M2, University of Iowa Carver College of Medicine

Shady Henien M1, University of Iowa Carver College of Medicine

The Carver College of Medicine has initiated an electronic learning portfolio (e-portfolio) project that brings faculty mentorship to students centered on learning activities based on the ACGME Six Core Competencies. This project was implemented in fall 2009, after an extensive task force review of literature and best practices, and significant time spent customizing the software interface within the ifolio framework created by The University of Iowa Instructional Technology Services group. E-Portfolios that have successfully achieved faculty mentorship are rare in the literature. This workshop will cover faculty/student recruitment and orientation, showcase the CCOM ifolio interface, report initial outcomes and allow participants to discuss learning activities in an e-portfolio, as well as faculty development issues for e-portfolio mentorship.

RIME Oral Abstract Presentations Session 4

Medical Student Feedback on Health Behavior Counseling Sessions Using a Standardized Patient Instructor

Heather Wagenschutz MA, University of Michigan Medical School

Joel Purkiss PhD, University of Michigan Medical School

Paula Ross MA, University of Michigan Medical School

Jun Yang MS, University of Michigan Medical School

Sarah Middlemas MPH, University of Michigan Medical School

Monica Lybson MD, University of Michigan Medical School

Objectives Physicians who engage and collaborate with patients in the area of lifestyle changes have an impact on patient success. Many medical school curricula do not provide opportunities for formal training. The purpose of this study was to explore the potential for improving perceived ability and comfort levels of third-year medical students in health behavior counseling (HBC) interactions using Standardized Patient (SPIs) Instructors. Methods HBC SPI encounters occur during the internal medicine clerkship. To prepare students for the collaborative care approach, students review written materials on health counseling, tobacco cessation (TCC), nutrition/physical activity (NPA) and watch web-based video modules. Students are asked to complete an online post-encounter evaluation which uses a one to five (1-5) point Likert scale. Higher values indicate greater levels of agreement. Results Pre-encounter comfort levels for NPA had a mean of 3.79 (SD=.88, n=200). Post-encounter comfort increased to a mean of 4.48 (SD=.59, n=199). This mean increase of 0.69 was statistically significant (paired-sample $t=12.65$, $df=198$, $p<0.001$). Pre-encounter comfort levels for TCC had a mean of 3.53 (SD=.94, n=199). Post-encounter comfort increased to a mean of 4.44 (SD=.59, n=199). For this .91 increase, the change was found to be statistically significant (paired-sample $t=12.65$, $df=198$, $p<0.001$) as well. Educational Significance Offering Health Behavior Counseling with SPIs during medical

school can help boost comfort and perceived ability. SPIs are a viable approach to HBC, which ensures that the opportunity is available and that students receive meaningful feedback on their performance.

Teaching and Assessing Students' Communication and Clinical Decision-Making During Phone Consultations with Nurses

Linnea S. Hauge PhD, University of Michigan Medical School

Maggie L. Boehler RN, MS, Southern Illinois University School of Medicine

Eamonn P. Arble MS, University of Michigan Medical School

Cathy J. Schwind RN, MS, Southern Illinois University School of Medicine

Amanda O'Reilly RN, University of Michigan Medical School

Melissa E. Brunsvold MD, University of Michigan Medical School

Background. One of the challenges of a surgery intern's first days is responding to nurses' pages about patients. The purpose of our study is to assess learners' performance in phone consultations with nurses. **Summary of Work.** Ten simulated cases for physician-nurse consultations in surgery ("mock pages") were developed. Each mock page included a clinical decision-making assessment and semantic differentiation scale. A nurse paging team completed 12 hours of training. M4 students (n=30) responded to nurse pages, completing 10 mock pages during a 1-month surgery internship preparation course. Individual feedback was provided after each case. **Summary of Results.** The reliability of the semantic differentiation scale for assessing phone communication ranged from .88 to .95, and the clinical decision-making assessment ranged from .01 to .73 (6 cases above .5). Student performance on clinical decision-making ranged from 28-58% correct. Student evaluation of the realism, feedback, and value of their mock page experience was excellent. **Conclusions.** The mock page exercise is a feasible and reliable means of teaching and assessing student communication in phone consultations with nurses. Students' clinical decision-making performance reinforces the need for rehearsal using this high-fidelity, low-risk exercise prior to internship

Quantifying the Frequency of Feedback Provided to M3's by Supervising Faculty & Residents

Shaun Daidone M2, Medical College of Wisconsin

Deborah Simpson PhD, Medical College of Wisconsin

Diane Brown MS, Medical College of Wisconsin

Dawn Bragg PhD, Medical College of Wisconsin

Maria Burzynski M3, Medical College of Wisconsin

Richard Leake M3, Medical College of Wisconsin

Paul Stellmacher M2, Medical College of Wisconsin

Edmund Duthie MD, Medical College of Wisconsin

Objective: Formative feedback catalyzes learning (Boehler et al 2006) and is an accreditation standard (LCME ED5A & ED31; ACGME). Medical students (MSs) consistently report receiving limited feedback (AAMC GQ 2009), but observational studies to confirm this finding are limited. This study sought to quantify the amount of feedback received by MS3's from their supervisors (faculty and residents). **Methods:** Four rising M2's conducted tag-along observations of M3 patient encounters as part of a geriatric focused curriculum audit. Observers used a content checklist derived from a 2007 AAMC/Hartford Consensus Conference on MSs Geriatrics Minimal Competencies which included items on provision of feedback by resident or faculty. M3 patient and supervisor interactions were observed on 6 clinical rotations during two study periods: Summer 2008 and 2009. **Results:** 226 total M3 patient encounters were observed. Due to study focus, student/supervisor feedback was reported for those clinical encounters with geriatric patients resulting in 65 observed encounters (29%). 10/65 observations recorded a supervisor commenting on and/or requesting further follow-up from students (15%). **Conclusions:** Students received minimal supervisor comments on their patient interactions confirming student self-report of limited feedback. Supervisors must be trained in time efficient and effective feedback strategies and systems solutions for assuring compliance with this learning and accreditation mandate are under development.

An Investigation of Alternating Group Dissections in Medical Gross Anatomy

Laura Thorp MPT, PhD, Rush Medical College of Rush University

Adam Wilson MS, Rush Medical College of Rush University

Michael Petty PhD, MS, Rush Medical College of Rush University

James M. Williams PhD, Rush Medical College of Rush University

Purpose: Reduction in contact hours has led to the use of more efficient teaching approaches in medical education, yet the efficacy of such approaches is, at times, not fully investigated. This work furthers existing literature through a detailed analysis of alternating group dissections and peer-teaching in medical gross anatomy. Methods: Four medical classes were categorized as alternating (ALT) or non-alternating (NALT) participants. Between and within group comparisons were made in the following areas: 1) Medical Anatomy I and II course percentages of ALT and NALT were compared; 2) scores of ALT subgroups (A and B) were compared; and 3) subgroup performance on practical exam questions was compared to determine if students were more likely to identify a structure they had physically dissected as opposed to one that was demonstrated by their peers. Finally, opinions of ALT participants were assessed via an electronic questionnaire. Results: Analysis of Medical Anatomy I course percentages indicated no difference in mean scores ($p=0.581$, $d=0.08$) between ALT and NALT. Likewise, no difference ($p=0.223$, $d=0.12$) was noted between ALT and NALT on Medical Anatomy II course percentages. Subgroup analysis and assessment of question types showed that student performance and ability to identify a structure were not dependent on dissection group assignment. Conclusion: Utilizing an alternating dissection schedule provides students with more unstructured time and reduces the student-to-cadaver and student-to-faculty ratios by 50%. In addition, alternating group dissections with peer-teaching was not detrimental to student performance when compared to the traditional non-alternating dissection approach.

The Impact of a Novel Peer-Designed and -Led USMLE Step 1 Review Course: Improvement in Preparation and Scores

Dale Vandre PhD, The Ohio State University College of Medicine

Alicia M. Alcamo MPH, The Ohio State University College of Medicine

Abby R. Davids MPH, The Ohio State University College of Medicine

David P. Way MEd, The Ohio State University College of Medicine

D. Joanne Lynn MD, The Ohio State University College of Medicine

BACKGROUND: Medical students use a number of strategies for USMLE Step 1 preparation. At Ohio State, a year-long, peer-designed and -led Step 1 review course is a new option for second-year students. While studies of commercial review courses have shown little impact on Step 1 performance, the impact of peer-implemented review courses is not well understood. Supplemental peer instruction has been shown to improve academic performance in medical school. OBJECTIVES: To ascertain the value of the peer-implemented Step 1 review course; to assess the difference in Step 1 scores between participants and non-participants; and to understand the course's role in improving preparation for Step 1 among participants. METHODS: Following the receipt of Step 1 scores, students completed a confidential survey. Scores of course participants and non-participants were compared using a one-way ANCOVA. Pre-existing differences between groups were controlled using total MCAT score. RESULTS: Course participants had an average adjusted Step 1 score of 231.35, while non-participants had an average adjusted score of 222.49 ($p < 0.01$). Most participants (62.3%) felt the course helped identify areas to focus their study, and 65.6% felt it helped them become more comfortable with Step 1 style questions. Additionally, 67% of participants felt it was a valuable use of time, and 66% would recommend it to future students. CONCLUSIONS: Second-year medical students valued the peer-implemented Step 1 review course. Course participation not only improved Step 1 outcomes, but also had a positive impact on student's preparation for the exam.

Session III

How to Develop and Sustain Teaching Scholars Programs: Tip & Challenges

Carol Hasbrouck MA, The Ohio State University College of Medicine

Patricia Mullan PhD, University of Michigan Medical School

Sheryl Pfeil MD, The Ohio State University Medical Center

Deborah Simpson PhD, Medical College of Wisconsin

Faculty teaching in medical schools frequently have limited training in teaching, leadership and/or scholarship skills. As highlighted in the AAMC GEA Consensus Conference report (AAMC, Simpson et al, 2007), teaching was historically an expectation in academic medicine, but preparation for the role was not typical, nor sufficient for promotion. Many institutions have developed programs focused on the development of teachers, scholars, and academic leaders (Gruppen, 2006; Hatem, 2006; Searle, 2006). Academic Medicine devoted issues to such topics as faculty development (2002, Vol. 77, # 5), medical education research (2004, Vol. 79, #10), and educational training/fellowship programs (2006, Vol. 81, #11). In the last decade, there has been a significant increase in scholars/fellowship programs designed to better prepare faculty for their educational roles, including leadership, educational research (Gruppen, 2007), innovations, and teaching skills. These programs vary considerably in duration, intensity, size, structure, and target audience. The purpose of this panel is to foster discussion of best practices, brainstorm solutions, and identify resources needed for those wishing to develop programs and those wishing to sustain existing programs. Three different medical schools will be represented: one that just graduated its first class (Ohio State); one in existence since 1998 (University of Michigan); and one that has developed multiple programs over the last 25 years (Medical College of Wisconsin). One panelist will be a graduated Teaching Scholar. A handout describing each program's characteristics will be provided which will outline program purpose, target audience, program duration, sources of funding, number of Scholars, and program evaluation.

Note writing by Medical Students in the Electronic Medical Record: - An "EPIC" Experience at the University of Iowa Health Center

Joel Gordon MD, University of Iowa Carver College of Medicine

Ellen Gordon MD, University of Iowa Carver College of Medicine

David Asprey PA, PhD, University of Iowa Carver College of Medicine

Tyler Haberle M4, University of Iowa Carver College of Medicine

Gerald Wickham MA, University of Iowa Carver College of Medicine

Note writing by Medical Students in the Electronic Medical Record: An "EPIC" experience at the University of Iowa Health Center. Joel A. Gordon MD, Ellen EI Gordon MD, David Asprey PA, PhD, and Gerald Wickham, MA, and Tyler Haberle, BS. Carver College of Medicine, University of Iowa Hospitals and Clinics, Iowa City, IA. Medical Student's skills of writing quality medical notes have been deteriorating for at least the last 10 years. One of the major factors contributing to this deterioration is the ruling by the Center for Medicare and Medicare Services that patient data collected by medical students was not valid and would not be accepted as a basis for reimbursement with the exception of the Past, Family, and Social history. The result of this decision was that during their important formative years on clinical clerkships medical students no longer played a primary role in the care of patients. The medical students' admission notes frequently served as the structural foundation for the notes students would write in the future. This fact, coupled with the introduction of the electronic medical record at many institutions, including our own, makes teaching the skill of note writing and evaluation of medical student note writing skills increasingly challenging. This panel discussion will focus on the experience we have had at the University of Iowa Health Center introducing EPIC into our hospitals and ambulatory clinics and how medical student note writing in EPIC has been an important part of this process. Individuals who attend this session will learn methods to create note templates in the EPIC EMR. Attendees will also learn strategies for engaging student participation on critical committees in the enterprise that facilitates meaningful dialogue and feedback to create effective note templates that facilitates meaningful note writing experiences.

Service-Learning SIG: Service-Learning: Best Practices for the New Decade

Steve Kirchoff MHA, Indiana University School of Medicine

Janet Hortin MD, Indiana University School of Medicine

Elizabeth Ryan EdD, Feinberg School of Medicine, Northwestern University

Ruth Margalit MD, University of Nebraska Medical Center

Jennifer Mendez PhD, Wayne State University Medical School

The Liaison Committee on Medical Education (LCME) approved a new service learning standard, effective July 1, 2008, which requires medical schools to "make available sufficient opportunities for medical students to participate in service-learning activities." Service-learning is a recognized pedagogy and is being implemented in a variety of formats in the academic medical center setting; these include required courses, elective courses, offering elective credit for volunteer service, volunteer service-learning projects, competency-based programs, and service-learning tracks. A panel of service-learning experts from four CGEA medical centers will present diverse service-learning models. Session participants will then discuss information about their own service-learning programs. The session will conclude with a discussion of methods for continuing the service-learning dialogue among CGEA schools; this could include faculty development through shared continuing education programs and joint endeavors such as multi-center research and program evaluation.

Using Multimedia in Multicultural Faculty Development: Scenes from the Movie Crash

Paula Ross MA, University of Michigan Medical School

Monica L. Lyson MD, University of Michigan Medical School

Terence A. Joiner MD, University of Michigan Medical School

Arno K. Kumagai MD, University of Michigan Medical School

Background Training medical students to address health care disparities involves, not only education regarding evidence of such disparities, but also the fostering of a critical awareness of the impact of assumptions and biases on physician-patient interactions. In preparation for teaching in these areas, it is essential that the instructors themselves reflect on their own biases, values, and perspectives and model the types of discussions they will facilitate. This faculty development workshop uses excerpts from the Academy Award-winning movie, "Crash," to encourage reflection and discussion on teaching for social justice. Workshop Aims To broaden participants' critical awareness of challenges involved in teaching about issues of race, gender, class, and power in health care; to enhance skills in facilitating such discussions; to increase one's understanding of dynamics of small groups involving diverse learners, and improve skills in fostering learning environments which encourage critical reflection. Format Four selected scenes from "Crash" will be used to stimulate reflection and discussion. Techniques, such as paired and group discussions, role play, and a "fishbowl" exercise, will be used to explore perspectives, biases, and assumptions in order to better facilitate student learning.

The Danger of Not Knowing What You Don't Know: Knowledge Deficits Surrounding Patient Handoffs and Implications for Patient Safety

Daniel Evans MD, Feinberg School of Medicine, Northwestern University

Aashish Didwania MD, Feinberg School of Medicine, Northwestern University

Elaine Cohen BA, Feinberg School of Medicine, Northwestern University

Diane Wayne MD, Feinberg School of Medicine, Northwestern University

A handoff is defined as the transfer of role and responsibility from one person to another in a physical or mental process. Over the past decade- handoffs between medical providers have been rising in frequency, as well as complexity. Communication failures have been shown to be the root cause of most hospital adverse events, and handoffs between medical providers are a particularly vulnerable time for communication errors to occur. As part of an ongoing educational study of handoff skills at Northwestern, we developed a web-based curriculum focusing on 40 critical teaching points regarding handoffs. The initial draft curriculum was developed after an extensive literature review and then was edited after input from two focus groups of local experts. Based on our 40 teaching points- we developed an interchangeable pre/post test of knowledge. We then measured the baseline knowledge of various subjects (4th year students, PGY1 medical interns, and attending hospitalists) in order to help us adjust our curriculum and assess if our intervention improved subsequent clinical performance. This 45 minute discussion group will review how to perform a needs assessment and use the results to develop a curriculum on improving handoffs. We will highlight some of the knowledge gaps we found in our learners and

discuss how these deficits might impact patient safety. We will also provide data on how our subjects' self-confidence in performing a handoff correlated with actual knowledge. After our study we conclude that in order to improve clinical handoff skills, educators must first study the baseline knowledge of their learners.

End-User Innovation in CurrMIT (Curriculum Management and Information Tool)

Hameed Ahmed MS, Association of American Medical Colleges

Stacey Jackson MS, Indiana University School of Medicine

Since 1999 the Association of American Medical Colleges (AAMC) has been providing the Curriculum Management and Information Tool (CurrMIT). CurrMIT is a password-protected, online database that offers a full array of support service designed to help medical schools manage and report on their curriculum. CurrMIT is an extremely flexible tool that can accommodate virtually any medical school curriculum. Whether the curriculum is a traditional 2+2, incorporates problem-based learning, or features other curricular structures or innovations, CurrMIT's database is flexible enough to record and manage its key features. A number of schools have entered a substantial amount of data in order to better utilize CurrMIT. While entering data in CurrMIT is not difficult, schools sometimes find some aspects of curricula, such as problem-based learning and clerkship experiences, more challenging. This discussion will cover end user innovation in CurrMIT, i.e. how schools have used the system beyond its intended use. Topics for this session include 1) Use of CurrMIT with the faculty tracking of teaching and mission-based budgeting'. 2) Linking CurrMIT data to GQ data and identifying resources in MedEdPORTAL.

RIME Oral Abstract Presentations Session 5

Post-Baccalaureate Premedical-Program Participation Among a National Cohort of 1995-2000 Medical School Matriculants

Dorothy Andriole MD, Washington University School of Medicine

Donna B. Jeffe PhD, Washington University School of Medicine

Objective: To characterize U.S. medical-school matriculants who were post-baccalaureate premedical-program participants. Methods: Using multivariable logistic regression, de-identified, individualized records of Medical College Admission Test (MCAT) scores, AAMC Matriculating Student Questionnaire (MSQ) responses and Graduation Questionnaire (GQ) responses for 1995-2000 U.S. medical-school matriculants were analyzed for associations between selected variables and post-baccalaureate academic-enrichment-program (AEP), or premedical-requirements-program (PRP) participation vs. no post-baccalaureate-program participation (reference group). We report significant adjusted odds ratios (ORs) for independent predictors of post-baccalaureate-program participation ($P < .05$). Results: Of 57,148 matriculants, 3554 (6.2%) reported AEP-participation, and 3921 (6.9%) reported PRP-participation. Predictors of AEP-participation and PRP-participation included older age (OR=1.23 and OR=1.25, respectively) and MCAT-preparation course participation (OR 1.34 and OR 1.40, respectively). Medical students with lower MCATs (each compared with MCAT>29: MCAT <18, OR=5.19; MCAT 18-20, OR=3.68; MCAT 21-23, OR=2.76 ; MCAT 24-26, OR=2.06; MCAT 27-29, OR=1.63), who decided before college to study medicine (OR=1.15), participated in college summer enrichment program (OR=1.34), and were underrepresented minority (OR=1.23) or Asian/Pacific Islander (OR=1.15) race/ethnicity were more likely to report post-baccalaureate-AEP participation, whereas women were less likely to do so (OR=0.86). Students who decided after college to study medicine (OR=8.21) and women (OR=1.42) were more likely to report post-baccalaureate-PRP participation. Graduation rates were high (93.7% AEP; 94.1% CCP). Twenty-five percent of AEP (708/2836) and CCP (777/3099) participants, but only 20.6% (7908/38,437) of post-baccalaureate-program non-participants, planned to practice in underserved areas. Conclusion: Post-baccalaureate-AEP and -CCP participants comprised different matriculant groups. Educational significance: Post-baccalaureate-program participation impacted both medical-student diversity and graduates' career intentions.

Primary-Care Specialty Choices of United States Medical Graduates, 1997-2006

Dorothy Andriole MD, Washington University School of Medicine

Donna B. Jeffe PhD, Washington University School of Medicine

Alison J. Whelan MD, Washington University School of Medicine

Purpose: To identify predictors of primary-care specialty choices among U.S. medical graduates. Method: A longitudinal cohort study of 1997-2006 graduates who completed the Association of American Medical Colleges' Matriculating Student Questionnaire (MSQ) and Graduation Questionnaire (GQ) was conducted using individualized, linked, and de-identified MSQ and GQ responses. Multivariate logistic regression identified significant predictors of primary-care specialty (each of general internal medicine, general pediatrics, internal medicine subspecialties, pediatrics subspecialties, family medicine, and obstetrics/gynecology) choices at graduation compared with all other specialties (reference). P-values are two-sided. Results: Our sample included 102,673 graduates (64.9% of all 1997-2006 graduates). Over time, choices of general internal medicine, family medicine, general pediatrics, and obstetrics/gynecology decreased, while choices of internal medicine subspecialties and pediatrics subspecialties increased (each $P < .001$). Graduates who were women, planned to practice in underserved communities, espoused more altruistic beliefs about healthcare and greater importance to social responsibility in choice of the profession of medicine at matriculation were more likely, while graduates with a physician parent and who planned full-time academic-medicine careers were less likely, to choose general internal medicine, general pediatrics, family medicine, and obstetrics/gynecology (each $P < .01$). Graduates with higher debt load were less likely to choose general internal medicine and general pediatrics specialties (each $P < .001$) and more likely to choose obstetrics/gynecology ($P = .001$). Conclusions: Predictors of primary-care specialties varied substantially among the different primary-care specialty choices we explored. Educational Significance: Observed associations between specialty choices and demographic, attitudinal, and career-intention variables can inform the design of educational interventions to address expected primary-care workforce shortages.

Medical Student Distress and Career Choice: A Multi-Institutional Study

Liselotte Dyrbye MD, MHPE, Mayo Clinic Mayo Medical School

Christine Moutier MD, University of California, San Diego

Steve Durning MD, Uniformed Services University of the Health Sciences

Stanford Massie Jr. MD, MHPE, University of Alabama School of Medicine

David V. Power MD, University of Minnesota Medical School

Anne Eacker MD, University of Washington School of Medicine

William Harper MD, University of Chicago Pritzker School of Medicine

Tait D. Shanafelt MD, Mayo Clinic Mayo Medical School

Purpose: Previous research suggests future life-style appears to be driving many students' career preference. We explored the relationship between medical student distress and anticipated specialty choice. Methods: Medical students attending 7 medical schools were surveyed in 2007. The survey included questions about anticipated specialty choice, suicidal ideation, life events in the previous 12 months, and validated instruments to evaluate burnout, symptoms of depression, empathy, and quality of life (QOL). Results: Among the 2248 responding students (response rate 52%), 731 (32.5%) were interested in primary care (PC), 595 (26.5%) a surgical field (SF), 844 (37.5%) a non-primary care/non surgical field (NPC/NSF), and 78 (3.5%) undecided. Differences in anticipated specialty choice by gender ($p < 0.0001$), age ($p = 0.03$), and debt load ($p = 0.007$) were observed. Anticipated specialty choice had no relationship to marital status, parental status, or major recent life events. There was no difference in prevalence of burnout, depressive symptoms, recent suicidal ideation, or mental QOL by anticipated specialty choice. Students choosing PC had higher empathy scores (mean [SD]: 118.9[10.83]) than students interested in a SF (114.7 [12.22]; $p < 0.0001$) or a NPC/NSF (114.8 [12.25]; $p < 0.0001$). Discussion: Symptoms of burnout, depression and poor mental QOL were not related to medical students anticipated specialty choice in this multi-center study. Students favoring PC specialties had higher empathy scores.

University of Missouri School of Medicine Rural Track Pipeline Program (MU-SOM-RTPP): A Self-renewing Pipeline for Rural Training, Practice Placement and Retention

Kathleen Quinn PhD, University of Missouri School of Medicine

Kevin Kane MD, University of Missouri School of Medicine

Jana Porter MS, University of Missouri School of Medicine

Purpose The MU-SOM developed the RTPP to increase the supply and retention of rural and primary care physicians statewide. The program emulates and expands upon successful programs nationwide described in the literature to address physician shortages. The MU-RTPP features a high school recruitment program, a pre-admissions program for rural students, an M1 summer community experience, a six-month M3 Rural Clerkship Program, an M4 Rural Elective Program, and a Placement Service. Pre-admitted students (Rural Scholars) participate in all program components at various rural sites during medical school. Methods Since 2002, residency specialty choice for 48 Rural Scholars and 667 Non-Rural Scholars has been tracked. Since 1997, residency specialty choice for 200 M3 Clerkship participants and 972 non-participants has been tracked. The relative risk was calculated for the likelihood Rural Scholars and Clerkship participants matched in primary care compared to non-program participants. First practice location for Rural Scholars and M3 Clerkship participants has also been tracked. Results Rural Scholars were nearly two times more likely to match in family medicine (RR=1.83; 95%CI 1.06-2.97) and more likely to stay in Missouri for residency (63% vs. 37%) compared to Non-Rural Scholars. Clerkship Participants were twice as likely to match FM (RR=2.3; 95%CI 1.8-3) compared to non-program participants. Forty-eight percent of Clerkship participants and 45% of Rural Scholars practice in population areas of 50,000 or less. Educational significance The MU-RTPP is a longitudinal program that successfully trains students for rural and primary care practice to meet the healthcare needs of Missouri.

Innovations in Medical Education Poster Abstracts

1. Impact of a Procedure Workshop on Pediatric Residents Comfort Level With Procedures

Karen Judy MD, Loyola University Medical Center

Laura Vargas MD, Loyola University Medical Center

Objective: Residency programs must ensure that residents achieve the required competency performing certain procedural skills. An initial step towards competency is self-reported comfort when performing a procedure; a resident who is not comfortable is also unlikely to be competent in a given procedure. Venipuncture, peripheral intravenous catheter placement, and lumbar puncture have been identified as some of the most critical procedural skills for pediatric residents. No universal curriculum exists to teach basic procedures to pediatric residents. We developed a workshop to formally instruct residents in these skills and to assess the change in comfort level occurring as a result of the workshop. Methods: Twenty-three pediatric residents participated in the 2 hour procedure workshop (including an instructional video followed by practice on training simulators). All participants were asked to answer a pre and then post- test, using a 7 point Likert scale, assessing their comfort performing each procedure as well as their comfort with anatomy, equipment, technique, and complications. Differences between pre and post-tests were analyzed. Results: After the workshop, residents reported a significant improvement in their overall comfort and in the level of comfort with all four aspects of the procedure. The degree of improvement from baseline comfort levels was similar between those with and those without prior experience. Conclusion: A procedure workshop can be an effective method of teaching and improving comfort levels with common pediatric procedures. Further studies are needed to compare the results of this study with the actual success rate performing these procedures in real life.

2. Night Float Teaching and Learning: Perceptions of Residents and Faculty

Ronald Markert PhD, Wright State University Boonshoft School of Medicine

Dean A. Bricker MD, Wright State University Boonshoft School of Medicine

Background: Most internal medicine residency programs use a night float system to meet resident work hour regulations. Night float assignments often comprise 10% or more of scheduled clinical time during training. Despite this substantial allotment of time to night float, few studies have assessed the adequacy of learning opportunities during these rotations. Methods: Wright State University Boonshoft School of Medicine internal medicine residents and attending faculty were asked to complete a 25-item voluntary, anonymous survey. A 5-point Likert scale was used to assess perceptions of education during day and night rotations. Results: The response rate was 52% (85 of 164). Residents rated teaching and learning on day rotations more positively than night rotations for 17 of 25 (68%) items. Attendings rated day rotations more highly for all 25 survey items. Residents differed from faculty on six items related to night rotations. Residents attended didactic conferences more often and learned more from following patients' daily progress than faculty thought they did. Also, in contrast to the perception of faculty, residents do not believe they have adequate opportunity to teach junior learners, or to be taught by and have their clinical decisions guided by the attending. Finally, residents were less likely to agree that they were adequately rested during night float or that they discussed detailed clinical reasoning with their attending. Conclusions: There are many lost educational opportunities in the current night float system. Modification of the existing night float format may improve its overall educational value.

3. So You Married A Doctor: Perspectives and Research on Domestic Partnerships

Monica Lypson MD, University of Michigan Medical School

Hilary M. Haftel MD, University of Michigan Medical School

Rachel L. Perlman MD, University of Michigan Medical School

Paula T. Ross MA, University of Michigan Medical School

Background Research has shown marriage (domestic partnerships) among physicians is most likely to occur before graduation from medical school and half of female physicians marry other physicians. Dual career relationships experience unique challenges and physician partnerships also experience similar challenges similar to the general population. Aims of the Workshop The overall aim of this exportable student workshop is to promote student well-being through a focus on work-life balance in physician domestic partnerships. This is accomplished through guiding participants to: • explore the relationship implications of dual physician partnerships • review the current literature on medical marriages • discuss with current faculty how they currently manage their personal and professional lives • explore potential barriers and issues as they see it to managing their own personal relationships This workshop combines the literature in this area with discussions with couples in the medical field. It is ideal to identify physicians willing to discuss both the challenges and successes of their relationships. This informs students of the common pitfalls, struggles and triumphs in relationships. Methods/Session Format Lecture (20 minutes) Small Group Discussion (20 minutes) Faculty Role Model(s) (20 minutes) Results Student attendees evaluations revealed the workshop was: • Useful in getting candid advice from real people who have experienced dual domestic partnerships. • Small-group focused on student well being

is an important component to the medical experience. • The casual and non-judgmental environment allowed students to explore the topic in greater detail.

4. **Medical Student Led Obesity Education and Team Based Learning for High School Students**

Carina Jackman BA, Medical College of Wisconsin
Sarah Potts BS, Medical College of Wisconsin
Paola Palma Sisto MD, Medical College of Wisconsin
Bob Treat PhD, Medical College of Wisconsin

Introduction The exponential rise of pediatric obesity signifies the need for additional education for adolescents about nutrition and the health consequences of obesity. Medical students (MS) developed the Obesity Education Initiative to supplement health education for high school (HS) students. We hypothesized that an interactive format (team based learning (TBL)) would enhance the content being presented. Methods Trained MS (N=30) visited health classes at five area HS and presented a standardized instructional module consisting of knowledge about basic nutrition, lifestyle choices, and the health consequences of obesity. The HS students completed a pre-survey prior to the presentation assessing knowledge and current behaviors. HS students formed small teams and were asked to answer “challenge questions.” Presenters challenged the students to a 30 day healthy lifestyle challenge. A post-survey was administered at the end of that period to assess knowledge retention and goal achievement. HS Students and teachers provided feedback about the TBL format. Results 450 HS students in 5 areas schools were taught by MS. Analysis of the survey results showed retention of knowledge 30 days after the presentation. A majority of HS students agreed that working as a team facilitated learning and allowed them to think critically about their answers. HS teachers responded positively to the curriculum change, agreeing that group work enhanced participation and learning. Conclusions The addition of a team based learning approach to the curriculum was well received by HS students and appeared to facilitate learning. Trained MS can effectively educate HS students through an interactive format.

5. **Interprofessional Student Healthcare Teams: Improving Healthcare Quality from the Ground Up**

Marshall Anderson PhD, Indiana University School of Medicine Northwest
Linda R. Delunas PhD, RN, CNE, Indiana University Northwest School of Nursing
Susan M. Rouse PhD, RN, CNE, Indiana University Northwest School of Nursing
Jennifer Anderson MSW, LCSW, Indiana University Northwest Division of Social Work
Patrick W. Bankston PhD, Indiana University School of Medicine Northwest

Objectives: To create student health care teams (HCT) consisting of a first year medical (MS), third year nursing (NS), and a graduate social work student (SWS). The Team works together for three semesters to develop communications skills for giving and receiving information and understanding the roles and responsibilities each has in patient care. This study assessed student perceptions related to interprofessional communication and collaboration and the effect of the HCT project on those perceptions. Materials and Methods: The HCT is assigned a community-dwelling patient and completes prescribed assignments each semester. Teams meet periodically and discuss their findings and plans about the patient and practice communication and collaboration skills. Two assessment tools were used for evaluation for medical and nursing students: Jefferson Attitudes Scale (1) and Collaboration and Satisfaction about Care Decisions (adapted with permission) (2). Students were assessed at beginning and end of the program. Two cohorts have started the program, and one has completed. Results: There were significant differences in item mean score of the two assessment tools between MS and NS. Students rated reality of collaboration lower than ideal. NS were less satisfied with communication and collaboration than MS. Conclusions/Future Directions: We changed our thinking from HCT being the intervention to it being the context for the intervention. For cohort 3, we have instituted the TeamSTEPPS program <http://dodpatientsafety.usuhs.mil/teamstepps>, presentations on roles and responsibilities, a HCT Handbook, mandatory team meetings, and evaluation instruments to capture data from SWS as well as MS and NS. References: 1.Hojat, M. et. al., Eval. Health Prof. 22: 208-220 (1999). 2. Bagg, J.G., J. Adv. Nursing, 20: 176-182 (1994).

6. **The Development and Integration of Teamwork Training into Surgical Residents' Trauma Rotation**

Melissa E. Brunsvold MD, University of Michigan Medical School
Adam C. Frischknecht MSE, University of Michigan Medical School
Barbra S. Miller MD, University of Michigan Medical School
Rebecca M. Minter MD, University of Michigan Medical School
Paul G. Gauger MD, University of Michigan Medical School
Stanley J. Hamstra PhD, University of Ottawa Academy for Innovation in Medical Education
Linnea Hauge PhD, University of Michigan Medical School

Background: We incorporated an educational intervention into the trauma rotation to improve residents' communication, teamwork, and decision-making. Our purpose is to describe this intervention and challenges involved in implementation. Summary of Work: An educational program conducted during the outset of the trauma rotation includes orientation to team training and ATLS protocols, independent reading, and resident

practice leading simulated codes with faculty feedback. Trained raters used the NOTSS instrument to evaluate performance. Summary of Results: The study team has: developed objectives and scenarios, trained staff to serve as confederates, piloted scenarios for team training, coordinated involvement of nursing staff, adapted evaluation instruments, piloted a video management system, conducted faculty development on use of video recordings for quality assurance and education, obtained approval for utilizing video recording in the trauma bay for education and evaluation, reviewed team curricula, completed faculty development on team training, and completed rater training on an evaluation process. Conclusions: A just-in-time innovation aimed at improving residents' team leadership skills in a crisis requires extensive human and technological resources. Successful incorporation of teamwork training into a clinical rotation is dependent upon system infrastructure and a shared commitment to the importance and execution of the intervention.

7. Teaching Practical EBM - Two Approaches to Helping Students Understand and Contribute to the Medical Literature

Matt Bien MD, University of South Dakota Sanford School of Medicine

Linda Goldenhar PhD, University of Cincinnati College of Medicine

Objective Evidence based medicine requires an understanding of the medical literature and associated biostatistics. As adult learners, medical students must appreciate why such concepts are vital to their future medical practice and thus must have the opportunity to apply these skills in clinically relevant contexts. The two approaches outlined here enhance student abilities in these areas. Methods Both USD and UC have implemented multi-session, evidence based medicine courses. Each begins early in the first year, providing students a framework for subsequent basic science and clinical experiences. UC uses an innovative series of self-directed online modules. USD employs sessions with novel exercises that allow students to develop a project. Both courses cover clinical question development, accessing and appraising medical literature, study design and statistics, and most importantly, applying findings to the patient. Results While still relatively new (three years for UC and one year for USD), initial feedback and performance measures indicate students are meeting course goals. USD students report significantly increased confidence in all queried areas: searching the medical literature, applying appropriate biostatistics and research methods, and developing a research project. UC students have improved pass rates on the final exam since moving to the self-directed learning format. These results demonstrate success in teaching EBM principles to medical students. Conclusions In conclusion, these two approaches equip students with the necessary tools to understand the medical literature and promote student interest in contributing through research of their own. How this will impact future clinical research interests is yet to be determined.

8. Community Engagement Curriculum (CES): How to Design a 4-Hour Curriculum Using Technology to Support Adult Learning

Lauren Taylor BA, BSEd, MEd, Feinberg School of Medicine, Northwestern University

Elizabeth Ryan EdD, Feinberg School of Medicine, Northwestern University

Thomas Staff MD, MPH, Feinberg School of Medicine, Northwestern University

Practicing medicine today can require addressing complex public health and social problems. Nationally a spotlight shines on new approaches to solve community health issues. Locally, Northwestern University Feinberg School of Medicine (NUFSM) has decided to implement a Community Engagement and Service (CES) competency, as part of a new competency based curriculum. The CES unit within the third year Interdisciplinary Medicine (IDM) curriculum provides baseline knowledge in the guiding principles of community engagement and skills for interacting with community groups highlighting the role of the physician within community development and their contract with greater society. Through non-traditional approach of pre-recorded learning modules, quiz games, simulations, and reflections students were kept engaged through the use of technology and real life scenarios to enhance the materials. Lessons learned will be discussed and included in subsequent curricular design. This type of curriculum has implications as for both schools that are moving into a competency based curriculum and/or trying to incorporate community engagement and service learning into their curriculum but also how to make curriculum more engaging by using tools such as technology and simulation.

9. Increasing the Ability of Internal Medicine Resident Physicians to Improve Patient Care in Outpatient Settings using Quality Improvement Principles and Methods.

James Koller MD, University of Missouri-Columbia School of Medicine

Barbara Boshard RN,BSN, MS, University of Missouri-Columbia School of Medicine

Poorna R. Karuparathi MD, University of Missouri-Columbia School of Medicine

OBJECTIVE: Graduate medical education programs are challenged to integrate the ACGME core competencies into the resident curriculum. We sought to integrate didactic and experiential quality improvement (QI) opportunities into the ambulatory clinic rotation curriculum to foster competency in Practice-based Learning and Improvement (PBLI) and Systems-based Practice (SBP). METHODS: Fifteen PGY2's and PGY3's attended meetings over 2-4 weeks that were co-facilitated by a QI expert and a physician leader. A fifteen question survey about QI was given pre- and post-intervention using a five point Likert scale with '5' denoting highest perceived

knowledge, skills, and attitudes about QI. The intervention consisted of didactics on QI principles and tools including aim statement, flow chart, Ishikawa diagram, and PDSA cycle. Experiential learning followed where residents applied the didactics to clinical problems of their choosing within the outpatient setting. A three question evaluation of our intervention was given using a 5 point Likert scale with '5' denoting strong satisfaction. Two open ended questions were also given to solicit written feedback. RESULTS: Survey Likert ratings improved from 2.56 pre-project to 3.58 post-project indicating an improvement in residents' perceived knowledge, skills, and attitudes of QI. Evaluation Likert ratings were 4.18 indicating satisfaction with the experience. CONCLUSIONS: The methods used in this study are consistent with adult learning principles in that adults learn best when they can apply didactic knowledge to a problem in their practice. We found a successful avenue to teach QI methods that will help us integrate PBLI and SBP into our resident curriculum.

10. Suturing on a Bench Model and a Standardized-Patient Hybrid Are Not Equivalent Tasks

Rachel Yudkowsky MD MHPE, University of Illinois at Chicago

Martin Hurm MFA, University of Illinois at Chicago

Bob Kiser, University of Illinois at Chicago

Background: Faculty frequently assume that procedural mastery on a bench model implies the ability to safely perform the procedure on a live patient, but interacting with a patient may overload attentional resources and increase the risk of error. Purpose: to determine whether mastery of suturing assessed on a model was maintained when adding standardized-patient (SP) based interaction challenges. Methods: M3 students learned to suture on models prior to beginning clerkships and practiced during core rotations and skills labs prior to a summative Clinical Skills Exam (CSE) in July 2008. In Part I of the CSE, suturing was assessed using bench models and a 15-item checklist. Students who missed more than one item were provided immediate instruction, practice and retesting, with a perfect score required on retest. Two to four weeks later, Part 2 of the CSE included an encounter with an SP who had cut himself in his workshop. Students conducted a focused history and physical exam and sutured the laceration on a pad attached to the SP. Results: 190 M4 students averaged scores of 98% (SD 7%) on the suture checklist during the initial procedural skills exam, prior to remediation. Suture checklist scores for the SP-based laceration averaged 86% (12%). Conclusion: The decrease in checklist scores likely was due to additional cognitive load required when interacting with the SP. Demonstrating mastery on a bench model does not imply competency while interacting with a conscious and verbal patient. Students should be supervised during transitions from simulation models to live patients.

11. Resident Error Reporting and Standardization of Morbidity and Mortality Rounds

Ellen Solomon MD, Metroheath Medical Center, Case Western Reserve University

Aleece Caron PhD, Metrohealth Medical Center, Case Western Reserve University

Thomas Frank MD, Metrohealth Medical Center, Case Western Reserve University

Introduction: In order to develop the core competency of systems based practice within the obstetrics and gynecology residency program we piloted a project that required residents to identify medical errors and system failures within daily practice. Methods: All Obstetrics and Gynecology residents at Metrohealth Medical Center underwent a workshop on patient safety, epidemiology of errors, and systems-based practice. The residents were then trained to use the University Health System Consortium error reporting system. The residents were informed that the system was confidential, safe, and had no punitive impact. They were asked to report two errors weekly over a four month period. The intention was to compile the errors to ascertain if there were consistent problems reported and generate system solutions. Results: No errors were reported during the first phase. In Phase 2, it was decided that error reporting would be mandatory and that residents would be required to discuss two errors at every morbidity and mortality rounds within the department. Once made mandatory, two errors were reported with detailed discussion at each morbidity and mortality conference. The residents gathered information from the error reporting website, developed a grid based on Leape's taxonomy of errors, and recommend system solutions to improve processes of care. Conclusion: Due to time constraints as well as other ethical factors, it is difficult for residents to partake in additional educational activities. By incorporating error reporting into Morbidity and Mortality rounds, residents can integrate self assessment, error reporting, and systems based practice in to their daily practice.

12. Receptivity to Feedback: Defining and Measuring a Fundamental Competency for Professional Behavior

Rebecca Henry PhD, Michigan State University College Of Human Medicine

Brian Mavis PhD, Michigan State University College Of Human Medicine

Dianne Wagner MD, Michigan State University College Of Human Medicine

Medical education has embraced professionalism as an essential competency to be taught and assessed in undergraduate and graduate curricula. While professionalism is at the center of many academic conversations, there has been little progress in creating a theoretical foundation for this concept or advancing it as a measurable construct. The College of Human Medicine initiated a project to enlighten ourselves on the meaning of professionalism and ways that we can both teach and assess our learners. Challenged by how to define it, we used a strategy to subdivide the construct into core components. One of these components is the learner's

capacity for self-awareness (knowledge of one's limits) and self-improvement (learns from the critiques of others). Frequently, learners who struggle have difficulty acknowledging and learning from the feedback of others. Our IME Poster describes our work developing a definable and measurable competency within the rubric of professionalism. Drawing from the disciplines of business management (reaction to feedback) and cognitive psychology (intra/interpersonal intelligence) we have identified the competency, Receptivity to Feedback, and developed a short rating scale for assessment. In the past year we have implemented this scale as part of our PGY 1 and UME Year 2 and Year 3 OSCEs, resulting in ratings for nearly 300 standardized patient encounters. This report describes the scale and its development as well as preliminary findings about learner's ability to receive feedback.

13. Using Relations between M-3 Clerkship OSCEs and End-of-Year Benchmark OSCEs to Guide the Creation of a Competency-Based OSCE Exam

Robert Treat PhD, Medical College of Wisconsin

Dawn Bragg PhD, Medical College of Wisconsin

Deborah Simpson PhD, Medical College of Wisconsin

M-3 OSCE Clerkship Directors, Medical College of Wisconsin

Introduction With the shift to competency-based assessment, determining when students are prepared to take high-stakes OSCEs is essential. Can evidence collected from existing M-3 clerkship OSCEs and the end-of-year Benchmark OSCE (BOSCE) inform when high stakes OSCE's are offered? Methods OSCE checklists were used to collect dichotomous-scaled clinical skills items in 29 cases drawn from seven sets of clerkship OSCEs and BOSCE over the entire academic year of 2008/2009. Pearson correlations and linear regressions of M-3 OSCE percentage scores with BOSCE percentage scores, and reliability analysis via Cronbach alpha of all checklist items were analyzed with SPSS 15.0. Results Statistically significant ($p < .050$) correlations and stepwise linear regression models of 210 student BOSCE/OSCE scores from 2008/2009 indicated that by the fourth set of M-3 OSCEs (eighth month of academic year), it was possible to predict student BOSCE scores from their M-3 OSCE scores. All OSCE/BOSCE cases yielded checklist item data with internal consistencies (reliabilities) ranging from $\alpha = 0.50$ to 0.80 . Conclusions Evidence indicates that by the eighth month of the academic year, it is possible to adequately predict student BOSCE scores from their M-3 OSCE scores, giving faculty and simulation center staff a timeline for anticipating competent student performance, and helping provide guidance for creating the competency-based OSCE calendar/schedule.

14. Integrating the Public in Health: A Series of Integrative Cases for Pre-Clinical Students

Christie Seibert MD, University of Wisconsin School of Medicine and Public Health

Renie Schapiro MPH, University of Wisconsin School of Medicine and Public Health

Amy Becker MA, University of Wisconsin School of Medicine and Public Health

Julie Foertsch PhD, University of Wisconsin School of Medicine and Public Health

PURPOSE: National organizations have called for better integration of public health in medical education. We introduced learner-centered events called Integrating Cases to allow students to examine issues from basic science, clinical, and public health perspectives. METHODS: We piloted four two-day Integrative Cases for Med 1 students in 08-09. Case topics were chosen to reflect Wisconsin health priorities: prematurity/infant mortality (focusing on disparity in birth outcomes of African Americans), screening/treatment of lipid disorders in children, and drunk driving. On the first day of each case, students are introduced to broad themes during a brief plenary. Then students complete a wide variety of active learning assignments in one of the following domains: basic science, clinical science, health systems, social/ethical, and public health. On the second day, students reconvene to apply knowledge gathered through activities, providing the opportunity to develop a broad multi-domain perspective of each topic. Cases were evaluated through on-line survey that asked students to rate achievement of goals and effectiveness of each session. RESULTS: Evaluations indicate cases are effective in helping students appreciate the medical and public health implications of these problems, with the community-based assignments the most highly-rated component. About 75% of students strongly agreed that the cases "provided experiences that offer a more expansive view of medicine and public health" and "stimulated interest and questions that anticipate future learning." CONCLUSION: Integrating Cases allow students to integrate a public health perspective in their coursework. Longitudinal follow-up will determine if these cases affect attitudes, behaviors and skills in public health.

15. Do Student Self-Reports Equal Observer Ratings for Curriculum Content Inclusions?

Paul Stellmacher BA, Medical College of Wisconsin

Deborah Simpson PhD, Medical College of Wisconsin

Diane Brown MS, Medical College of Wisconsin

Richard Leake M3, Medical College of Wisconsin

Shaun Daidone M2, Medical College of Wisconsin

Maria Burzynski M3, Medical College of Wisconsin

Edmund Duthie MD, Medical College of Wisconsin

Kathryn Denson MD, Medical College of Wisconsin

Objectives Curriculum committees and accrediting bodies rely on student self-reports to determine emphasis/inclusion of critical content within their educational programs (e.g. geriatrics). Limited information is available regarding the concordance of student retrospective self-reporting of content inclusion with observer based recording of content inclusion. Purpose is to determine overlap between these two data collection methods. Methods Four medical students (2 M2's, 2 M3's) were recruited and trained to audit the curriculum and rate the overall inclusion of selected AAMC "hot topics" (e.g. geriatrics) in their daily instruction. Auditors recorded content inclusion using a form (FormSpring©) pre-loaded to an iPod Touch, completing one form per formal instructional session (e.g. lectures, small group discussion) for M2 courses and M3 clerkships. Observation-based data was compared to retrospective M2 end-of-course and M3 end-of-rotation evaluations with respect to geriatric content inclusion. Results M2 (N=206/course) evaluation data reveals that 81% of students agree that geriatrics was present in daily basic science courses. M2 observations (N=95) of the same courses revealed that geriatrics-related topics were never "emphasized" or "mentioned" during instruction. M3 Medicine clerkship evaluations (N=195) showed that 73% agree that clinical instruction was linked to geriatric-specific content while M3 Medicine observations (N=24) revealed that geriatric competencies were "emphasized" in 21% (N=5) or "mentioned" in 29% (N=7) of observed instruction.

16. Obtaining Stakeholder Input to Guide Curriculum Change

Beth Krippendorf PhD, Medical College of Wisconsin

Joan Bedinghaus MD, Medical College of Wisconsin

Theresa Frederick, Medical College of Wisconsin

Michael Olivier PhD, Medical College of Wisconsin

James Sebastian MD, Medical College of Wisconsin

Karen Marcdante MD, Medical College of Wisconsin

Objective: Educational and health care leaders are calling for change in educational programs to ensure that medical students are adequately prepared. The change literature supports that participants will experience phases including denial, anger and bargaining in response to change. As we embark on a major curriculum change, we interviewed stakeholders to proactively identify concerns. Themes from interviews will aid us in design and implementation of our new curriculum. Methods: After identifying stakeholders, the authors created a semi-structured interview to identify concerns and perceived measures of success. We interviewed chairmen, course and clerkship directors and residency program directors. Interviews were recorded and notes transcribed. The authors reviewed transcripts, creating a list of common concerns to share with the change team. Results: Several themes were raised in all interviews. These included the need for explicitly supporting teaching faculty time and effort, the need to retain identity of departmental efforts, and needed additional resources to implement new activities. Faculty development issues were recognized by most. Expected measures of success include the expected traditional measures (e.g., USMLE scores) but also identified the need to measure both student and faculty engagement. Conclusions: Obtaining input from major stakeholders is key to addressing emotional responses that accompany any change effort. Our interviews have revealed many of the expected responses but highlight the need to address faculty identity as "specialists" and teachers.

17. SOAP Note Grading: Checklists or No Checklists

Valerie Hearn MD, University of South Dakota Sanford School of Medicine

Edward Simanton PhD, University of South Dakota Sanford School of Medicine

Introduction: Like many areas of clinical performance assessment, SOAP notes grading can be plagued with reliability issues. Purpose: The purpose of the study was to compare inter-rater reliability using 2 methods of SOAP Note grading (one checklist based and one not checklist based). Methods: A selection of randomly selected SOAP Notes from a recent OSCE were graded by group of experienced SOAP Note graders. All selected SOAPS were grade twice. For one grading a section by section holistic grading system was used based on a model SOAP Note. For the other grading, a checklist based grading form was used to grade the notes. Information was collected regarding efficiency of grading, preference of graders, inter-rater reliability, and differences in mean student scores using the two methods. Results: Study is ongoing. Final results are still pending. Conclusions: Study is ongoing. Final results are still pending.

18. Teaching Interprofessional Communication and Teamwork: A Standardized Patient Simulation

Beth Liston MD, PhD, The Ohio State University College of Medicine

Janet Wagner RN, PhD, Columbus State Community College

Jackie Miller RN, MS, Columbus State Community College

Janie Boyer, The Ohio State University College of Medicine

Interdisciplinary teamwork has long been identified as a key component in quality medical education. There is a growing body of literature suggesting that interdisciplinary teams can improve the management of chronic illnesses, decrease in-hospital length of stay and hospital costs, and help to avoid medical errors resulting from poor communication. Researchers have concluded that education on interdisciplinary teamwork should begin

prior to residency training. However, this is not a widespread educational practice in medical schools. Therefore, we developed an educational pilot utilizing a standardized patient simulation to teach interdisciplinary communication and teamwork. In this educational program, 10 teams consisting of a fourth year medical student, a senior nursing student and a patient family member (portrayed by standardized patient actress) were established to approach a standardized clinical scenario. Team members were each given different patient information, reflective of real-life practices in an inpatient setting. The scenario represented a critically ill patient, in whom end-of-life decisions were required. The medical student, nursing student and family member worked together to develop a plan of care. At the end of a pre-determined length of time, a patient 'code blue' was called and a plan of action was required from both student team members. All teams developed a plan of care for this critically ill patient, indicating communication and teamwork. Medical students and nursing students responded positively to this program. On a five point Likert scale, students indicated that the simulation was a valuable learning exercise (mean 4.6, std dev 0.49), the feedback session was a valuable learning exercise (mean 4.5, std dev 0.5) and that they would be better able to work on a multidisciplinary team as a result of this session (mean 4.3, std dev 0.60).

19. Approaching Faculty Development As Service Learning - Step Program

Deborah Simpson PhD, Medical College of Wisconsin

Karen Marcdante MD, Medical College of Wisconsin

Jeffrey Morzinski PhD, Medical College of Wisconsin

STEP Collaborative, Medical College of Wisconsin

Objective: Service-learning" is defined as a structured learning experience that combines service in response to community-identified concerns with preparation and reflection. While common to medical student education and an LCME accreditation standard, there are no published reports of service-learning applied to development of faculty as educators. The Safe Transitions for Every Patient (STEP) Faculty Development and Education collaborative's goal is to develop, implement and evaluate multi-specialty care transitions curricula while developing collaborative members as educators. Methods: During monthly ½-day classroom sessions 12 primary care faculty trainees collaboratively apply instructional design principles (e.g., a multi-method needs assessment to identify objectives; develop teaching plan and instructional materials) (learning) to identify the need and create a handoff/care transitions curriculum for medical students, residents and those who precept our trainees (service). Results to Date Sessions are highly rated for faculty development outcomes (learning) but trainees struggle with systems-based challenges associated with designing and implementing a multi-trainee level care transitions curriculum across multiple hospital systems (service). Trainees' learning and scholarly outcomes (to date) are equivalent to those associated with traditional teaching scholar programs, where each trainee identifies and pursues an individual project of interest. Conclusions The STEP collaborative is a novel approach to faculty development for educators. By applying principles drawn from service learning, faculty are prepared as educators while providing curriculum focused on identified institutional need for safe and effective patient transitions.

20. Teaching Cross-Cover Inpatient Care

Beth Liston MD, PhD, The Ohio State University College of Medicine

Janet Wagner RN, PhD, Columbus State Community College

Linda Daley RN, PhD, The Ohio State University College of Medicine

Jackie Miller RN, MS, Columbus State Community College

Tammy Montgomery RN, MS, Columbus State Community College

Lynnsay Sinclair, The Ohio State University College of Medicine

The average resident answers twelve pages per twenty-four hour shift while engaging in five to eleven activities per hour. As residency work hour restrictions change, these new physicians must frequently manage and answer pages on patients of whom they have limited knowledge. In this setting, the ability to rapidly collect and synthesize data is crucial. Additionally, effective communication with nursing is a key component in patient care and avoidance of medical error. Therefore, in conjunction with the OSU College of Nursing and the Columbus State Community College, we implemented an interdisciplinary educational initiative designed to teach telephone management and communication in the inpatient setting. Methods: At the beginning of their four week required inpatient rotation, fourth year medical students received a lecture on appropriate sign-out and the use of the communication tool 'SBAR' for acute inpatient issues. They were also given a sign-out list of simulated patients they were 'cross-covering' for the month. Upper class nursing students were given a full history on one of these patients as well as a change in clinical status. In the middle of their rotation, medical students were paged by the nursing students informing them of the change. The medical student then responded to the change asking questions, providing an assessment and recommendations. Nursing students and medical students completed an evaluation on each other to provide formative feedback. At the end of the inpatient month, medical students received a call from a physician faculty member simulating a nursing call. The medical students were then assessed on their response to the clinical change using the SBAR format. Results: During the end of the month simulated nursing call, 79 of 136 medical students responded ideally to the change in patient status using SBAR.

The most frequently missed item was in appropriately evaluating the situation; 32 of 136 students did not ask for vitals in an inpatient with an acute status change. Conclusion: Interdisciplinary telephone medicine can be effectively integrated into the medical school curriculum. Further work needs to be done to ensure all students master this competency.

21. Creating a Dialogue about Education Using "This I Believe...about Teaching and Learning"

Kellie Brown MD, Medical College of Wisconsin
LuAnne Moraski DO, Medical College of Wisconsin
Anne Warwick MD, Medical College of Wisconsin
Denise Uyar MD, Medical College of Wisconsin
Julie Fenzel MS, MBA, Medical College of Wisconsin
Karen Marcdante MD, Medical College of Wisconsin
Judith Rehm, Medical College of Wisconsin
James Sebastian MD, Medical College of Wisconsin
Deborah Simpson, PhD, Medical College of Wisconsin
DOCERE Collaborative, Medical College of Wisconsin

Objective Medical educators are constantly challenged to effectively share their experience and perspective in order to engage faculty and students in discussions about teaching and learning. Having recently launched a clinician educator pathway, we tested a new strategy to effect and sustain a dialogue about teaching and learning between faculty and students. Methods As part of a two-year educator development program, faculty authored short reflective essays (< 500 words) about teaching and learning modeled after the popular radio and book series entitled This I Believe®. The intent was to record the participants' personal stories – their “a-ha” moments as learners or educators. To trigger discussion and dissemination, essays were uploaded to a campus-based e-portal. Reactions to the task, to the essays, and intersecting themes have been identified. Results All educator development participants (15/15) submitted essays. Uniformly, faculty authors reported that writing the essay was very challenging. It was, “painful . . . I was completely intimidated after hearing (my colleague’s) essay. . . My creative writing skills have never been that great. . .” Essay listeners/readers were consistently moved and even overwhelmed: coming to tears over some and laughter over others. Common themes present in the majority of essays included motivation to teach, understanding learners' perspectives and the impact of experience in establishing credibility. Conclusions This I teach...This I learn has proven to be a powerful strategy for engaging and driving the dialogue between faculty and students around education. Overcoming authors' fears of “not good enough” remains an unresolved challenge.

22. A Clerkship Assignment to Report on a Witnessed Communication in the Clinical Setting

Joanne Lynn MD, The Ohio State University College of Medicine
Chad Hoyle MD, The Ohio State University College of Medicine
Adam Quick MD, The Ohio State University College of Medicine
Cynthia Ledford MD, The Ohio State University College of Medicine

Objective: A needs assessment for our curriculum resulted in development of a professionalism curriculum based upon learning activities to be spread across the major core third year clerkships. The neurology clerkship was instructed to include a session focused on collegiality and communication skills. An assignment was made for each student on the clerkship to observe communications between patients and healthcare workers or between healthcare workers that were either exemplary or remarkably flawed or counterproductive. One goal was that the requirement to observe for a noteworthy communication would cause students to be more mindful and reflective about the communications that occur all around them in the clinical clerkship environment. Methods: Students were asked to turn in a paragraph about their observations to the clerkship director. These observations about communications were compiled and then shared for discussion with students on subsequent rotations. Results: We will report on the ratio of reported excellent versus poor communication instances described. Theme analysis of these observations will be conducted and reported for the first 6 months of the 2008-2009 year. Conclusions: Common themes included: patience and respectful communications with angry family members, calmness of communications in anxiety provoking situations, deft difficult communications re topics such as withdrawal of care, failure or delay of communications, and anger of one attending taken out upon a resident. This type of exercise can be done in any clerkship setting and does not require an onerous amount of time or effort.

23. Student Perceptions on Using Mobile Learning Technology in the Emergency Department Prior to Patient Encounters

Matthew Tews DO, Medical College of Wisconsin
Tomer Begaz MD, Medical College of Wisconsin
Robert Treat PhD, Medical College of Wisconsin
Kimberly Poindexter, Medical College of Wisconsin

Objective: In the busy Emergency Department (ED) environment, time constraints limit the amount of bedside

teaching. Hand-held mobile learning technology provides opportunities to develop clinically relevant self-instructional modules. We sought to evaluate medical students' perceptions of using short, mobile learning videos prior to patient encounters. Methods: Thirty medical students received 5-6 minutes of video instruction using the iPod Touch on the approach to patients with chest pain, difficulty breathing, or abdominal pain prior to patient encounters. Students were then surveyed on their perceived effectiveness when using these instructional videos. All survey items were on a 7-point Likert scale (1=strongly disagree, 7=strongly agree). Medians, inter-quartile ranges, and reliability analysis were generated with SPSS 15.0. Results: The reliable ($\alpha=0.97$) survey data indicated that students thought the videos presented important content (Median (Inter-quartile Range (IR))=7.0 (1.0)), and were of appropriate length(6.0 (2.0)). Students felt more confident presenting a focused history (6.0 (1.2)), a focused physical exam (5.5 (2.0)) and a specific plan for patient care (5.0 (1.0)) to their attending. The students also felt the videos were a useful teaching tool (7.0 (1.0)). Eighty percent of students preferred to use quick videos to review a topic prior to seeing a patient. Conclusion: The use of mobile instructional videos prior to patient encounters was perceived by students to improve their confidence with presentations and was a preferred teaching modality. This use of technology in medical education is evolving and should be studied further to determine the optimal application for educating students at the bedside.

24. **Preemptive Exposure to Geriatrics: An Undergraduate Chronic Care Internship**

Maura Waldron, Saint Louis University School of Medicine

John Eppensteiner, Saint Louis University School of Medicine

Miguel Paniagua MD, Saint Louis University School of Medicine

PURPOSE: The demographic imperative for preparing the physician workforce to care for increasing numbers of elder Americans is looming. To preempt increasing efforts of medical schools to educate students in areas of gerontology, The Division of Geriatrics along with the Pre-Professional Health Studies office of Saint Louis University have taken initiative to begin this process at an undergraduate level with a experiential nursing home-based elective internship and companion program. This experience was conceived from a curricular needs assessment conducted prior to the initiation of the internship, and utilized student-derived course objectives that were implemented as the course was initiated. The specific themes desired of the course included: 1) Patient experience, 2) Medical school application enhancement, 3) Experience shadowing physicians, 4) Exposure to the overall experience within the medical professions, 5) Specific Geriatric Medicine exposure, and 6) Exposure to ethics-related issues. **METHODS:** A "Chronic Care Medicine Internship" was created with the intention of encompassing the six course themes through 1) A weekly elder companion and volunteer program , 2) Weekly Geriatric Medicine rounds, 3) A student-initiated quality improvement project, and 4) A topical weekly lecture series. Pre-and post-course surveys were used to examine students' attitudinal changes towards elders. Reflection assignments related to each weekly lecture and a post-course essay were used to qualitatively evaluate the effect of the course on students' perception of issues in geriatrics, such as frailty, learned helplessness and communication challenges. **RESULTS:** On a five point Likert scale (strongly disagree to strongly agree) students had an average 0.5 decrease when asked "As people grow older, they become less organized and more confused." ($p<.01$), and an average 0.77 point decrease when asked "Treatment of chronically ill old people is hopeless." ($p<.001$). These changes indicate a reduction in negative stereotypes during the internship. The qualitative analyses showed an increase in knowledge of various aspects of geriatric medicine including but not limited to learned helplessness, frailty, and in effective communication. **CONCLUSION:** An early and frequent exposure to frail nursing home residents proved to be integral in increasing pre-professional students' positive attitudes towards elders and the field of geriatrics. Further analysis of qualitative data from the reflection exercises have illustrated a rich understanding of communication challenges as well as an appreciation of the concepts of learned helplessness and frailty.

25. **Impact of a Competency-Based Curriculum on Medical Student Advancement**

James Brokaw PhD, MPH, Indiana University School of Medicine

Laura Torbeck PhD, Indiana University School of Medicine

Mary Alice Bell MS, Indiana University School of Medicine

In 1999, the Indiana University School of Medicine implemented a competency-based curriculum, one of the first of its kind in the nation. If a student fails to demonstrate satisfactory performance in any of the 9 core competencies, he or she is referred to the Student Promotions Committee (SPC) for review and action. Using SPC records, we determined the frequency of competency-related deficiencies reported to the SPC over time, the nature of those deficiencies, and how the deficiencies were remediated. In the decade from 1999-2009, 189 students (138 males, 51 females) were referred to the SPC for one or more competency-related deficiencies in 8 performance domains: effective communication; basic clinical skills; lifelong learning; self-awareness, self-care, and personal growth; social and community contexts of health care; moral reasoning and ethical judgment; problem solving; and professionalism and role recognition. For the purposes of this study, students with traditional academic performance issues were excluded from analysis. Collectively, the 189 students were cited for 314 separate competency-related deficiencies (1.7 per student). Of these 314 deficiencies, the most prevalent were in the competencies of professionalism (29.6%), basic clinical skills (28.9%), and self-awareness

(17.8%). Each of the remaining competencies was less than 10%. Successful remediation utilized 12 methods ranging from a simple warning letter to being required to repeat the year under close monitoring. Remediation was unsuccessful for 17 students (9%) who were dismissed from school. Based on our experience, we believe that unprofessional behaviors and other competency-related deficiencies can be identified and remediated in most cases.

26. The Professionalism Log: A Means for Providing Formative Feedback

Christopher Reznich PhD, Michigan State University College of Human Medicine

Janet Osuch MD, Michigan State University College of Human Medicine

Objective We have embraced professionalism as a key programmatic outcome for our preclinical students. The challenge of providing our medical students with formative feedback on their professional conduct has engendered the need for an innovative method to track situations when students are acting consonant with professional expectations and when they fall short. **Methods** In academic year 2008-2009, we developed a "professionalism log" for providing feedback and for recording professionalism lapses. Student expectations were codified in a set of "lapses and consequences" in their clinical skills sequence, specifying reasonable expectations with respect to basic tasks such as timely submission of required assignments. We sought to mirror the professional environment with respect to expectations and consequences - for example, being cited for not submitting chart notes on time. **Results** Of 286 preclinical students, 181 incidents were reported. 124 students received at least one professionalism lapse citation; 41 received praise entries. The majority of students cited had one lapse, while three students had five. All students were provided with written feedback. Those having four or more (n = 5) had meetings with College administrators; all were referred for counseling because of personal circumstances. The most common entry was for late assignment submission. Complete results will be presented at the conference. **Conclusions** Professionalism lapses during the clinical skills curriculum were not frequent. The project includes all courses for academic year 2009-2010. Tracking the personal conduct of students in the preclinical curriculum and providing formative feedback may be a means of reinforcing expected behavior.

27. Community Engagement and Service Competency Curriculum Pilot:: Insight From One School's Experience

Elizabeth Ryan EdD, Feinberg School of Medicine, Northwestern University

Lauren Taylor MEd, Feinberg School of Medicine, Northwestern University

Thomas Staff MD, MPH, Feinberg School of Medicine, Northwestern University

Robert Golden MD, Feinberg School of Medicine, Northwestern University

The purpose of Northwestern University's Feinberg School of Medicine's (NUFSM) Community Engagement and Service (CES) Competency is to promote the growth and development of leaders in community engagement by teaching students how community factors influence individual, community and public health; how to collaborate with communities; and how to promote quality health through service and community-based participatory research. This CES Curriculum Pilot is theoretically grounded to a literature search identifying best practices for a service-learning curriculum and to the experiential learning pedagogy of Dr. John Dewey which included a six step process of inquiry. Central themes of definitions that lend to "best practice" in CES include: a curriculum built on partnership(s); a credit bearing learning opportunity (credit given to the learning, not the service); an experiential learning opportunity; reciprocal learning; reflection and public dissemination. In 2009, NUFSM integrated the college system (1/4 of each class makes up 1 "college") into "societies", (a society is comprised of vertically stacking 4 colleges (M1-M4)). The CES Curriculum pilot is implemented through the "Patient Physician and Society" curriculum in the college and society structure and the required "College Curriculum Focus" (CCF) project. Currently the CCF is a college project lasting six weeks. However the CES Competency Task Force has petitioned to improve upon this experience by changing it into a longitudinal service-learning curriculum integrating the project each year vertically within each society. Lessons learned from this pilot will be disseminated and the program evaluated for effectiveness, specifically focusing on each component of the model described above.

28. Integrating Population Health Concepts into an Evolving Innovative Curriculum

Staci Young PhD, Medical College of Wisconsin

Linda Meurer MD, Medical College of Wisconsin

Purpose: Physicians must take on a greater leadership role in improving systems of care and advocating for policies that improve the individual and community health. As part of an overall process to integrate population health into our newly evolving curriculum, we have developed and applied a unifying framework and aligned population health competencies with five new curriculum pathways. **Methods:** Our strategies focused on raising the visibility and effectiveness of existing curriculum and developing a common message across relevant courses and clerkships. The population-based patient centered care model stresses the physician's professional responsibility across expanding domains of influence to consider the determinants of patients' health status, to guide interventions for individuals and populations, and to advocate for systemic changes to improve health. We then developed a matrix of population health topics linked to each pathway to emphasize the applicability of core

concepts in clinical care, research, urban/community health, global health, and education. Results: The population-based patient centered care model has been incorporated into courses across all four years of medical school. Future strategies will include engaging a broad community of mentors; expanding community-based service learning opportunities; using educational technologies; and tracking student performance on assessment of knowledge and attitudes over the 4-year curriculum. Conclusion: Utilizing a unifying framework and aligning its foundational competencies with a newly evolving curriculum are novel approaches to incorporate population health concepts and prepare young physicians with the skills, knowledge, and attitudes needed to shape our system to improve the health of the public.

29. Adapting Educator's Portfolio for Student Clinician Educator Pathway

Alecia Huettl BS, Medical College of Wisconsin
Richard Leake, Medical College of Wisconsin
Christopher Anderson, Medical College of Wisconsin
Deborah Simpson PhD, Medical College of Wisconsin
Patricia Lye MD, Medical College of Wisconsin

Purpose: Medical schools are establishing areas of concentration or pathways to provide another "lens" for students to learn about practicing medicine. In September 2009, the Medical College of Wisconsin announced the creation of five pathways including a Clinician Educator Pathway (CEP). To capture student's CEP related activities, a formative and summative evaluation documentation system was needed. While faculty has long used Educator's Portfolios to capture their activities as teachers, curriculum developers, and evaluators, student use of an educator's portfolio has been limited. This poster will highlight the commonalities and differences between student and faculty portfolios for education. Methods: The educator categories highlighted in the July 2007 AAMC report entitled Advancing Educators and Education: Defining the Components and Evidence of Educational Scholarship served to frame the student portfolio. CEP student council members piloted the portfolio template and then served as instructors during the CEP orientation using their portfolios as examples along with a portfolio worksheet. Results: Faculty portfolio categories were subdivided to accommodate activities that occurred in the context of a required role (e.g., Teaching: formal presentation as part of a clerkship versus extra-curricular teaching to 5th graders). Students had limited evidence of quality or documented data. Conclusions: CEP student portfolios can be modeled after faculty portfolios but students need training in appropriately categorizing and formatting education activities and obtaining evidence of quality. Keeping a student educator portfolio will enhance teaching experiences through learning appropriate evaluation of their activities, and can serve as a springboard to an academic educator portfolio.

30. Video Killed the (Bad) Educator

Lauren Taylor MEd, Feinberg School of Medicine, Northwestern University
Elizabeth Ryan EdD, Feinberg School of Medicine, Northwestern University
Jon Lomasney MD, Feinberg School of Medicine, Northwestern University
Peter Scott BA, Feinberg School of Medicine, Northwestern University

Advances in educational technology first being used to help students study is now being utilized as a faculty development tool. In 2008-2009 Northwestern University Feinberg School of Medicine (NUFSM) began video recording lectures in the second year course Scientific Basis of Medicine (SBM). First thought of as purely a review mechanism for students to study, it is now in its second year with a utility to assist in faculty development. This pilot study will recruit 15-20 volunteer SBM lecturers to watch their own lectures, complete a self-assessment based on a behavior checklist and meet with an educator. Each lecturer will be asked to identify: what did they do well, areas for improvement, how they will incorporate change in the future. Each participant will meet with a medical educator, who has already watched the lecture and filled out the same assessment. The educator will provide them feedback on their performance anchored to the checklist after hearing the self assessment. Research Questions: 1. Do the lecturers perceive this type of activity being beneficial? 2. What themes emerged out of the feedback sessions (specifically strengths and areas of improvement: presented main points, clear and organized, summarized major principles, encouraged active participation.)? 3. Did the lecturer participate in faculty development as a result of this exercise? 4. Was an action plan developed? Was there follow through? The authors anticipate that this type of faculty development exercise could be implemented at other schools which utilize lecture-capture technology.

31. Development of Virtual Patient Simulations for Medical Education

Douglas Danforth PhD, The Ohio State University College of Medicine
Mike Procter BS, Athabasca University, Canada
Robert Heller PhD, Athabasca University, Canada
Eloise Pasteur BA, York, UK
Richard Chen MD, The Ohio State University College of Medicine
Mary Johnson PhD, Florida State University College of Medicine

Virtual Worlds such as Second Life provide unique opportunities to simulate real life scenarios and immerse the

user in environments that can be tailored to meet specific educational requirements. They can be used to model doctor-patient interaction, clinical diagnosis skills, and three dimensional objects ranging from individual molecules and cells to whole organs. The principal goal of this project is the development of virtual patient simulations for medical education. In order to simulate real patients with greatest fidelity, the virtual patients are controlled by artificial intelligence. This allows students to engage in a natural language conversation with the patient to obtain relevant patient history, symptoms, etc, and then to develop differential diagnoses and treatments appropriate for the simulated condition of the patients. The simulation is designed to provide students with a variety of undifferentiated patients to sharpen their diagnostic skills, as well as allowing the students to rehearse professional behaviors in a risk-free environment, providing opportunities for skills practice and feedback prior to real-world patient encounters.

32. Honoring Faculty Educators with the Courage to Teach

Dawn Watson BS, The Ohio State University College of Medicine

Rebecca Sieber-Denlinger BA, The Ohio State University College of Medicine

As Parker Palmer has written, those with the Courage to Teach should be honored and valued. Our project began as a way to look at each area of the Ohio State University College of Medicine and find ways to honor those members of the teaching faculty that are revered by students and residents for their passion for education. We felt that if we worked with a small core group in each department, we could then 'cascade' the support for teaching through each department. The Department of Obstetrics and Gynecology was selected as a pilot department for the program. Initially, two faculty members were chosen based on their commitment to the education mission and their reputation as servant leaders. They were interviewed concerning their personal stories and their journey into medical education. These 'seed' faculty were the beginning of the cascade that would help the Department and the College recognize those dedicated to creating humanistic environments for teaching and learning. Common threads among the faculty were identified including their excellence clinically and their interest in medical education. But, another thread emerged: that of a common interest in the arts. As faculty members identified their love of theatre, of music, of painting, of dance, of photography and so much more, we determined that a way to bring the education community together could be through the arts. Our poster will outline our journey to honor those who love to teach while building education relationships based on a love of the arts.

33. What's Behind the Curtain: Planning and Infrastructure Considerations for an iTunes U

Jodi Delfosse MA, Medical College of Wisconsin

Kim Poindexter MS, Medical College of Wisconsin

Amy Bingenheimer MLS, Medical College of Wisconsin

Jeff Hagedorn MLIS, Medical College of Wisconsin

James Brust, Medical College of Wisconsin

Judi Rehm, Medical College of Wisconsin

Mary Blackwelder MLS, Medical College of Wisconsin

Deborah Simpson PhD, Medical College of Wisconsin

Objective Today's medical students are mobile learners - using iPods and other devices to listen to lectures, review for boards, and to view point-of-care instructional vignettes. As a private, free standing medical school, the Medical College of Wisconsin has established its own iTunes University with nominal infrastructure support, providing an "on-the ground experience" with site design and IT backend systems. We will present lessons learned to date. Methods After finalizing a contract with iTunes U, we convened two working groups: a college-wide Oversight Group composed of key stakeholders, and an administrative work group drawn from staff with expertise and roles related to iTunes U. As part of work group minutes and reports, we have tracked our lessons learned. Results: Lessons learned were reviewed with five general categories emerging. Key inclusions by category will be presented. (1) Start Up focuses on the purchase of iTunes related hardware and software with associated site licenses, obtaining stakeholder support, and funding/hiring key personnel to complement existing staff expertise. (2) Site Design & Implementation emphasizes the decisions around front page design, site navigation, authentication, workflow creation, and outsourcing decisions. (3) Content Creation centers on institutional standards, review processes and procedures prior to the posting of content. (4) Faculty Development includes skill sets for basic podcasts delivered F2F and online, along with recommendations for advanced productions. Conclusions Our recommendations to those who are considering the use of iTunes-like podcatchers include: have a plan; manage your time and resources; and maintain a sense of vision.

Research in Medical Education Poster Abstracts

34. Attitudes and Perspectives on Ophthalmology Resident Training: The APORT Study Series

Matthew Welch MD, Loyola University Chicago Stritch School of Medicine

James F. McDonnell MD, Loyola University Chicago Stritch School of Medicine

OBJECTIVE: To assess patient perceptions of resident training, resident participation in medical care, and resident participation in surgical care within the medical specialty of Ophthalmology. **METHODS:** Data were collected through a voluntary and completely anonymous 13-question multiple choice survey from 121 adult patients at the Loyola University Medical Center Ophthalmology clinic. **RESULTS:** Only 49% of surveyed patients selected the most accurate definition of a resident physician. The majority (74%) felt that using the term "assist" as a way to describe resident involvement in a surgical procedure indicated that the resident would be performing parts of their surgery, but not the entire procedure. Forty-eight percent of patients would prefer to be given the option to choose whether they be subjected to a resident examination prior to their attending physician; while a large majority (85%) agreed that residents should be involved in the general care and surgical care (64%) specifically, of all patients at a teaching hospital. Only 35% of patients reported being comfortable having resident physicians perform a portion of their surgical procedure; while 11% were comfortable having residents perform their entire surgical procedure. **CONCLUSIONS:** Our study indicates highly varied opinions amongst patients regarding the involvement of ophthalmic resident physicians in their care. In order to establish better training and teaching practices, we must thoroughly understand the entire teaching environment, which includes the attitudes and perspectives of the patients within a training institution. By understanding our patients' perspective on resident involvement, we can ultimately provide better patient care.

35. Engaging Faculty Members in Defining the Required Clinical Skills for Medical Students

Hugh Stoddard PhD, MEd, University of Nebraska College of Medicine

Paul Paulman MD, University of Nebraska College of Medicine

Objectives At UNCOM, the clinical skills requirement is a curricular element that is not part of any one specific course. Management of a 'standalone' curriculum demands a consensus from faculty members. To this end, a 'grassroots' survey to redefine the required clinical skills was selected to gather data and generate 'buy-in' from all faculty. **Methods** A survey was presented to all faculty members consisting of 89 skills. Respondents identified the skill's importance to medical students, then responses were coded numerically. An exploratory factor analysis was conducted to sort the skills into groups. A validity check was done to verify that the items which statistically 'loaded' onto each factor were conceptually related as well. **Results** Survey respondents were uniformly distributed across all levels of teaching and academic ranks and responses from all groups were similar. Eighteen components were extracted in the initial solution, which explained 71% of the total variance; however, no variables loaded positively on to component 18, so it was discarded. **Significance** The component structure of the responses revealed that the importance of procedures was based not only on the procedure itself but on the student participation. For a student to 'perform' a procedure loaded differently than to 'interpret' that same procedure. Performing procedures was considered to be less important than interpreting the results. Previous versions of the clinical skills list had been compiled by a small number of select faculty members. The faculty considered the cognitive processes used to interpret data and to do clinical reasoning to be more important than performing procedures. Conducting the factor analysis allowed us to pare down the list of skills while retaining the intent of the survey respondents.

36. Web-Based Curriculum Improves Residents' Knowledge of Healthcare Business

Linnea S. Hauge PhD, University of Michigan Medical School

David A. Butz PhD, University of Michigan Ross School of Business

Paul G. Gauger MD, University of Michigan Medical School

Deborah Harkins RN, University of Michigan Healthcare Systems

Adam C. Frischknecht MSE, University of Michigan Medical School

Paul A. Taheri MD MBA, University of Vermont College of Medicine

Purpose: This study examines surgery residents' experience and learning outcomes associated with a web-based curriculum on healthcare business developed collaboratively by experts in business, surgery, and education. **Methods:** Twenty-eight PGY3-6 general and plastic surgery residents enrolled in a web-based curriculum for learning principles of healthcare business. Twenty-two residents (79%) completed the curriculum, including a pre-test, 12 learning modules, a post-test, and a course evaluation. Most (91%) residents who completed the course had minimal or no background in business, and 81% had moderate or extensive interest in learning about the business of healthcare. The pre-test and the post-test are 30-item multiple-choice exams based on the curricular objectives. Descriptive statistics were calculated on course evaluation and module

completion data. Paired t-tests were used to compare pre- and post-test performance. Results: Residents' performance improved significantly ($p < 0.0001$) from the pre-test ($m = 59\%$, $sd = 11.9$) to the post-test ($m = 79\%$, $sd = 9.5$), with an average gain of 20 percentage points. Time to complete the curriculum ranged from 4-12 hours ($m = 7.06$ hours, $sd = 2.19$ hours). Participants rated their experience as very positive, with a majority agreeing the content was well-organized, relevant, and an excellent learning experience around content not taught elsewhere in medical school or residency. Conclusions: Participation in a web-based curriculum on healthcare business improves surgery residents' knowledge about healthcare business principles. Residents with varying levels of interest in healthcare business provide positive ratings about their learning experience. This curriculum is a feasible and effective method for teaching and evaluating systems-based practice and practice-based learning concepts.

37. Anxiety Among Radiology Residents Beginning Call

Andrew Trout MD, University of Michigan Medical School
Richard H Cohan MD, University of Michigan Medical School
Janet E Bailey MD, University of Michigan Medical School
N. Reed Dunnick MD, University of Michigan Medical School

Objectives or purposes To assess anxiety among Radiology residents beginning independent plain film call.
Methods, techniques or modes of inquiry, including data sources or evidence (if applicable) We administered the Endler Multidimensional Anxiety Scales (EMAS) to first year residents on Days 1, 2 and 5 of their first week of independent plain film call. We also surveyed the residents about confidence interpreting plain films, nuclear medicine studies and performing procedures. Self-reported accuracy was quantified on Days 1 and 2.
Results/conclusions/point of view Among 10 first year Radiology residents, mean total scores (T) and scores on the autonomic emotional (AE) and cognitive worry (CW) components of the EMAS were as follows: 48.5, 23.6, 24.9 on Day 1; 38.5, 17.4, 21.1 on Day 2 and 29.3, 13.2, 16.1 on Day 5. Day 1 scores placed residents at the 88th percentile among age matched controls. Scores declined significantly across time ($p = 0.004$ T, $p = 0.01$ AE, $p < 0.0001$ CW) placing residents at the 52nd percentile by Day 5. There was additionally a significant increase in confidence in the interpretation of plain films ($p < 0.0001$), most pronounced between Days 1 and 2 ($p = 0.015$). Other confidence scores did not change significantly over time. Accuracy was not significantly different between Days 1 and 2. Educational or scientific significance Radiology residents are highly anxious as they begin independent call but this anxiety improves significantly over the course of a week with an associated increase in confidence. Our investigation will continue as we assess the ability of a pre-call experience with more senior residents to ease the transition to independent call.

38. Developing Teaching Scholars: Pre and Post Self-Assessment of Scholarship Skills

Carol Hasbrouck MA, Ohio State University College of Medicine
Rollin Nagel PhD, Ohio State University College of Medicine
William Andy Hudson EdD, Ohio State University College of Medicine
Larry Hurtubise MA, Ohio State University College of Medicine
David Way MS, Ohio State University College of Medicine

Developing Teaching Scholars: Pre and Post Self-assessment of Scholarship Skills
Objectives: A pre and post self-assessment survey of Scholars' skills in 27 scholarship areas was administered to assess whether Ohio State's newly established Faculty Teaching Scholars Program had an impact on the Scholars perceived skills.
Methods: The pre/post survey was administered prior to the Faculty Teaching Scholars sessions and at the end of the 15-month program. The twenty-seven item 10 point survey required each of the 12 Scholars to indicate his/her current level of perceived scholarship skill in each of the areas, with 1 being "zero" skill and 10 being "proficient." The items included a wide range of skills, such as identifying research questions, ability to critically evaluate literature, identifying research variables, identifying funding opportunities, developing data collection instruments, developing an article for publication, etc.
Results: All Scholars responded to the pre-assessment and eleven of twelve Scholars responded to the post-assessment survey. One Scholar responded all 10's on the pre-assessment, so that Scholar and the non-respondent were removed from these analyses. One-tailed paired t-tests analyses were performed to compare pre to post ability for each skill. There was significant improvement for 13 of the 27 items, 13 other items showed improvement but did not reach significance, and one item remained unchanged.
Conclusions: The scholarship portion of our Teaching Scholars Program was deemed successful based on the Scholars' improvement in perceived scholarship skills. In the future additional outcomes, such as program evaluation data, number of presentations and publications of Scholars, and leadership positions held by Scholars will also be assessed.

39. Research Among Internal Medicine Residents: A Comparison of Resident Involvement in Research Before and During Residency at an Academic Medical Center

Imran Khan MD, Metrohealth Medical Center, Case Western Reserve University
Imran Khan MD, Metrohealth Medical Center, Case Western Reserve University
Kiran Anna MD, MRCP(UK), Metrohealth Medical Center, Case Western Reserve University

James C Pile MD, Metrohealth Medical Center, Case Western Reserve University

Background: We hypothesized that residents have difficulty becoming involved in research during residency. The purpose of our study is to (a) describe research activity amongst residents before and during residency at a center with total awards of almost \$41 million in 2007 and (b) identify obstacles to resident involvement in research. Methods: An anonymous questionnaire was distributed to internal medicine residents PGY1-4. Preliminary residents were excluded. Results: 45 residents responded, a response rate of 51%. 98% of residents expressed interest in research, with 80% primarily interested in clinical research versus 7% in basic science. 68% of residents were involved with research before commencing residency, while 60% reported pursuing a research project during residency. 40% of resident research was related to cardiology or gastroenterology. 24% were involved with bench research before residency, compared to 2% during residency. 42% of respondents reported presenting posters/publications before residency, versus 11% during residency. 48% of respondents felt research involvement was difficult, and 40% cited lack of guidance/mentorship as a significant hurdle. Conclusions: Factors including lack of direction and identification of appropriate mentorship appear to be barriers to resident research involvement, despite substantial departmental research funding. We propose interventions such as a research mentor in each department to act as a key contact, guidance at orientation, and displaying ongoing research projects on the hospital intranet to ensure enhanced visibility. We intend to re-audit 1 year post intervention.

40. Medical Student Attitudes Regarding the Accuracy and Precision of the Physical Examination

Toshiko Uchida MD, Feinberg School of Medicine, Northwestern University

BACKGROUND Although many clinical skills faculty feel that medical students place little value on the physical exam (PE) in comparison to other diagnostic tests and that this attitude only becomes more pronounced as students progress into their clinical years, there is little empiric evidence to document these observations. Among the numerous reasons that students may devalue the PE, they may feel that the PE lacks accuracy and/or precision. METHODS A survey was administered to the entire class of M1 students (N=169) and a convenience sample of M3 students (N=31). The survey inquired about the students' attitudes toward the accuracy and precision of the PE in comparison to other diagnostic tests. RESULTS Both the M1 and M3 students felt that the PE was significantly less accurate and less precise than other diagnostic tests ($P < 0.001$ for all comparisons between PE and other tests). In addition, when compared to M1 students, M3 students gave significantly lower ratings for both the accuracy and the precision of the PE. In comparison, except for accuracy overall, there were no significant differences between the M1 and M3 impressions of the other diagnostic tests besides the PE. CONCLUSION These results confirm what medical school faculty have long suspected. Both preclinical and clinical students feel that the physical exam is less accurate and less precise than other diagnostic tests. Students' opinions of the physical exam decline over time whereas for the most part there is no change in their attitudes toward other diagnostic tests.

41. Impact of Group Size on the Effectiveness of a Resuscitation Simulation Curriculum for Medical Students

Tomer Begaz MD, Medical College of Wisconsin

Jessica Corcoran MD, Medical College of Wisconsin

Robert Treat PhD, Medical College of Wisconsin

Matthew Tews DO, Medical College of Wisconsin

Objective: To assess the impact of varying simulation group size on medical students' subjective experience of resuscitation scenarios and on their performance a post-simulation exam. Method: In this IRB approved study, fifty four third year medical students participated in simulated cardiac arrest simulations. Students were randomly assigned to group sizes of 2, 3, or 4. Retrospective pre-post assessment of student's self-reported confidence and knowledge of medical resuscitation was acquired through seven-point Likert-scale survey items and analyzed with Wilcoxon signed-rank tests. Student performance on a post-simulation exam was analyzed to determine the impact of group size on test performance via Kruskal-Wallis ANOVA tests. The internal consistency of the data was analyzed via Cronbach alpha. Results: Reliable survey data ($\alpha = 0.86$) revealed statistically significant increases in students' self-reported confidence and knowledge for all participants ($p = .001$). There was no statistically significant difference in students' performance on the post-simulation written exam as a function of group size (all $p > .050$). There was no difference in student perception of the effectiveness or realism of the simulations between groups of 2, 3 or 4 students ($p > .050$). Significance: Students reported that the simulation experience was effective in increasing their knowledge and confidence of resuscitation skills. Varying group size from two to four students had no effect on the subjective experience or exam performance. Further study is warranted in order to clarify the optimum group size for such simulations, which has practical time implications for medical student educators.

42. The Relationship of Emotional Intelligence to Academic Performance and Perceived Stress in First Year Medical Students Part II: A Qualitative Inquiry

Elizabeth McClain PhD, University of Kansas Medical School

Tony Paolo PhD, University of Kansas Medical School

Marc Mahlios PhD, University of Kansas

Purpose: To better understand the shared experience of first year medical students' definition and view of Emotional Intelligence (EI) and IQ as it related to success. Methods: A phenomenological qualitative research approach was utilized with 32 first year medical students in 4 focus groups. Common themes were triangulated with previous quantitative findings of EI academic performance and perceived stress. Results: EI was experienced as ability to respond, read and perceive self and others. Balancing stress regulated ability to perceive, read and understand self and others, as well as general well-being. This reflected negative correlations between EI and stress. When comparing intelligence to success, participants identified complexity and subjectivity of success. It was surrounded by experiences of focus, drive and achievement of goals reflected in positive correlations between EI and GPA. It was tempered by environment and acceptance of individuality and diversity in success. As a paradigm, personal interpretation was the driving force of success. Conclusions: For first year medical students in the fall, balancing and prioritizing was easier than interacting. Actively perceiving, acknowledging, then plan for stress was equally influenced by IQ and EI, supporting the quantitative negative relationship between EI and perceived stress. In the fall success was limited to academic performance supported by quantitative positive relationship between EI and GPA. As students became comfortable with their future as physicians, willingness to expand and redefine success increased. Though academic success was an important measurement, it was not the only one with which many wished to measure their performance.

43. Assessing Professionalism: How Do Different Departments Perform?

Trisha Thompson BA, University of Iowa Carver College of Medicine

Kim Ephgrave MD, University of Iowa Carver College of Medicine

Kristi Ferguson PhD, University of Iowa Carver College of Medicine

Background: Assessing professionalism has become important in medical education, both because it is a requirement for accreditation of graduate medical education programs and because professionalism lapses during medical school and residency have been repeatedly linked to subsequent lapses during medical practice. Methods: We designed and implemented a 12 item, 7 point Likert scale professionalism instrument in several core clinical departments in 05/06 for residents and faculty to assess each other. We compared those results with 08/09 and with 3 professionalism items on a 5 point Likert scale teaching collected from students, and then compared the patterns between departments. Results: Departmental composite means were all high, but differed significantly. All but one department (which did not require the form till 08/09) showed overall improvement in professionalism over time. In several departments residents rated faculty higher than vice versa, which was confirmed by the separate student instrument. Each department had a different behavior which correlated most strongly with the item "Exemplifies professional behavior". Conclusions: A 12 item professionalism scale demonstrates departmental differences in professionalism ratings of faculty by residents and vice versa which persist over time, in the same pattern as seen in 3 professionalism items utilized by students to assess both faculty and residents. The brief professionalism measurement by students gave similar results to the longer form, but only the departments with faculty and residents repeatedly assessing each other significantly improved their professionalism scores. Departments differed in overall scores, items correlating best with professionalism, and whether faculty scored higher than residents.

44. Reaching Beyond the Textbook in Teaching Geriatric Care: Implementing a Senior Home Visit Project in Undergraduate Medical Education

Jennifer Mendez PhD, Wayne State University School of Medicine

Nelia Afonso MD, Wayne State University School of Medicine

Mary Elizabeth O'Connell Pharm D, Wayne State University College of Pharmacy

Carol Stutrud BS, Wayne State University College of Pharmacy

The graying of America has resulted in a need for better understanding between health care professionals who care for older adults. This program placed year two medical students (n=284) and year three pharmacy students (n=92) with independently living seniors in homes or community locations to learn about aging issues in a real life social context. Pharmacy students were paired with medical students to complete the visit. Students had the option of choosing their own family member or friend to complete the project, or were matched with a senior volunteer recruited from a large urban metropolitan community. Prior to the visit, students completed an aging attitudes assessment pre-test. The visit lasted between one and two hours where the medical students assessed ADL's, IADL's, and utilized a social context questionnaire. Pharmacy students completed a pill bottle assessment and a pharmacy social context questionnaire. After the visit, students completed the aging attitudes assessment post-test. The goals of this real-life immersion experience were 1) to help students better understand the preferences and support systems of community dwelling older adults, 2) enlighten students to issues in aging, 3) foster positive attitudes toward caring for older adults early in career development, and 4) build an ethic of civic responsibility in professional students. This presentation will discuss preliminary assessment results and offer ideas on how to further develop and integrate this program into undergraduate medical education curricula.

45. **Do Audition Electives Improve Competitiveness in the National Residency Matching Program?**
Kathryn Huggett PhD, Creighton University School of Medicine
William B. Jeffries PhD, University of Vermont College of Medicine
Amanda S. Lofgreen MS, Creighton University School of Medicine
Nicole Borges PhD, Wright State University Boonshoft School of Medicine
 Objective To identify perspectives and beliefs held by medical students, residency program directors, and AAMC Careers in Medicine (CiM) liaisons about the significance of audition electives and how these perspectives influence career planning and the residency match process. Audition electives were defined as electives taken by students to distinguish themselves and demonstrate interest to residency program faculty. Methods In 2009, we invited 2006 fourth-year students (pre-Match), 2109 fourth-year students (post-Match), 857 program directors, and 47 CiM liaisons in the Central Region to complete web-based surveys. Results Response rates were: 13.9% students pre-Match; 11.2% post-Match; 15% program directors; and 45% CiM liaisons. 49% of students reported they were advised to complete an audition elective before completing their match rank list, and usually this advice came from residents, peers, or faculty other than their CiM liaison, clerkship directors, or Associate Dean for Students. Median number of audition electives completed was 1.6. While 36% of program directors reported audition electives were important, 80% reported students' performance during audition electives was influential. CiM liaisons estimated that 26% of residency programs require audition electives, and reported advising a mean of 29 students to complete audition electives last year. Educational significance Despite the unpredictability of audition elective experiences and inherent risks, many students believe they are necessary and devote considerable time and money for the opportunity. Results of this exploratory study supported by a CGEA Collaborative Grant suggest the widespread nature of the practice and highlights a need for further study examining the audition electives process.
46. **Transitioning from Graduate Training to Practice: Where Do Graduates Go?**
Peter Nalin MD, Indiana University School of Medicine
Terrell Zollinger DrPH, Indiana University School of Medicine
Komal Kochhar MBBS, MHA, Indiana University School of Medicine
 Objective- To plan effective healthcare workforce initiatives, this study identified factors affecting graduates' decisions to practice in specific locations as they transition from training into practice. Methods- In June 2009, individuals completing graduate medical education (GME) programs at Indiana University School of Medicine were surveyed to identify graduates' intended practice location and why they chose that location, as well as to obtain an assessment of their GME program. Overall, 225 of the 352 (64%) graduates participated in the survey. Results- One-half of residents (55%) and fellows (48%) planned to stay within the state to practice. Main reasons given for choice of practice location were: met my professional needs (57% residents; 66% fellows); liked the people (56% residents; 73% fellows); and met my personal needs (54% residents; 73% fellows). The main reasons given for choosing not to practice in Indiana were: proximity to family (38% residents; 43% fellows); proximity to their spouses' family (21% residents; 14% fellows); and never intended to practice in Indiana (19% residents; 24% fellows). Two-thirds (65%) of the residents and fellows indicated their GME program prepared them "fully" for their boards. Nearly all graduates felt "fully" competent in patient care (95%), interpersonal and communication skills (95%), and professionalism (95%). Significance- About one-half of Indiana University residency and fellowship graduates settle in Indiana to practice. Our GME programs could better meet the physician shortage in Indiana by enrolling individuals most likely to settle in Indiana and by ensuring that their needs, both professional and personal, are being met.
47. **The Influence of the Hidden Curriculum on Patient Safety Practices: Failures of Supervision**
Paula Ross MA, University of Michigan Medical School
Susan Anderson MSN MBA CPHRM, University of Michigan Medical School
Eileen McMyler MS RN BC, University of Michigan Medical School
Kelly Saran MS RN, University of Michigan Medical School
Anabel Urteaga-Fuentes BS, University of Michigan Medical School
Rick Boothman JD, University of Michigan Medical School
Monica L. Lyson MD, University of Michigan Medical School
 Objective: Identifying the importance of communication and supervision is important to the foundation of patient safety. This study investigated the manner in which failures of supervision work in concert with the hidden curriculum to influence patient-safety practices across disciplines and various levels of training. Methods: An open-ended questionnaire was administered to 271 newly hired interns, residents and fellows asking for descriptions of situations in which they witnessed a failure of supervision and their corresponding response. Results: Our analysis revealed three types of supervision failures (monitoring, guidance, and feedback) and students' corresponding action was impacted by a variety of variables: fear, powerlessness, middle of the night, and examples or instructions of superiors. The necessity of supervision and its consequences are also highlighted in participant's responses. Conclusions: This study illustrates that during the process of medical education clinical decision making is not only guided by the governing principles of patient safety practices, but

also influenced by a reward and punishment framework. We suggest that improved supervision and communication within the medical hierarchy will not only create more productive environments, but also improve patient safety.

48. Professional Identity Development and Specialty Choice: A Survey of Third and Fourth-Year Medical Students

Mary White PhD, Wright State University Boonshoft School of Medicine

Susan Geiger M4, Wright State University Boonshoft School of Medicine

Nicole J. Borges PhD, Wright State University Boonshoft School of Medicine

Objective This study explores the relationship between professional identity development and medical specialty choice. Professional identity development refers to the gradual process by which students assume the identity of "physician" by the time they graduate. **Method** In 2009, we developed a 12-question survey, administered on-line to all third and fourth-year students at our medical school to explore factors contributing to the professional identity developmental process and to determine whether these factors influence specialty selection. Survey questions focused on where and how the formal and informal curricula contribute to the professional identity developmental process and whether students' changing sense of their professional identity contributes to specialty selection. Students were asked about the kinds of coursework, clinical and personal experiences and mentoring that are most significant for them, and which of these contribute most powerfully to the selection of clinical specialties. **Results** 89 students (45 third-year; 43 fourth-year) responded to the survey yielding a 45% response rate. Preliminary analysis to date suggests that respondents indicated feeling fairly confident that they knew themselves well enough to choose a specialty, but were only somewhat confident that they knew the specialty areas well enough to choose a specialty. Additional results will be reported. **Educational significance** Results of this study will lend important information about what curricular, extracurricular and personal experiences students identify as contributing to their sense of their responsibilities and career choices (e.g., their developing sense of professional identity) as medical professionals and how these activities and experiences influence their decisions about specialty choice.

49. Medical Students Delivering Education to Seniors in the Community

Firuzan Sari Kundt MA, The Ohio State University College of Medicine

Doug Post PhD, The Ohio State University College of Medicine

Daniel Clinchot MD, The Ohio State University College of Medicine

Rollin Nagel PhD, The Ohio State University College of Medicine

Michelle Myers MA, The Ohio State University College of Medicine

Purpose: A General Objectives Task Force recently created a set of core educational objectives for the OSU College of Medicine curriculum. Interpersonal communication was one of the five core objectives, and the effective preparation and delivery of educational materials was a specific objective under this domain. The purpose of this study was to develop and assess an educational activity within the OSU Senior Partners Program that could help meet this specific objective. **Methods:** All second-year students were asked to contact and inquire about a medical topic of interest to their senior partner. Students researched the topic, created a patient education handout, and made an oral presentation to the senior during a home visit. Medical students, seniors, and students' small group facilitators were surveyed to evaluate this assignment. **Results:** Both students (62.4%) and facilitators (100%) believed this was a valuable learning experience, although facilitators were more positive (Mann Whitney U: $Z = 3.68, p < .001$). Student survey items showed that students overall were very satisfied (61.8%) with this assignment and its intended effect. Seniors indicated the presentation was interesting and stimulating (86.6%), the information was informative and helpful (92.6%), and indicated the presentation would change the way they manage their health (59.6%).

Conclusions/Significance: Facilitators, seniors, and many students believed this was a valuable experience. The positive experience and impact of the project on seniors' management of their health is a powerful incentive to continue the activity and has important implications related to the effects of medical education on patients' lives.

50. A Comparative Analysis of Medical Student Insurance Benefits

Yelena Koldobskaya MS1, PhD, University of Chicago

Vivian Choi MS1, University of Chicago

Samuel Lee MS1, University of Chicago

Jeong-Hwan Kim MS1, University of Chicago

Monica Vela MD, University of Chicago

As young adults, medical students are at risk for health disparities because of insurance and access issues. No major studies exist assessing medical student health care. A 2008 pilot study revealed that medical students

enrolled in the University of Chicago's Student Health Insurance Plan (U-SHIP) routinely receive high-cost medical bills after insurance coverage, avoid medical care, and lack access to preventive care. This study aims to evaluate the state of medical student health care at the University of Chicago and its peer medical schools. A comparison of U-SHIP with student plans offered by peer medical schools and with employee plans revealed that several schools offer more robust student coverage, and that University of Chicago students pay higher premiums and receive less health coverage than University employees. A comparison of MRI billed prices revealed that prices varied considerably among medical schools, and that these prices were not indicative of students' out-of-pocket costs due to lack of information on insurer-negotiated discounts, making it difficult for students to manage their health care. Finally, a survey to evaluate students' satisfaction with their health insurance and health care was distributed to students at the Pritzker School of Medicine. Future directions include surveying students at peer institutions and evaluating the impact of the quality of health care received by medical students on their outlook toward patient care. This information addresses a gap in current research and reveals issues concerning healthcare access, quality, and cost that could impact future doctors' attitudes towards the healthcare system.

51. Teaching Evidence-Based Medicine: Is a Traditional Lecture or High-Fidelity Simulation a Better Teaching Tool?

Michael Takacs MD MS, University of Iowa Carver College of Medicine

C. William Heise BS, University of Iowa Carver College of Medicine

Objectives- Evidence based medicine (EBM) is typically taught in the setting of a journal club where there is a critical appraisal of a peer-reviewed journal article. "Early Goal Directed Therapy for Severe Sepsis and Shock," by Rivers et al. is reviewed as part of an elective in the Department of Emergency Medicine's Advanced Life Support class (ALS). The objective of this study was to see if teaching in a high fidelity simulation lab is superior to teaching in a traditional lecture for EBM. **Methods-** This was a randomized control trial of fourth-year medical students and first-year residents in the ALS elective during 2007. All students were assigned to read the journal article. They were then randomized into three groups - two lecture and one simulation. Eleven students were in the simulation group, while five were in each lecture group. The three instructors used identical outlines of the salient points in the article prepared by two other faculty. These same two faculty members wrote questions for a quiz, given one week later. The three instructors were blinded to the questions on the quiz. Scores from the 19 question, multiple-choice test were used as an assessment of knowledge gained from each teaching modality. **Results-** The two groups did not score significantly differently on the test (simulation group 71.8%; lecture group 70.6%; $p=0.92$). **Discussion-** High-fidelity simulation provides an alternative venue for teaching EBM. While the simulation group did not score significantly higher, the students felt its incorporation enhanced their learning.

52. Enhancing Authenticity of Problem Based Learning Using Simulated Patients

Carla Dyer MD, University of Missouri-Columbia School of Medicine

Dena Higbee MS, University of Missouri-Columbia School of Medicine

Kimberly Hoffman PhD, University of Missouri-Columbia School of Medicine

Purpose: Simulated patient encounters were integrated into established problem based learning (PBL) cases to 1) increase integration of basic/clinical sciences 2) strengthen clinical skills and 3) increase the authenticity of PBL cases. **Methods:** Medical student dyads performed a history and physical exam on a standardized patient (SP) that portrayed the PBL case of the week. Four of eight PBL cases included SP encounters during the pilot phase. Students documented the encounter and presented their findings to small group members, in lieu of using the traditional written introduction to the case. Faculty reviewed H&P documentation from all 12 PBL groups for each SP-PBL case to analyze congruence among groups. Small group learning objectives were also reviewed. Students/faculty completed Likert and open-ended questions regarding the effectiveness of the SP encounters and perceived impact on the process. **Results/conclusions:** Comments from the pilot phase were favorable overall, particularly toward authenticity. Both groups perceived variation in information students obtained during SP encounters. This finding was confirmed through document analysis. Faculty did not perceive omissions impacted learning. Variations in content were used to improve SP training in subsequent encounters. Comparison of knowledge acquisition using SP-PBL and traditional cases is in progress. These SP-PBL encounters continue at our institution and could be applied across institutions. **Educational significance:** Integrating SP encounters into the PBL process allows for enhanced case authenticity and patient centeredness and provides opportunities to strengthen students' clinical skills. The addition of this simulation is an important step to integrating basic/clinical sciences across the pre-clerkship curriculum.