# Eighth Annual John McCahan Medical Campus Education Day

## Showcasing Educational Innovation and Scholarship at the Boston University Medical Campus

## May 22, 2013

BOSTON UNIVERSITY

**Boston University** School of Medicine

Welcome to

# The Eighth Annual John McCahan Medical Campus Education Day

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Dear Colleagues,

Welcome to the eighth annual John McCahan Medical Campus Education Day. Dr. McCahan served as distinguished Associate Dean for Academic Affairs at Boston University School of Medicine for 30 years. We are pleased to offer Boston University medical campus educators a day of stimulating speakers, workshops, and innovative ideas to inform and inspire.

Our keynote speaker this year, David Keegan, M.D., comes from the Department of Family Medicine at the University of Calgary where he is the Undergraduate Education Director. He is also the founding editor of the *Shared Canadian Curriculum in Family Medicine*. His talk will focus on "strategic capacity" and how to develop it within education teams. Participants will use materials provided to build a customized plan to fill strategic gaps in their teams, take advantage of opportunities, and deal with unexpected challenges.

Posters and oral presentations will cover a variety of topics to aid our educators in improving and re-evaluating how we teach students, including: evaluation, testing and assessment techniques, educational models and methods.

This day is an opportunity to consider your teaching ideologies and connect and dialogue with your colleagues.

Sincerely,

Karen H. Antman, M.D.
Dean, Boston University School of Medicine
Provost, Boston University Medical Campus

## ACKNOWLEDGMENTS

John McCahan Medical Campus Education Day is an initiative of the Medical Education Committee (MEC), supported by Provost and Dean Karen H. Antman, M.D. The MEC acknowledges with appreciation the work of the following faculty and staff who have contributed to the planning of this event:

**The John McCahan Medical Campus Education Day Planning Committee:**

Ann Zumwalt, Ph.D., chair
Paige Curran, M.A.
Sophie Godley, M.P.H.
Celeste Kong, D.M.D.
Andrea Maalouf, D.M.D.
Jackie McDonnell
Amanda McNeil, M.S.
Jana Mulkern, M.S.
Stephanie Oberhaus, Ph.D.
Hee-Young Park, Ph.D.
Rob Schadt, Ed.D.
Kitt Shaffer, M.D.
John Wiecha, M.D.
Chris Vaughan

**The Planning Committee acknowledges with appreciation the support from the following offices that have made this meeting possible:**

Division of Continuing Education, Boston University Goldman School of Dental Medicine
Office of the Dean, Boston University Goldman School of Dental Medicine
Office of the Dean, Boston University School of Medicine
Office of Medical Education, Boston University School of Medicine
Office of the Dean, Boston University School of Public Health
Office of Facilities Management and Planning
Educational Media Center/Instructional Services

**The Planning Committee acknowledges with appreciation the support and participation of the following educational vendors:**

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# Eighth Annual
# John McCahan Medical Campus Education Day
***Showcasing Educational Innovation and Scholarship***
***at the Boston University Medical Campus***

## May 22, 2013
## Hiebert Lounge

## SCHEDULE OF EVENTS

8:30-8:40 a.m. **Welcome Address**

Karen Antman, M.D.,
Provost, Boston University Medical Campus

8:40-9:45 a.m. **Keynote Lecture**

"How to get your team ready to pounce on opportunities and handle unexpected challenges!"
David Keegan, M.D.
Dr. David Keegan is the Undergraduate Education Director of the Department of Family Medicine at the University of Calgary.– He is the founding editor of SHARC-FM, the Shared Canadian Curriculum in Family Medicine, past-chair of the Canadian Undergraduate Family Medicine Directors (CUFMED), and chair of the College of Family Physicians of Canada's Undergraduate Education Committee. He has held numerous additional leadership roles including serving as president of both the Canadian Association of Internes and Residents and the Canadian Federation of Medical Students.

10:00-11:30 a.m. **Workshop Sessions**

*See workshop listing p. 13-17 for descriptions and locations*

11:45 a.m. **Lunch / Networking / Vendors**

12:15-12:45 p.m. **Panel of BUMC Academic Deans**

Doug Hughes, M.D., Associate Dean of Academic Affairs, BUSM
Linda Hyman, Ph.D., Associate Provost for the Division of Graduate Medical Sciences, BUSM
Cataldo Leone, D.M.D., Associate Dean for Academic Affairs, BUGSDM
Lisa Sullivan, Ph.D., Associate Dean for Education, BUSPH

12:45-1:45 p.m. **Award Presentations**

Ann Zumwalt, Ph.D.

BUSM Office of Academic Affairs Voluntary Faculty Award of Excellence
BUSM Office of Academic Affairs Excellence in Serve Award

GMS Faculty Recognition Award

BUGSDM Faculty Recognition Award for Educational Innovation

BUSPH Educational Innovation Award

*(See page 10 for descriptions)*

## Schedule of Events

**Abstract Awards – Oral Presentations**

*Best Faculty/Staff Abstract*
Colin Sox, M.D.
"Evaluating Medical Students' Oral Case Presentations During a Pediatric Clerkship Improves their Subsequent Presentations: Results of a Multi-center Controlled Trial"
See abstract listings page *41*

*Best Resident Abstract*
Jason Grossman, M.D
"Single Center Simulation-Based Training of Cardiopulmonary Resuscitation for Internal Medicine Residents"
See abstract listings page *29*

*Best Student Abstract*
Fabian Chang, BUSM Class of 2016
"BUSM SNAP Challenge: An exercise to raise awareness of the struggles and challenges that disadvantaged patients face with regard to food insecurity"
See abstract listings page *25*

2:00-3:30 p.m. ***Poster Session / Networking / Vendors / Cookies and Coffee sponsored by Lippincott Williams & Wilkins***

Educational Vendors will be showcasing their products in Hiebert Lounge after 9:00 a.m. throughout the day

## John F. McCahan, M.D.

Dr. John McCahan served as the Associate Dean for Academic Affairs at Boston University School of Medicine from 1976 until 2006. From November 2003 through May 2005 he also led the School of Medicine as the Acting Dean.

Dr. McCahan received his B.A and M.D. degrees from the University of Pennsylvania. He subsequently trained in internal medicine at the Upstate Medical Center, Pennsylvania Hospital and Guy's Hospital, London. Following two years of service in the United States Public Health Service at the National Communicable Disease Center in Atlanta, he joined the staff at Lincoln Hospital in the Bronx and the faculty at Albert Einstein College of Medicine. He was appointed Director of the Department of Medicine at Lincoln Hospital in 1972. During this period Dr. McCahan was centrally involved in student and post-graduate training programs and became particularly invested in the care of the poor and the provision of health care services to underserved populations.

Following his recruitment to Boston University in 1975 as Associate Professor of Medicine, Dr. McCahan continued clinical practice with underserved populations through the Home Medical Service (now the Geriatrics Home Service). He regularly preceptored fourth-year students on home visits to frail elders. He developed a teaching program in family medicine and became a Professor of Family Medicine following the establishment of that department in 1997.

After his appointment as Associate Dean for Academic Affairs in 1976, Dr. McCahan oversaw numerous revisions and reforms of the M.D. curriculum. He guided a major change in curriculum governance and chaired the Medical Education Committee, created in this reorganization. Throughout his career he had a particular interest in the patient-doctor interaction and the teaching methodologies that resulted in effective clinical skills. He has actively taught, studied, and administered a variety of educational formats from large group lectures to one-on-one teaching, feedback, and evaluation. In recognition of his excellence as an educator, Dr. McCahan received the Frederick Jackson Teaching Award and faculty membership in AOA.

In addition to serving as chairman of numerous administrative and educational committees, Dr. McCahan was the principal investigator of several grants and contracts, including a PHS-BHP Grant to Establish a Department of Family Medicine; a PHS-BHP Predoctoral Training Grant in Family Medicine; and a Community Partnerships with Health Professions Education Initiative, W.K. Kellogg Foundation. He served as BUSM liaison and author of the Boston section of a plan for a statewide Area Health Education Center program. Throughout the years he earned the admiration of his colleagues for his ability to articulate and implement a clear vision of modern medical education.

# John McCahan Medical Campus Education Day Awards

### BUSM Office of Academic Affairs Voluntary Faculty Award of Excellence

This award honors our voluntary faculty members, community-based physicians who teach medical students and/or residents in one of BUSM's external teaching programs or travel to BUMC to teach on campus. These individuals are honored for their commitment to teaching, quality of teaching, impressive student evaluations and their overall commitment to the teaching mission of BUSM.

### BUSM Office of Academic Affairs Excellence in Service Award

The Office of Academic Affairs' Excellence in Service Award was established in recognition of BUSM Administrators and Staff whose outstanding work within the curriculum supports the success of the school, faculty, and students. Areas of excellence can include, but are not limited to service, leadership, innovation, and/or teamwork.

### GMS Faculty Recognition Award:

The Division of Graduate Medical Sciences is committed to the highest quality educational experiences for our students.– The GMS Faculty Recognition Award celebrates those faculty who embrace our teaching mission by seeking ways to engage students in an active learning environment and by challenging students to think critically and supporting students to take ownership of their own scholarship. This award recognizes faculty that have gone above and beyond expected contributions by developing creative initiatives to our teaching mission including, but not limited to, innovative coursework, new curriculum design, and the support of an improved teaching and learning environment.

### BUGSDM Award for Innovation in Education

The Award for Innovation in Education goes to the faculty member who best exemplifies the characteristics that makes our students excited about learning. This faculty member, through the use of technology or alternative modalities of teaching and assessment, has been able to inspire and motivate his/her students to achieve competency in their subject matter while enhancing student learning.

### BUSPH Educational Innovation Award

BUSPH values its excellent reputation for innovative teaching and is proud to acknowledge excellence in teaching and learning through the BUSPH Educational Innovation Award. This award recognizes creative contributions to the development of tools for the innovative presentation of coursework, new curriculum design, and the creation of an improved teaching and learning environment.
The Educational Innovation Award is designed to reward faculty who are prepared to challenge the traditional ways of doing things, to try out new approaches and to seek improvements in the way teaching is delivered and learning is achieved. Its aim is to enhance the status of teaching, encourage innovation and disseminate good practice.

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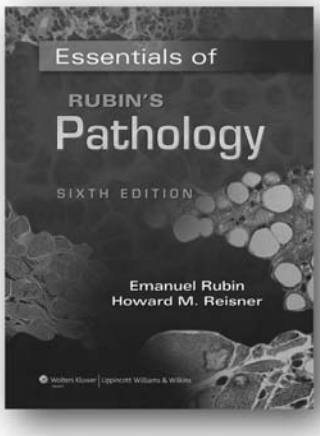


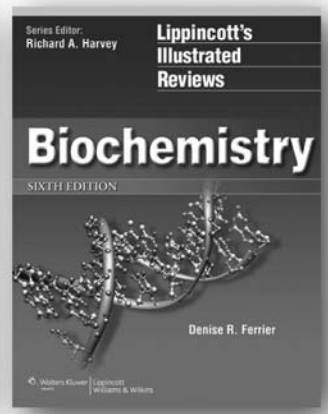


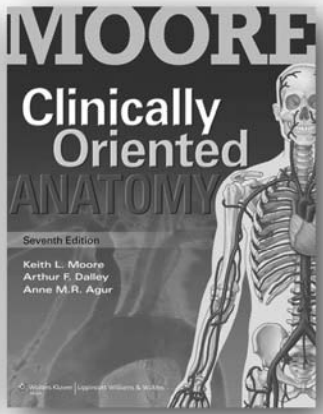


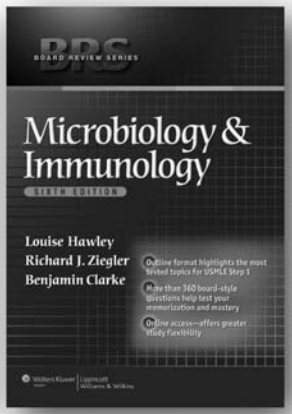


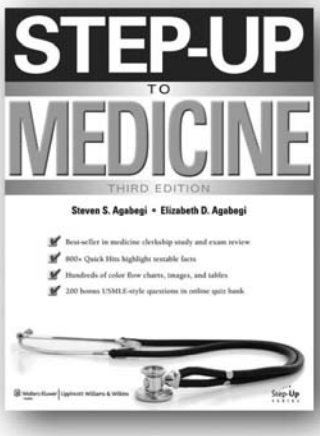


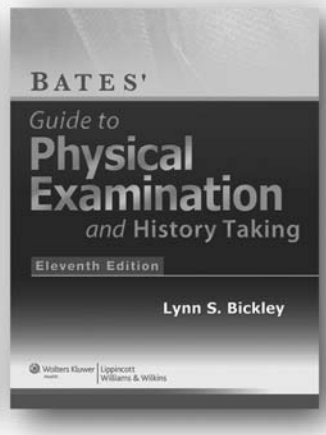



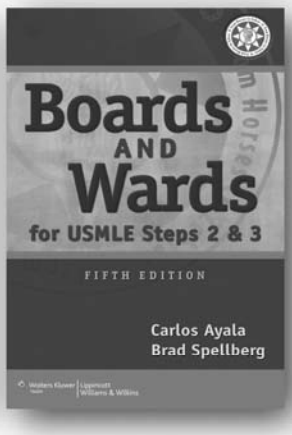


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# WORKSHOP DESCRIPTIONS AND LOCATIONS

**All workshops run concurrently from 10:00 AM – 11: 30 AM**

## Designing for reflective learning: why, when and how
**Victoria Parker, Ed.M. Location: L 212**

They say that experience is the best teacher… but that depends on what we learn from it! Reflective learning activities can be designed to help students make sense of their knowledge and experiences, and can also help us assess their developing competencies.

**Target audience:** Faculty who are interested in incorporating structured reflection activities into their teaching

**Rationale:** Reflective activities can be used before, during and after other educational experiences to enable students to connect what they are learning to their existing knowledge and beliefs, and identify ways in which those beliefs and knowledge have been changed as a result of experience. Instructors can help students maximize their learning through reflection by structuring different types of reflective prompts, debriefing activities, and assessments for reflective learning activities.

**Learning objectives:**

By the end of the session, participants should be able to:

- Describe the possible reasons for using reflective learning activities, and identify a possible application in his/her own teaching practice;
- Identify the different types, dimensions, and phases of reflective learning;
- Identify learning from a hands-on reflective exercise about teaching practice;
- Apply these concepts to an initial design for a reflective activity to implement in her/his own teaching practice.

**Session design:**

Overview (10 minutes): brief introductions, review learning objectives, discuss what is reflection, and provide overview of session design

Experiential activity (10 minutes): a reflective activity for teachers will be introduced and completed by the participants

Debriefing (10 minutes): participants will share what they learned from the experiential activity about the process of reflection and ways to prompt/structure it that enhance learning

Conceptual overview (10 minutes): building from the debriefing, a few concepts about types, dimensions, and phases of reflective learning

Design (20 minutes): participants will work in small groups to begin designing a reflective activity that they can apply in their own teaching practice to enhance student learning; the activities will be shared for discussion and suggestions by the whole group

Assessment (15 minutes): sample rubrics for assessing different types of reflective assignments will be shared, and participants will use templates to begin developing their own rubrics for existing or new reflective activities

Wrap up (15 minutes): Q & A, sharing of session learnings.

## Flipping the Classroom in Anatomy

**Kit Shaffer, M.D., Trevor Morrison, M.D., Rahul Arya, M.D., Ann Zumwalt, Ph.D.**

**Location: L 303**

This session will give participants the opportunity to design a teaching interaction for a 'flipped classroom', as has been used for several years in the first-year medical student Anatomy course at BUSM. This workshop will demonstrate inexpensive software that can be used to easily generate web pages for presentation of didactic material (Freeway Express), as well as a method for interactive display of image files without digital slides using photographic processing software (Photoshop) and a digital drawing tablet.

**Target Audience:** Faculty and staff who would like to use the flipped classroom model

**Rationale:** Today's students are living in a digital world, and are completely comfortable reviewing material online. Curricular pressures continue to diminish lecture time in favor of other educational activities. In this environment, class time is a valuable commodity that must be used optimally to reinforce learning. Delivery of didactic digital slide presentations is not the best use of classroom time. If students are given the building blocks for knowledge acquisition in another format, then face-time can be spent working through problems and practicing what they have learned, to allow better integration of knowledge and enhance retention. This is the essence of the 'flipped classroom', a term that refers to reversing the venue for problem sets (traditionally done outside of class) with didactic information delivery (traditionally done in class). Didactics may be in the form of a videotaped lecture or other format, such as an interactive website.

**Learning Objectives:**

By the end of this interactive session, participants will be able to:

1. Design a teaching interaction for a 'flipped classroom' experience.
2. Plan and implement a basic educational website using Freeway Express.
3. Organize teaching images to optimize interactive presentation in a learner-centered manner.
4. Display and annotate teaching images using Photoshop and a digital drawing tablet.

**Outline:**

1. Introduction (10 minutes)—definitions, rationale, implementation
2. Plan for flip (15 minutes)—design a flipped teaching interaction for an anatomic review of the brachial plexus
3. Freeway Express (20 minutes)—using images of the brachial plexus on MR, design a website for a planned interactive teaching session
4. File organization (10 minutes)—arrange teaching images into appropriate folders for a learner-directed, interactive teaching session.
5. Photoshop (20 minutes)—execute an interactive teaching interaction with group participants on the brachial plexus using digital drawing tablet and photographic processing program.
6. Wrap Up (15 minutes)—discuss the pros and cons of the flipped classroom approach.

## How to get critical buy-in to move your educational projects forward
## David Keegan, M.D. Location: L 203

**TARGET AUDIENCE:**
Anyone trying to get buy-in to move a project forward.

**RATIONALE:**
Leaders of educational and other projects in development face a series of challenges, from design to implementation. Through a stakeholder needs engagement process (also referred to as deliberative inquiry curriculum development and principled or interest-based negotiation), leaders can maximize their chances of success by getting buy-in from key stakeholders early on, so that they are not faced with opposition at the time of implementation.

**LEARNING OBJECTIVES:**
By the end of the workshop, participants will:
1. Be able to describe the value of (1) ensuring that all stakeholder groups have been identified and (2) incorporating their core needs into the design of any initiative or negotiation.
2. Given a scenario, be able to identify key stakeholder groups and estimate their needs.
3. Apply this approach to a current issue which they are leading/part of.

**TIMELINE:**
0-5 min - Introduction
5-15 min - role play
15-25 min - large group discussion/debrief
25-35 min - large group session on stakeholder needs
35-45 min - large group interactive work on mock scenario
45-55 min - individual project work using provided materials
55-70 min - peer consultations
70-80 min - large group debriefing/sharing
80-85 min - closing / annotated strategic leadership bibliography
85-90 min - buffer time
(questions/discussion will be encouraged throughout the workshop)

## Enhancing Student Engagement Outside the Classroom Using AdobeConnect

**Jean Maguire van Seventer, V.M.D., James Feeney, M.P.H., Liam Hunt**

**Location: L 202**

Participants are asked to bring their own laptops to this workshop if possible.

The goal of this workshop is to provide instructors with the pedagogical and technical information they need to effectively and efficiently implement use of Adobe® Connect™ Pro Web-Conferencing Software for engaging students in an online environment that will significantly supplement face-to-face classroom learning. The workshop will cover how to most successfully use the online classroom in order for both instructors and teaching assistants (TAs) to interact either one-on-one with students or with groups of students. The types of interactions that will be discussed include online office hours, ad hoc question and answer sessions, pre- and post-examination review sessions, and proctored make-up examination. Presenters will review the results of a student questionnaire examining the value, experience, and usage of this type of online classroom that was employed in the BU School of Public Health (SPH) course EH710: Physiologic Principles for Public Health during the Fall 2012 semester. Participants will have the opportunity to use their personal computers to enter, experience, and employ the basic functions of the Adobe Connect classroom.

**Target Audience:** Faculty members from BUSM, GMS, HGSDM, & SPH who are interested in engaging with their students online, outside of regular class hours.

**Rationale:** The online learning environment can create a unique opportunity for public health, medical, dental, and GMS students with widely varied schedules, personal and professional commitments, and educational backgrounds to engage both their instructor and TA outside of the classroom in a way that significantly enhances classroom learning. In addition, online classroom sessions can be recorded and archived for future viewing by students unable to attend a session in real time.

**Learning Objectives:** By the conclusion of the workshop, participants will be able to:

- Identify situations where online engagement between students and an instructor or TA would enhance learning
- Prepare students to optimally engage with their instructor and TA in an online setting
- Recognize the best days and times to hold various types of online sessions
- Successfully and efficiently use online classroom sessions in multiple ways to optimize and extend student face-to-face classroom learning
- Address critical technical and operation issues for effective use of the Adobe Connect Pro online classroom

**Workshop Outline:**

10 min- Introductions; Background and Rationale of Workshop; Review of Learning Objectives

20 min- Discussion / Question and Answer: The Strategy and Process of Using the Adobe Connect Online Classroom to Engage Students

60 min- Participant use of their personal computers to enter and navigate within the Adobe Connect Pro online classroom.

## Evidence-Based Practice Makes Perfect! Incorporating EBP Skills into Health Sciences Education

**A'Llyn Ettien, M.L.I.S. and David Flynn, M.S.**

**Location: L 1110 (Computer Lab)**

**Target Audience:** Medical, dental and public health educators

**Rationale:** Evidence-based practice is a primary focus of modern health sciences education, but its principles are often challenging to incorporate into lessons, especially in preclinical subjects

**Learning objectives:** As a result of attending this workshop, participants will:

1. Explain the process and rationale of the EBP Workflow (searching the background literature, filtered literature and unfiltered literature in order).
2. Identify the most current Point of Care resources and describe their individual strengths and limitations.
3. Practice searching the 'gold standard' of Evidence-Based Practice and identify several of the drawbacks to this type of resource.
4. Describe practical strategies to help students in answering the types of EBP-related research questions that most frequently arise in their classes.

**Timeline:**

15 minutes: Participants will describe the classes they teach and the types of questions that most frequently arise, and the presenters will discuss how to classify these questions according to the BU Evidence-Based Practice workflow in order to identify the best resources to search for answers.

10 minutes**:** Introduction to evidence-based practice and Medical Library website

40 minutes**:** Detailed explanation of how to use BU's EBP workflow to introduce EBP research skills to students and guide them toward effective searches of relevant literature based on the type of question; advantages and drawbacks of each resource will be addressed. Participants will actively follow along with the demonstration on classroom computers.

Concepts to be covered:

- Identifying a clinical question, using the PICO formulation
- Identifying the type of resource most likely to give answer
- Using tools found on library website to search for an answer in the literature, in the following order:
  - background literature (i.e. textbooks and clinical practice guidelines)
  - filtered literature (i.e. systematic reviews, the 'Gold Standard' for EBP)
  - unfiltered literature (i.e. journal articles with no additional expert analysis)

10 minutes: Participants will practice searches using the demonstrated tools and techniques with either provided sample questions, or their own EBP-related research questions; presenters will be available to offer suggestions.

10 minutes: Wrap-up: summary of EBP workflow and quick review of tools and techniques; Review of the types of questions that frequently arise in classes and tips for incorporating EBP research skills into the discussion when answering them.

5 minutes: Questions?

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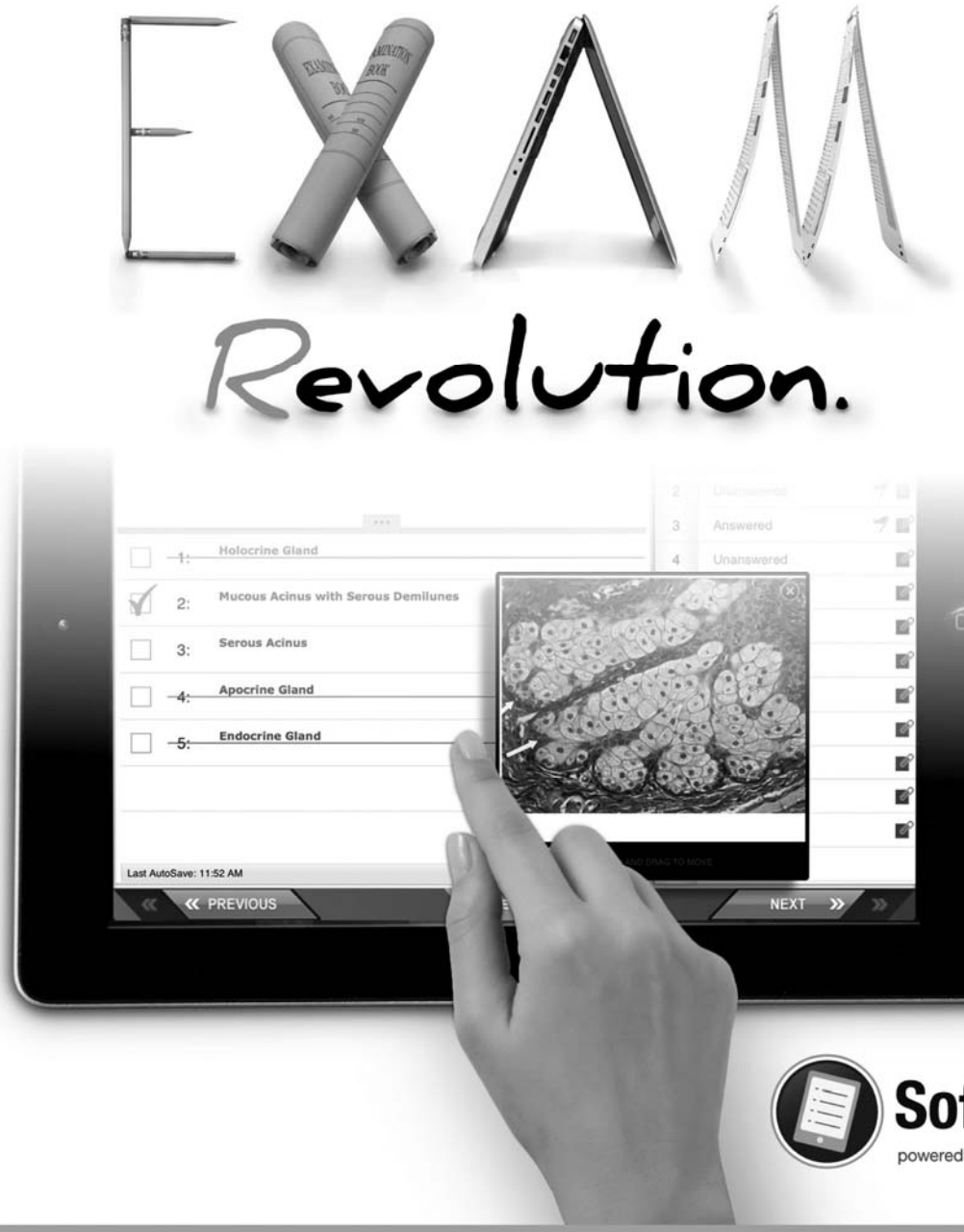


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## ABSTRACT THEMES FOR POSTER PRESENTATIONS

**Education Technology**
These submissions are meant to demonstrate creative use of interactive technology to augment learning. Appropriate types of submissions include course or clerkship websites, electronic clinical case simulations, online didactics, computer – based faculty development resources and electronic evaluation instruments. Submitted projects should be non-commercial although industry funding is permitted if the content and control of the project resides solely with the faculty authors.
**Abstracts 1-5**

**Education Innovation and Research**
These submissions showcase scholarship or ongoing research in education at BUMC. Projects can be presented prior to the completion of full evaluation. Examples of educational innovations include: development, implementation, or evaluation of educational tools, course curricula, simulations or innovative educational collaborations. For research, both quantitative and qualitative research may be submitted as well as research in progress.
**Abstracts 6-48**

# Education Technology

* Abstracts are ordered alphabetically by the last name of the primary author

**1**

## USE OF SMARTPHONE/TABLET/LAPTOP FRIENDLY AUDIENCE RESPONSE SYSTEM IN THE CLASSROOM

A.BENDAYAN, C.KONG
Department of General Dentistry, Boston University Goldman School of Dental Medicine

Statement of Problem or Question: Different audience response systems were considered including the already popular “clickers”. I more modern and Smartphone friendly online version was required in order to avoid troubleshooting the clickers and use the existing technology available.

Objectives of Program/Intervention:

a. Minimize costs associated with purchase of clickers
b. Minimize technical difficulties with synching the clickers
c. Maximize the use of Smartphone/tablets/laptops already own by the students

Description of Program/Intervention

During the Dental Occlusion and Fixed Prosthodontics Courses given to DMD students in the fall of 2012 the company Poll Everywhere was utilized to allow the audience to participate during the lecture sessions.

Methods

3 to 5 questions were added to the PowerPoint presentations to allow the users to participate during lecture/ Questions were pre designed and pre embedded in the PowerPoint. The users were given the option to access the poll for about 1 minute and were given the option to use either a Smartphone (different brands), conventional cell phones with texting capability, tablets and laptops. Most users preferred the Smartphone. The answers are recorded on the go and are interactive. At the end of the time period the poll is closed, the correct answer is discussed and interpreted.

Findings to date/Evaluation

The method was part of other teaching strategies but was mostly aimed to understand the student’s interpretation of the information given during lecture and obtain a good sense of what has been absorbed by them. The technology allow for unanimous interaction to motivate students to participate.

Key Lessons Learned

The use of Poll Everywhere resulted in being more cost effective that the clickers. It does require some basic knowledge of computers (Mac or PC) and use of PowerPoint. It also requires an active Internet connection and users with unlimited text plan if this method were to be use on a cell phone.

Questions / Future directions

Expand the use of this Audience Response System among other courses and other schools.
Measure through course evaluations the effectiveness of such technique for study purposes.
The Audience Response System should NOT be considered the only teaching strategy, conventional class participation, interaction, online and in class quizzes have proven to be helpful.

**2**

## IMPROVING THE KNOWLEDGE ON HYDROXYUREA IN CHILDREN AND WITH SICKLE CELL DISEASE: A HOSPITAL-BASED QUALITY IMPROVEMENT PROJECT.

E.JASTANIAH, A.SOBOTA, P.SPRINZ, J.MOSES
Department of Pediatrics, Boston Medical Center

Background: Despite the proven benefits of the use of hydroxyurea in reducing morbidity and mortality in sickle cell disease patients, there still remains a gap in its utilization.
Aims: To improve the knowledge, beliefs and attitudes of children with sickle cell disease and their families towards hydroxyurea and to increase its uptake by 25% within 4 months.
Methods: The eligibility criteria for our project were determined. The demographic assessment of the active sickle cell children was performed. An interactive educational module was developed and used to assess our patients' knowledge, beliefs and attitudes on hydroxyurea and to educate them about the role of hydroxyurea in sickle cell disease in a pretest-posttest design. This interactive educational module was delivered using an Ipad and coupled with a booklet, water bottle, wristband and fridge magnets for the patients to leave with. The change in knowledge, attitudes and uptake of hydroxyurea was documented as well as the barriers to the utilization of hydroxyurea.
Results: Of 181 active patients, 108 (61%) patients were considered eligible to take hydroxyurea. Among those eligible, 70 (65%) were already utilizing hydroxyurea. Thirty-eight patients (35.3%) were not currently on hydroxyurea. Seventeen (58.8%) patients scheduled appointments, of which 10 (41.1%) received the educational session. The most common barrier for the utilization of hydroxyurea was that patients 'do not feel sick enough' to take it. The educational session led to a significant increase in the knowledge pretest score (median increment 0.34, p= 0.0039). There was a significant increase in the likelihood of hydroxyurea initiation (median increment 1.00, p=0.0078). Three out 10 patients (30%) initiated hydroxyurea.
Conclusion: Our study showed that targeted educational intervention can have significant impact on patients'/guardian's understanding of hydroxyurea. Additional work to address underlying beliefs about the medication may be necessary to have an additional effect on initiation.

**4**

## RELIGION AND PUBLIC HEALTH: DEVELOPING A NOVEL CURRICULUM

M.SEGURA-HARRISON, M.LONGACRE, M.GRODIN
Department of Health Law, Bioethics and Human Rights, Boston University School of Public Health

SPH LW 728: Religion and Public Health

Background

Religion and medicine have a constant interplay. On an individual level, our traditions and cultural beliefs often effect the quality and efficacy of the care we give, and the care we ultimately receive. On a larger scale, these beliefs often play a significant role in shaping public health policy.

To help meet this need, we created this course which aims to address the critical interplay of religious experiences, customs, and belief systems. Our intention is to better prepare students to effectively and sensitively serve the varied public health needs of increasingly religiously diverse communities.

Methods

First, we created a basic outline of the major world religious traditions with an emphasis on health, sickness, and lifecycle transitions. We then assembled a collection of case studies in which public health was impacted by religion.

We then utilized Bloom's taxonomy (Fig 1.) to generate day by day course learning objectives that would engage students and enable them to build a deeper understanding of the complexities of the topics presented. We drew from a diverse database of source material, cited in part below.

Finally, we generated a 15-week course schedule (Fig 2) to effectively accomplish our educational objectives.

Ongoing Research

In order to further study attitudes and awareness of the complex issues of religion and public health, we designed a survey for prior knowledge, interest, and comfort with issues of religion and public health. The survey was given to students at the beginning of the semester, and will be re-administered at the end of the class. Pre and post assessments will be analyzed, and used as an additional indicator of the success of the class in meeting the learning objectives.

Results

This curriculum has been implemented at the Boston University School of Public Health (Spring 2013)

**3**

## PROMOTING STUDENT CENTERED LEARNING IN BLACKBOARD LEARN: A DOZEN GOOD IDEAS

R.SCHADT
Department of Educational Technology, Boston University School of Public Health

Statement of Problem:
Faculty can use a learning management system (LMS) such as Blackboard Learn to provide a dynamic and effective learning environment to complement face-to-face or blended learning formats. However, Learn is largely used most often as a only one-way channel to provide additional information to students to reinforce didactic teaching. While an LMS can effectively supplement instructor-lead learning activities, many of the opportunities to facilitate student learning remain untapped. In this poster presentation faculty and support staff will see some of the ways that the LMS can be used to enable students to organize their knowledge to positively affect their learning, motivate students to learn and help students to become self-directed learners.
Objectives:
After reviewing this poster and following hyperlinks made available through a summary handout, viewers will be able to:

- Define student-centered learning and explain the educational benefits of student-centered learning environments
- Identify important tools in the LMS that can be used to promote student centered learning.
- Examine and evaluate the research base that supports the development of student-centered tools and techniques in face-to-face and blended learning environments.
- See examples of effective implementation of some of the Blackboard Learn tools in various educational settings

Key Lessons Learned/Future Directions:
The poster will include summaries of the experiences of selected faculty indicating some best practices, challenges in using Blackboard Learn, things to avoid or encourage, and suggestions for further developing and integrating Blackboard Learn at Boston University.

**5**

## DERM TERMS—THE MORPHOLOGY WORKSPACE: DEVELOPING A NOVEL EDUCATIONAL TOOL FOR THE PRACTICAL APPLICATION OF KNOWLEDGE IN DERMATOLOGY

J.WANG[1], A.SAJI[2], K.MORGENSHTERN[3], A.GARG[4]
[1]Boston University School of Medicine, Class of 2014, [2]Boston University College of Arts and Sciences, Boston University [3]Boston University School of Medicine, Class of 2015, [4]Department of Dermatology, Boston University School of Medicine

DermTerms is a novel interactive online tool that seeks to bridge the education gap between lecture-based and clinical dermatology in medical student education. Our "morphology workspace" is a case-based interactive online platform in which students can apply the knowledge they've obtained in the classroom, and in so doing refine their understanding and practice of morphology and dermatologic differential diagnosis. In each case, students are presented with a dermatologic image and given the opportunity to systematically choose morphologic terms to create their own description of the image. They then receive immediate feedback on their work in the form of "expert answers" from practicing academic dermatologists, akin to presenting to a preceptor in clinic. A similar process is then repeated for developing a differential diagnosis for the image. In addition, a glossary tool and a system for numeric assessment are built into the educational tool.

Future directions: In April 2013, we will be initiating phase 1 of our DermTerms pilot by encouraging 2nd year medical students to use and comment on the tool during their Dermatology module. We hope to have some initial feedback on the educational tool in time for the John McCahan Medical Campus Education Day in May. After taking into account the feedback from phase 1 of our pilot, we hope to initiate phase 2 by encouraging 4th year medical students to use and provide feedback on the tool during their Ambulatory and Dermatology clerkships starting in June 2013, in order to further assess the educational utility of DermTerms.

* Abstracts are ordered alphabetically by the last name of the primary author

**7**

## EFFECTIVENESS OF THE 4TH YEAR MEDICINE 2 FINAL PRESENTATIONS AS AN EDUCATIONAL TOOL

S.ANANTHAKRISHNAN, T.BARBER, S.SARFATY
Department of Medicine, Boston University School of Medicine

Introduction: In the 4th year BUSM curriculum, the Medicine 2 (Ambulatory) final presentation serves as a platform for students to investigate a topic of their choice. Students are encouraged to select topics not covered in the medical school curriculum that connect general internal medicine, advanced communication skills and/or their future career pathway. Our goal is to measure the educational impact of these final presentations, emphasizing the novelty of the material being presented and the students' functions as educators.

Methods: Medicine 2 students in 3 sequential clerkship blocks were asked to generate 1 multiple choice question regarding a learning objective from their 10 minute final presentation. All questions were administered to all students in that clerkship as the pre-test. Clerkship students observed the final presentations of their classmates, and were then administered the same multiple choice post-test. Mean value of differences in the number of correct answers on the pre- and post- tests were compared using a paired t-test calculation.

Results: The total number of students who completed both the pre- and post- tests were n= 15 (At the time of the abstract submission, only 1 block of data is available- n varies between 15 to 18 per block over 3 sequential blocks: anticipated n=45). The mean improvement noted on the post-test was 4.6 +/- 2.4 questions.

**6**

## SEXUAL ASSAULT AS A RESIDENCY COMPETENCY: EVALUATING A NEW OB GYN RESIDENT TRAINING CURRICULUM

S.BELL[1], J.RISTAU[2], M.SIA[1], O.VRAGOVIC[1], S.SONALKAR[1]
[1]Department of Obstetrics and Gynecology, Boston Medical Center, [2]Boston University School of Medicine, Class of 2016

*NOTE: Due to the "shelter in place" order, my statistician and I are cut off until further notice from my data at BMC and were due to meet today to finalize the results portion of the abstract for submission. I am submitting what I have of the abstract and hope that I can submit the full abstract at the start of next week, given the unprecedented circumstances. I send an email regarding this to Jacqueline McDonnell earlier today.

Problem: Most patients with a suspected sexual assault are identified and treated in the Boston Medical Center (BMC) emergency department by sexual assault nurse examiners (SANEs). Hospital policy states that responsibility for patients who disclose a sexual assault while in a non-ICU inpatient area lies with the obstetrics and gynecology team. OB-GYN residents and attendings have not traditionally received any training around the care of these patients or evidence collection using state kits. Objective: 1) To meet a minimum standard of education for health care personnel who are asked to conduct the sexual assault exam; and 2) To assess the impact of a novel resident curriculum covering an ACGME competency area for OB-GYN, as no standard exists.

Intervention: Investigators organized a four hour training program initiated in fall, 2012. The first session focused on psychological aftercare and was taught by representatives from the Boston Area Rape Crisis Center, while the second session focused on the SANE evaluation and was led by Boston SANE nurses.

Methods: Investigators administered pre and post-tests to the eleven residents who participated in the full training program. Tests included a combination of 32 multiple choice and fill-in questions assessing knowledge of important material. Participants also answered questions regarding prior exposure to the topic and confidence in key skills before and after the training. A delayed 6-month post-test will be administered in June, 2013. Results to date: PENDING Lessons Learned/Future Directions: PENDING

**8**

## SICKLE CELL DISEASE EDUCATION: AN INQUIRY INTO WHAT PATIENTS AND FAMILIES KNOW, WHAT THEY WANT TO LEARN, AND HOW THEY WANT TO LEARN IT

K.BOYD, P.SPRINZ, C.ROMNEY, D.DEROSA
Department of Pediatrics, Division of Pediatric Hematology, Boston University School of Medicine

Sickle cell disease is a complex disorder that requires life-long management. While physicians are essential in dealing with symptoms and complications, patients and their caregivers must make daily decisions involving medication use, avoidance of sickling triggers, pain management, and response to fevers. The BMC Division of Pediatric Hematology recognizes that many patients and caregivers do not have adequate knowledge about sickle cell disease; this lack of information and understanding may limit their ability to make appropriate healthcare decisions. As a result, we seek to ascertain patients'/caregivers' understanding of sickle cell disease in order to develop appropriate teaching tools to improve their knowledge of the disease. To elicit patients'/caregivers' knowledge, we have created a questionnaire for patients and caregivers to help us assess 1) what they know about sickle cell disease, 2) what they most want to know about sickle cell disease, and 3) where and how they would like to learn. Our preliminary analyses indicate that most patients and caregivers know how to treat pain, but they are less knowledgeable about fever management. They are confused about how the disease is passed from parents to offspring, and do not know about the various sequelae of the disorder. It appears that they prefer to learn about sickle cell disease from a physician in a physician's office. Our goal from this preliminary work is to develop educational tools that are patient-sensitive and specific. We believe that improved patient knowledge about sickle cell disease and its management may improve patients' clinical outcomes and quality of life with fewer unnecessary emergency room visits and concomitant reductions in the overall costs of treatment.

**(ORAL*)**

## BUSM SNAP CHALLENGE: AN EXERCISE TO RAISE AWARENESS OF THE STRUGGLES AND CHALLENGES THAT DISADVANTAGED PATIENTS FACE WITH REGARD TO FOOD INSECURITY

F.CHANG, D.MCGRAIL, I.GORBOUNOVA
Boston University School of Medicine, Class of 2016

Statement of Problem

Anecdotal experience has shown that medical students have limited outlets to experience and learn about the struggles that impoverished people may face with food security.

Objectives of Program

To foster greater medical student understanding and empathy of the hurdles that patients requiring nutrition assistance must overcome.

Description of Program

The Supplemental Nutrition Assistance Program (SNAP) provides financial assistance to low income individuals and families to purchase groceries. The Student Nutrition Awareness and Action Council (SNAAC) challenged its members to live off of a SNAP budget for one week while eating a balanced diet and report their findings.

Methods

8 SNAAC students participated in the SNAP challenge. Participants were allowed to spend $33, the equivalent to the average weekly SNAP benefit for an individual, for their weekly groceries. A Facebook page was created for students to share their experiences and post photos of the food they ate.

Evaluation

7 SNAAC students who started the challenge were able to complete it. The biggest challenges reported were finding ways to consume enough vegetables and time to prepare/cook meals. Students also reported that their meals were lacking in variety. All students viewed the challenge as an eye-opening experience to the challenges faced by low-income families.

Lessons Learned

Eating a balanced diet on a limited budget is a challenge even for medical students with an interest in nutrition. This needs to be considered when trying to help low-income patients consume healthier diets.

Future directions

SNAAC students will share their experience with The SNAP Challenge to their fellow BUSM students and encourage all to participate in an updated version of it at the end of April.

*** AWARD WINNING ABSTRACT** – Will be presented by primary author after the Deans Panel

**9**

## LEARNING ABOUT WELLNESS IN THE INTERNAL MEDICINE RESIDENCY PROGRAM

T.CHENG, C.NORONHA, J.SIEGEL, G.YADAVALLI
Department of Medicine, Boston University School of Medicine

Problem:
Multiple studies show high rates of burnout among resident physicians. There is an increasing need to address issues of burnout and improve wellness in medical training especially given that physicians in practice post residency are likewise noted to have high rates of burnout.
Objectives:
-Understand risk and manifestations of burnout and fatigue among physicians
-Become aware of the role of wellness and resiliency in preventing burnout
-Identify strategies to combat burnout, improve well-being and enhance self-care
-Maintain, enhance or start a personal wellness strategy
Description:
Program included all residents in the Internal Medicine Residency Program and took place within workshops in the academic half day. The initial session was a large group discussion on burnout in medicine and strategies for wellness. Residents then participated in small group workshops in one of these possible tracks: mindfulness training, personal nutrition, intro to yoga practice and narrative writing.
Evaluation:
Post seminar survey was distributed to all residents. A total of 96% of residents agree or strongly agree that wellness and resiliency are important in professional life. 96% agree or strongly agree that educational objectives of understanding burnout, awareness of the role of wellness in preventing burnout and identifying strategies to combat burnout were achieved. A total of 84% reported they were somewhat likely or very likely to work on a wellness goal.
Key lessons learned:
A half day wellness workshop was well received by internal medicine residents. Narrative comments reflected positive feedback on the session and appreciation of the importance of wellness in their professional lives. Challenges identified included lack of time and hospital support of wellness. Next steps will involve educational and systems interventions to create a culture of wellness and improve the ability of residents to take on personal wellness goals.

**10**

## TRAINING EFFECT OF A TEACHING INTERVENTION IN THE CONTEXT OF GAZE TRACKING

K.COLLIARD[1], L.PFAFF[1], A.ZUMWALT[2]
[1]Division of Graduate Medical Sciences, Boston University School of Medicine
[2]Department of Anatomy and Neurobiology, Boston University School of Medicine

The processes of learning and teaching are fundamentally linked. Teaching is much more than the simple delivery of information as it also involves knowing how to grab an audience's attention and keep them engaged in order for them to truly recall what is being taught to them in a near future. We are investigating whether students' eye movements are potential indicators of how individuals interact with visual stimuli before and after training. We postulate that the educational intervention will result in an increase in the accuracy of the answers, and an increase in the amount of time a subject takes to select an answer. Subjects in the experimental group are trained to use salient features to identify cell images, which have been assigned a number 1-6. Control subjects receive no training and are shown pictures of the numbered cells. Both groups are then tasked to identify cells by number. When pooling all of the data for all of the images and orientations for each group, we found no statistically significant difference in the accuracy of the answer between the Experimental and Control groups. However, a slight trend towards a higher accuracy by the Experimental group was seen. In general, the Experimental group performed stronger at identifying the Oblong images than the Control group. Our results indicate some improvement on both the performance and the time to answer after being explicit training in what salient or key features are useful for identification of an image. These results are variable, and more consistent for some images (Oblong 3, Square 1). Perhaps due to the easy identification of the images the training was unnecessary allowing both groups to correctly identify the images despite an educational intervention.

**11**

## PHYSICIANS FOR HAITI: EDUCATIONAL INNOVATION IN PARTNERSHIP WITH THE BOSTON UNIVERSITY MEDICAL CAMPUS COMMUNITY

C.CURRY[1], J.HUDSPETH[2]
[1]Department of Obstetrics and Gynecology, Boston Medical Center, [2]Department of Medicine, Boston Medical Center

STATEMENT OF PROBLEM: The Boston University Medical Campus (BUMC) provides care for a diverse patient population, including a large Haitian community. There are linguistic and cultural barriers associated with provision of cross-cultural healthcare and members of the BUMC community are actively seeking ways to immerse themselves in the Haitian community. At the same time, Haitian health care providers are seeking resources from US-based colleagues to further the educational and clinical goals of their own programs.
OBJECTIVES OF PROGRAM: Physicians for Haiti (P4H) is a Boston-based non-governmental organization dedicated to inspiring, empowering, and supporting the development of leaders among Haiti's next generation of health professionals. Our objective was to create a variety of engagement levels for members of the BUMC community, such as providing opportunities for learning Haitian Creole as well as creating concrete avenues for fruitful collaboration with our Haitian colleagues.
DESCRIPTION OF PROGRAM: P4H designed a multifaceted program to engage health professionals using summer and academic year internships and educational module development for distance teaching for Haitian colleagues. Based on requests from partners in Haiti, clinical and teaching opportunities in Haiti were arranged for BUMC professionals. Experience with grant writing and submission were provided for professional development. We created a Haitian Creole language course that provided opportunities for teaching as well as language acquisition.
OUTCOMES AND EVALUATION:
Language outreach: over 50 members of the BUMC community have been taught Haitian Creole by two residents, one medical student, and one health educator who are all from BUMC.
Internships: One public health and medical student have each participated in internships within the organization, focusing on Monitoring and Evaluation and Curriculum Development respectively.
Academic connection: Members of the BU School of Public Health worked with P4H members to develop a proposal project on improving leadership and quality improvement initiatives in Haitian health institutes, a proposal that has received private funding and is now underway on a pilot level in Haiti.
In-country Haiti educational connection: Two BUMC faculty have provided lectures to Haiti health professional colleagues; one OB/Gyn resident engaged in a clinical elective at a P4H partner site; several residents and faculty have participated in creating health educational materials for P4H partners.
Evaluation: All of our work is accompanied by 360 degree evaluations with all stake-holders participating in critical analysis of each project. Additionally, we assess short term knowledge acquisition for our educational programming.
FUTURE DIRECTIONS: Based on the positive feedback and evaluations of our current programming, P4H hopes to create more formal relationships and develop a sustained engagement with members of the BUMC community.

**14**

## HEART DEVELOPMENT TUTORIAL

T.DELORENZO
Division of Graduate Medical Sciences, Boston University School of Medicine

For many students, visualizing the anatomy of heart development can create many issues and misconceptions. Heart tube folding is one of the most critical events of the developmental period; this workshop magnifies the process into a larger than life 3-D hands on model. An hour to an hour and a half long workshop has been created to review the overall heart development in a pre-quiz and discussion session, along with the development of a heart tube model in which the students create and mold the developing heart tube themselves. A hands on approach in which the students get to create the process of folding, from heart tube to heart, creates a lasting educational experience that can be used as a building block to even more topics in heart development. In addition to the hands on workshop, a clay-mation video was created to allow large groups to visualize the folding action as well.

**12**

## TRAINING STUDENT LEADERS TO TEACH AN ADVOCACY-FOCUSED CURRICULUM THROUGH THE BUATP

N.ECONOMOU, M.NOLAN, L.YU, M. ZIELENBACH
Boston University School of Medicine, Class of 2015

Background: The Spectrum of Physician Advocacy elective is a course for first and second year medical students taught by trained student leaders with support from dedicated faculty. The objectives of the course are to address the social determinants of health through an interactive curriculum consisting of student-delivered presentations, guest speakers, and small group discussion. The course is part of the larger Boston University Advocacy Training Program (BUATP) that spans all four years of medical school and provides education instruction, mentorship, and leadership training to students interested in patient and community advocacy. We sought to evaluate the effectiveness of student instructors in accomplishing the learning objectives established for the course.

Learning Objectives of Elective:

1. To define physician advocacy and how it can be applied to direct patient care;
2. To argue why advocacy is linked to the mission of medicine and that some level of patient advocacy is the responsibility of the physician as a medical professional; and
3. To identify examples of the health inequities that exist at the community, state, national and global level and the consequent need for physicians to act as advocates.

Methods: Students completed evaluations at the mid-point of the elective in order to assess how well the student leaders were fulfilling the outlined course objectives. Responses were rated on a 5-point Likert scale (5=highest).

Findings: On quantitative evaluation, students felt that the elective successfully accomplished the three major learning objectives. Students rated the fulfillment of objective (1) as 4.2, objective (2) as 4.6, and objective (3) as 4.5.

Conclusion and Future Directions: Student-led teaching is an effective means of delivering advocacy education to other medical students. This method of instruction is well-received by peers and has the potential for expansion to other medical student-run groups. The leadership training piece of BUATP is a fundamental component that has produced competent student leaders able to deliver advocacy training to their colleagues across all years of medical school.

**13**

## ENHANCING CLINICAL OBSERVATION THROUGH THE ARTS

N.FLEISHER, A.ZEA, M.LOADHOLT, C.MCMANAMA
Department of General Dentistry, Boston University Goldman School of Dental Medicine,

Key components of clinical diagnosis and decision making are the ability to gather and interpret data, observation, and communication of findings. Many educators agree that teaching the art and science of clinical observation can be the most difficult part of this process. Visual Thinking Strategies (increasing critical thinking skills through the visual arts) have been incorporated in over 20 medical schools curricula since Yale's pilot with 1st year medical students, over a decade ago. There is growing evidence in the literature that, aside from refining clinical diagnostic skills, art observation and related discussion activities enhance students' pattern recognition skills, empathy, communication skills and foster teamwork. Through these activities, students have the opportunity to observe, interpret, describe, and discuss among peers, complex information in a! non-threatening, non-clinical setting.

VTS have been incorporated into the GSDM Comprehensive Preclinical Dentistry course for first year students. This innovative project is the first attempt to apply these techniques to dental education, as a required exercise.

During the fall semester, 2012-2013 academic year first year dental students visited the Isabella Gardner Museum, and were exposed to VTS by a group of experienced art curators. Following this visit, students attended a seminar led by dental faculty. The relationship of observation with diagnosis was explored utilizing dental clinical examples as discussion points.

Informal feedback from students and faculty suggest that they were receptive to this experience and they would repeat or recommend it for other students.

We intend to collect baseline and qualitative information regarding observational skills of GSDM first year dental students in the 2013-2014 academic year. Students will be exposed to the two sessions, and follow-up data will be collected.

Our goal is to demonstrate VTS applicability in teaching clinical observation and diagnosis in dental education.

**15**

## POVERTY SIMULATION: AN INTERDISCIPLINARY APPROACH TO LEARNING THE SOCIAL DETRIMENTS OF HEALTH

M.FLEMING[1], L.SARATHY[2], P.TAMES[3]
[1]Boston University School of Medicine, Class of 2014, [2]Boston University School of Medicine, Class of 2013, [3]Boston University School of Law

Socioeconomic disparities have long been recognized as an important factor influencing health outcomes, and medical schools are increasingly urged to integrate curriculum reflecting this. LCME objective 15 states that medical education should contain content and clinical exposure that will prepare future physicians to recognize determinants of health. In order to address this learning objective, the Boston University Advocacy Training Program (BUATP) coordinated an exercise - the Community Action Poverty Simulation Program (CAPS) - for BU Medical and Law students. CAPS, used by medical residency training programs, is a tool designed to strengthen awareness of the challenges faced by those living in poverty. Here, we implemented CAPS as part of a joint course between the two graduate schools that trains students to recognize and address social determinants of health in their respective fields. During the simulation students were separated into "families" comprised of both Med and Law students. These families were required to juggle a variety of daily tasks an individual living in poverty might encounter, such as applying for a bank loan or using food stamps. During the hour-long debriefing session that followed, participants and leaders shared their CAPS experiences and discussed how these findings might apply to their future work with patients and clients. A medical student reflected on the simulation's utility in "helping me walk in my patients' shoes in order to understand how challenges in their lives not directly related to health care become obstacles to them achieving their health goals." A law student remarked, "The poverty simulation was a powerful and humbling experience that helped me better understand both the legal and health implications of poverty in America." This simulation and the subsequent discussions demonstrate the mutual educational benefit of interprofessional experiential learning and suggest a framework for implementing future multidisciplinary development opportunities for professional students.

**(ORAL*)**

## SINGLE CENTER SIMULATION-BASED TRAINING OF CARDIOPULMONARY RESUSCITATION FOR INTERNAL MEDICINE RESIDENTS

J.GROSSMAN[1], E.KIM[1], S.MOTWANI[1], M.SAUNG[1], S.TEWANI[1], G.PATTS[1], J.WEINBERG[2], S.BERNARD[1], T.CHENG[1]
[1]Department of Medicine, Boston University School of Medicine, [2]Department of Biostatistics, Boston University School of Public Health

BACKGROUND: Internal Medicine (IM) residents lead "code blue" or cardiopulmonary resuscitation events at most academic centers. Literature demonstrates increased confidence of code leaders leads to better clinical outcomes. However, current training and experience in managing code blue events is insufficient. Our study investigated changes in confidence, competence and knowledge of IM residents after implementation of a multidisciplinary simulation-based cardiopulmonary resuscitation code leadership training at Boston Medical Center (BMC).

METHODS: The training occurred in BMC's Solomont Center for Clinical Simulation and Nursing Education. It involved a didactic session on code blue management with focus on communication and leadership skills followed by simulated code blue scenarios and debriefing with facilitators. The curriculum was collaboratively designed with simulation center staff and senior faculty members of the Divisions of Cardiology and Critical Care. Residents were administered pre- and post-training surveys on self-assessment of confidence, competence and knowledge of code blue leadership. All survey results were double-entered using REDCap to eliminate any data-entry errors prior to analysis. Matched data was generated and McNemar's exact test was used for analyses.

RESULTS: A total of 49 residents completed both surveys, of which 15 residents had a chance to lead actual codes between the 2 surveys. There was a statistically significant increase in the reported level of knowledge regarding code leadership (n=31, pre=51.6%, post=77.4%, p=0.02). Additionally, there was a positive trend, without reaching statistical significance, in confidence (n=15, pre=40%, post=67%, p=0.125), comfort (n=32, pre=40.6%, post=56.3%, p=0.18), and competence (n=32, pre=53.1%, post=62.5%, p=0.51) to lead a code. In both pre- and post-test surveys, residents reported identifying themselves as a code leader at a high rate (n=15, pre=87%, post=93%, p=1.00). Feedback from residents was notable for requests for more frequent simulations.

CONCLUSIONS: Simulation-based training increases residents' perceived level of knowledge required to successfully lead codes. Other variables evaluated including comfort, competence and confidence trended positive as well.

*** AWARD WINNING ABSTRACT** – Will be presented by primary author after the Deans Panel

**16**

## SNAAC COOKING DEMONSTRATIONS FOR MEDICAL STUDENTS: A DIRECT APPROACH TO TEACHING STUDENT HEALTHY COOKING TO IMPROVE EATING HABITS

A.HOLMSTROM, S.HOLMSTROM, K.ENZER, T.BURD
Boston University School of Medicine, Class of 2016

Problem Statement: Anecdotal evidence from SNAAC members and medical students indicate that students have limited knowledge regarding healthy cooking and nutrition resulting in poor eating habits and a lack of confidence counseling patients about nutrition.

Objectives: 1) To equip medical students with cooking skills and practical nutrition knowledge. 2) To demonstrate to medical students how to cook healthy, yet cost-effective and time-efficient meals.

Description of the Intervention: The SNAAC Cooking Demonstrations for Medical Students is an interactive lesson in which SNAAC members, who have been trained by the BMC Demonstration Kitchen Chef/Registered Dietitian, teach fellow students how to cook a healthy meal. Participants learn specific cooking skills, nutrition information and advice, and time and money saving tips. During the demonstrations, students ask questions, sample the meal and take home recipes.

Methods: 6 SNAAC lesson leaders participated in a training session with a chef/RD. Interested medical students can register for a cooking class by responding to an advertising email. SNAAC leaders demonstrate how to prepare a nutritious, balanced meal under the supervision of the chef/RD. Participants complete an evaluation at the end of the class.

Findings to date: 6 SNAAC students have been trained as kitchen leaders. 3 cooking classes have been offered and 30 medical students have participated. Medical students that attended the cooking demonstrations responded that they feel they learned practical cooking skills that they will use, learned tips about how to make meals healthier, and are more likely to cook meals at home more than twice a week.

Future Directions: SNACC will continue collaborating with the BMC Demonstration Kitchen's chef/RD to establish and maintain a program of 8 cooking lessons per academic year. New SNACC members will be trained to teach the cooking classes. Funding is provided by the OSA Wellness Program.

**17**

## FEEL GOOD TO DO GOOD: STUDENT RESPONSE AND FEEDBACK TO A MEDICAL STUDENT WELLNESS WEEK

M.HOWARD, S.SHAW, S.DONATELLI, K.COAKLEY
Boston University School of Medicine, Class of 2015

Objectives: Given the link between medical education, burnout, and importance of self-care and wellness (1, 2), implementation of accessible means of exercise and stress reduction is a priority at BUSM. A by-students, for-students group exercise and wellness model was implemented, including a "Wellness Week" to promote learning about physical wellness, stress reduction, and improved academic focus. Student feedback was elicited to assess the utility of these events in promoting wellness, as well as suggestions on expanding the initiative.

Methods: In Fall 2012, the BUSM student wellness committee held a "Wellness Week" consisting of daily events to promote student well-being and provide practical ways to improve physical and mental health. Events included talks on mindfulness in medicine, the importance of strength training and at-home exercises, a cooking demonstration on healthy cooking on-the-go, and student-led dance and yoga classes. Students were surveyed, using a 5-point Likert scale to rate each event on whether it "provided (them) with information on leading a healthier life." Open-ended questions regarding the utility of these events and suggestions for future wellness activities were included.

Findings and Key Lessons: Response rate was 80% (32/40). Forty-four percent (14/32) of students responded in strong agreement to the statement "this event provided me with information on leading a healthier life;" 44% (15/32) "agreed" with the statement, and the remaining 9% (3/32) were neutral. In open-ended feedback, students expressed interest in increasing the frequency of dance classes and cooking demonstrations. Suggestions for future events included intramural sports closer to campus, guided meditation, and group aerobic classes.

Future/Ongoing:

We will continue to hold student-led exercise and wellness programs, utilizing student feedback to plan future events. Additionally, we hope to hold monthly or bi-monthly wellness events to promote student well-being and decrease stress levels inherent in medical school education.

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## INTEGRATION OF NUTRITION IN THE BUSM CURRICULUM: BASELINE DATA

K.IRELAND, E. KEEFE, J.ROBBINS, C.LENDERS
Department of Pediatrics, Boston University School of Medicine

Statement of Problem: As a result of a national charge to increase nutrition medicine education in the medical school curricula and a survey conducted by BUSM students, the Nutrition Vertical Integration Group (VIG) is assessing and integrating nutrition into BUSM's 4-year curriculum.
Objective: To determine baseline nutrition knowledge and perceived self-efficacy in a cohort of medical students.
Description of Intervention: Nutrition content is being integrated into BUSMs 4-year curriculum in the form of online modules, case-based education, lectures, and practice-based learning. The Student Nutrition Awareness and Action Council (SNAAC) organizes extracurricular nutrition activities for interested BUSM students.
Methods: Baseline data was collected for a prospective cohort study among 775 enrolled BUSM students. Students were asked to respond to a survey via email and Blackboard postings from key course directors from February to April 2013. The survey included four self-efficacy questions (Likert scale, 1-5) and 6 knowledge questions (multiple-choice with one correct answer). Composite scores on knowledge questions were calculated. Descriptive analyses were performed.
Result: 166 (23%) medical students responded to the survey: 44, 65, 24, and 31 from year 1-to-4. The average knowledge score was 52%. Ninety-one (55%) students indicated they were confident in their ability to counsel patients about dietary changes; 63 (38 %) understood the role of registered dietitians and when to refer their patients; and, 40 (24%) knew about food assistance programs and when to refer their patients.
Lessons Learned: Participants lacked adequate nutrition knowledge and had poor perceived self-efficacy in nutrition. More nutrition education is needed. Further student and curriculum evaluations are warranted.
Future directions: Continue current efforts of nutrition integration in the BUSM curriculum and perform additional analyses. Students will be surveyed yearly to assess effectiveness of curriculum additions. With New Balance Foundation support.

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## AN INNOVATIVE STRATEGY FOR INTERACTIVE LEARNING ABOUT A CHALLENGING SYNDROME

S.KARPAS
Department of General Dentistry, Section of Geriatric Dentistry, Boston University Goldman School of Dental Medicine

Statement of the Problem: Burning Mouth Syndrome (BMS) is a challenging entity that is difficult to diagnose and difficult to treat. Approximately 1.3 million people in the United States suffer from this orofacial condition. Typically patients have seen many medical and dental specialists in an unsuccessful effort to obtain symptomatic relief.
Objectives: This presentation will discuss an innovative teaching approach that is evidence-based and interactive to promote recognition of the syndrome and appropriate treatment strategies for the clinician.
Description of program: A powerpoint presentation was developed for use in a roundtable, small-group format that is appropriate for use by an interdisciplinary healthcare team. Discussion questions are included at the end of the presentation to reinforce key subject matter.
Key lessons learned: The presentation has promoted interest and engagement in diverse audiences and provides a diagnostic and treatment algorithm for students, residents, and clinicians in multiple healthcare fields.
Future directions: This format may be used as a model to elucidate management of challenging disease syndromes in an interdisciplinary team setting.. Opportunities to share new information nationally will be explored. New directions will need to be explored in order to effectively treat patients as we enter a cost driven healthcare environment.

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## INFLUENCE OF A BEHAVIORAL CHANGE ACTIVITY ON SENIOR MEDICAL STUDENT ATTITUDES ABOUT MOTIVATIONAL INTERVIEWING

E.KARWOWSKI, T.CHENG, J.ORLANDER
Department of Medicine, Boston Medical Center

Background: Many medical schools lack effective strategies to teach communication. This study evaluated the impact of four communication workshops, along with a behavioral change activity, on senior students' attitudes towards communication.

Methods: The curriculum for fourth-year students in the ambulatory medicine clerkship included four communication skills workshops: setting the agenda (SA), motivational interviewing (MI), communication with peers (CP), and dealing with difficult patients (DD). Following only the MI workshop, students self-selected a behavioral change activity that they performed for one week, followed by a brief reflection. Students completed a survey to assess the workshops using a seven-point Likert scale. Students rated their attitudes before and after the clerkship in two areas: the 'importance' of each communication skill and 'confidence' in their ability to perform it.

Results: Forty-eight out of 60 (80%) students completed the course evaluation. Student scores improved for both the 'importance' and 'confidence' categories following each of the workshops. The mean change in student scores of 'importance' was greater in the MI workshop (1.13, 95% CI 0.81-1.45) than workshops focused on SA (0.89, 0.62-1.16), CP (0.71, 0.46-0.96) and DD (0.58, 0.38-0.78). Using Wilcoxon Signed Rank Test to compare the mean change in student scores among the workshops, the MI workshop improved scores significantly more than the DD workshop (p=0.003). The mean change in student scores of 'confidence' was also greater in the MI workshop (1.34, 95% CI 1.08-1.60) than the workshops on SA (1.02, 0.76-1.28), CP (0.64, 0.42-0.86), and DD (1.16, 0.91-1.41). These differences in confidence scores were statistically significant for MI vs. SA (p=0.027) and MI vs. CP.

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## FACULTY PERCEPTIONS OF SUMMATIVE EVALUATION FOR CLERKSHIP STUDENTS

E.KARWOWSKI[1], J.LIEBSCHUTZ[1], B.FRASER[2], J.ORLANDER[1]
[1]Department of Medicine, Boston Medical Center, [2] Department of Language and Literacy, Boston University School of Education

Background: Medical student summative evaluation on all clerkships transitioned to a new competency-based assessment in the spring of 2012. The form used a four point Likert scale with behaviorally based anchors. Little is known about faculty perception of the process of student evaluation or impact of the new forms.

Methods: Semi-structured, one-on-one interviews were conducted with department of medicine faculty. Study subjects evaluated six or more clerkship students per year. Questions explored faculty interactions with students, attitudes toward student evaluation in general and towards the new evaluation form. All interviews were transcribed verbatim. Common themes were developed and categorized using grounded theory.

Results: Twelve faculty members with a range of clinical interests and experience participated in the study. Faculty universally expressed that evaluation was limited due to a lack of direct observation. The majority primarily observed case presentations and used these as a proxy for areas they were unable to observe, particularly history taking and physical examination skills. Faculty conveyed tension over the process of evaluation. They expressed inadequacy in their ability to reliably evaluate students contrasted with a heightened awareness of the significance of their evaluations in determining student grades. At times this resulted in self-reported grade inflation. Lastly, faculty described a lack of transparency between themselves and the education administration. The purpose and ramifications of the evaluation form were not well understood. Many faculty requested clearly delineated student expectations and feedback on completed evaluations.

Discussion: Summative evaluation on the clinical clerkships presents a challenge to many faculty members. Faculty development around student evaluation that explicitly addresses student milestones, purpose of the evaluation forms, and feedback on an individual's grading practices may be beneficial in improving the process. Further work needs to elucidate the association between presentation skills as a proxy for other clinical skills.

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## THE EDUCATIONAL IMPACT OF PROVIDING DENTAL CARE TO THE OLDEST-OLD: A CASE REPORT

L.KAUFMAN[1], A.SOTO[1], E.ABRAMS[1], P.FRIEDMAN[2]
[1]Department of Medicine, Section of Geriatrics, Boston University Medical Center, [2]Department of General Dentistry, Boston University Goldman School of Dental Medicine

Background: Over the next 20 years, the number of people aged 85 and older ("oldest-old") is projected to be the fastest growing segment of the aging population. Many older adults prefer to "age in place" and continue living in their own homes. Around 600 homebound older adults in Boston receive at-home medical care from health care providers from the Section of Geriatrics in the Department of Medicine and dental care from the Section of Geriatric Dentistry at Henry M. Goldman School of Dental Medicine.
Case: A 104-year-old homebound patient was referred for complete upper and lower denture fabrication. The patient was cooperative with the initial exam, and it was determined that treatment would be feasible.
Objective: To explore the educational impact of treating a 104-year-old homebound patient on dental students.
Methods: Two third-year dental students were recruited to perform eight at home procedures necessary for denture fabrication. After the completion of the visits, the students were emailed a brief questionnaire asking: How did the home visit experiences impact your learning? Did your attitudes towards treating older patients change? How did it differ from your clinical experience? How will you use this knowledge going forward?
Findings: The feedback suggests that the experience of providing dental care to a 104-year-old patient in her home broadened students' perception of how to deliver dental care, and increased student awareness of the importance of delivering care for the oldest old.
Key Lessons Learned: Dental students can derive skills and knowledge they may not otherwise acquire when exposed to home care, especially when prompted to reflect on what they have learned.
Future Directions: We would like to increase the number of dental students we expose to Geriatric Dentistry through the home care model, and collect more reflective feedback from them after their home care experiences.

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## PROGRAM LEVEL PREDICTORS OF INTERNAL MEDICINE BOARD PASS RATES

M.KAUSHIK, M.SUBRAMANYAM, A.UPADHYAY, A.ROY
Department of Medicine, Boston Medical Center

Background: Aggregate pass rate of residents in American Board of Internal Medicine (ABIM) certifying exam is an indicator of residency program performance. We explored state wise and regional variation in pass rates and hypothesized that program level factors influence the aggregate performance of residents.
Methods: We utilized prospectively collected administrative data by American Medical Association and Accreditation Council for Graduate Medical Education (ACGME) on 359 non-military, internal medicine residency programs from which residents appeared on the American Board of Internal Medicine examination in 2004-2006 and 2007-2009.
Results: Mean program board pass rates varied significantly by region (West: 89.1 %, South: 90.3%, Midwest: 92.1%, Northeast: 92.6 %). In fully adjusted model, the program level pass rates were 2% lower for each withdrawn sub-specialties and 0.8% lower for each PD change. ACGME accreditation cycle length and proportion of preliminary residents were significantly associated with program pass rates.
Conclusions: Program size can limit the utility of board pass rates to be used as continuous program accreditation. Stability in program leadership and sub-specialty programs is associated, independent of ACGME's summary accreditation evaluation, with better resident preparation for delivering better patient outcomes and care.

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## IS THE LEVEL OF MEDICARE SUPPORT ASSOCIATED WITH THE QUALITY OF INTERNAL MEDICINE RESIDENCY TRAINING?

M.KAUSHIK, A.ROY
Department of Medicine, Boston Medical Center

Deficit reduction has renewed focus on the cost of graduate medical education and quality of residency training. We explored regional variation in Medicare funding for Internal Medicine residents and hypothesized that Medicare funding influences the quality of training of residents.

We utilized cost reports submitted to the Centers for Medicare and Medicaid Services to calculate per resident amount paid by Medicare for resident support, benefits for faculty who supervise residents, institutional overhead costs and other exclusively GME-related administrative costs. This information was linked to prospectively collected administrative, American Medical Association and, Accreditation Council for Graduate Medical Education (ACGME) data on 347 non-military, internal medicine residency programs across US. American Board of Internal Medicine examination program level pass rates in 2004-2006 and 2009-2011 were used as a metric of quality of training offered by residency program. Generalized estimating equations (GEE) were used to adjust for longitudinal and nested data.

Average primary care resident support in 2009 varied little by region (West: $100,453, South: $92,330, Midwest: $97,295, Northeast: $113,341, Territory: $62,866) or ownership (Government:$98,869, Non-profit:$103,135, Profit:$ 99,591). In univariate model, the program level pass rates in 2009-2011 were not associated with Medicare levels of resident support. After multivariate adjustment for program level factors including size of hospital, number of sub-specialties and ACGME accreditation cycle length, pass rates were 0.25% lower for each additional $10,000 paid by Medicare in direct resident support(p value >0.1).

We did not find substantial variation in resident support from Medicare by region or hospital ownership. We could not find any evidence to suggest that direct Medicare funding level was associated with educational outcomes of Internal Medicine resident training. Further research is required to evaluate the impact of earmarking Medicare funds for resident training on the quality of resident training.

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## INTEGRATING GERIATRICS WITH ANATOMY

K.KLEBER[1], M.YOUNG[2], A.ZUMWALT[3]
[1]Division of Graduate Medical Sciences, Boston University School of Medicine, [2] Section of Geriatrics, Department of Medicine, Boston Medical Center, [3]Department of Anatomy and Neurobiology, Boston University School of Medicine

Medical schools have begun to implement vertical curricula that integrate basic science with clinical medicine. Vertical integration intends to interweave clinical experience throughout the first year of medical school and ideally, should incorporate the ongoing reinforcement of basic science concepts during clinical years. Schools have been successful in bringing clinical knowledge from the “top down” (clinical practice to basic sciences) but often lag behind when in comes to reinforcing the basic sciences down the line. Collaboration between educators, students, and clinicians has the potential to close the gap between the first year gross anatomy experience and the application of anatomical principals in clinical practice. In an innovation unique to BUSM, anatomy is taught to Geriatrics physicians, nurses, and students via a Grand Rounds talk on “The Anatomy o! f Aging.” Universally positive feedback included a confirmation suggesting this project could serve as an example for effective basic science reinforcement.

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## HUMAN GENETIC VARIATION: A FLIPPED CLASSROOM EXERCISE IN CULTURAL COMPETENCY

K.LARABEE[1], S.DASGUPTA[2]
[1]Boston University School of Medicine, [2]Department of Genetics, Boston University Medical School

PURPOSE: Our understanding of human genetic variation has deepened through the Human Genome and International Hap Map Projects, which gave us a high-resolution view of human genetic variation and ancestry. Applying this knowledge to evaluation of ancestry-based genetic testing strategies is an important component of the practice of culturally competent medicine. To emphasize the clinical relevance of population genetics, we designed a required flipped classroom module for the first year Medical Genetics course.
METHODS: The concepts of population genetics and Hardy-Weinberg equilibrium are introduced through an interactive on-line exercise. In class, the students then explore application of these concepts to clinical cases, specifically considering how geographic ancestry and genetic variation influence variants of unknown significance and the psychosocial aspects of direct-to-consumer genetic testing. The online exercise pre-test and post-test, as well as the final course examination, allows assessment of knowledge gains and fidelity of conceptual and quantitative concepts. Course survey results were also used to assess student feedback.
RESULTS: 179 students participated in this exercise. The percentage of students answering the conceptual questions on the pre-test, post-test, and final examination correctly were 60.2%, 76.8%, and 95.4% respectively, which demonstrates a long term gain in knowledge. In contrast, the percentage of students answering the quantitative question on the pre-test, post-test, and final examination correctly were 50.2%, 92.1%, and 62.4%, which does show some immediate improved understanding.
CONCLUSIONS and FUTURE DIRECTIONS: The curricular design of this session allows us to introduce complex concepts relating to cultural competency in a scientifically rigorous and interactive way. Next steps include potentially moving this type of exercise into a small group setting. In order to help our future physicians gain the scientific expertise to practice culturally competent medicine, we will need to promote further integration of similar exercises into the pre-clerkship phase of medical school curricula.

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## NUTRITION EDUCATION IN THE MEDICAL SCHOOL: WHERE DO WE STAND?

C.LENDERS[1], K.IRELAND[1], C.SCHOETTLER[2], E.KEEFE[1]
[1]Department of Pediatrics, Boston University School of Medicine [2]Boston University School of Medicine, Class of 2015

Statement of the Problem: Most common causes of death in the United States are preventable and are related to nutrition. A Nutrition Vertical integration Group (VIG) was created in 2007 to assess the curriculum and develop a sustainable model of nutrition medicine education.
Objectives: To assess the status of nutrition education in the current four-year curriculum and identify areas for improvement; to enhance nutrition-related clinical skills of faculty and students; and, to identify opportunities in post-graduate training at BU.
Description of Intervention: The Nutrition VIG has developed an educational plan using a novel student-centered model of nutrition medicine education that focuses on mentored medical student extracurricular activities to develop, evaluate, and sustain nutrition medicine education.
Methods: BUSM uses a team-based approach focusing on case-based learning in the classroom, practice-based learning in clinics, and extracurricular activities. The Nutrition VIG is developing a blackboard site with various resources to improve medical students' knowledge, attitudes, and practical skills.
Results: Course directors indicate that most pre-clerkship nutrition objectives adopted by the nutrition VIG are met by the end of the four-year curriculum and student USMLE scores in nutrition have improved, however students still feel poorly prepared to advise future patients on nutrition.
Key Lessons Learned: There is a need to better define the guiding principles and priority areas, and competencies and objectives in nutrition medicine. Medical students can play a critical role as nutrition advocates and agents of change across medical schools while national standards are being developed.
Future directions: While the IOM is developing a national plan for education reform by bringing together a variety of disciplines and sectors, we are working with the NHLBI, professional societies, and health professionals to improve curricular approaches to nutrition in the continuum of medical and health care professionals' education and training programs. With New Balance Foundation.

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## TEACHING CLINICAL MICROSKILLS IN CAMBODIA: A TRAIN THE TRAINER WORKSHOP DEVELOPED BY A COALITION OF INTERNATIONAL AND DOMESTIC PARTNERS

J.MARKUNS, L.GOLDMAN
Department of Family Medicine, Boston Medical Center

Objective: As part of early efforts to promote development of primary care training, a coalition of domestic and international partners formed towards promotion of improved medical education and clinical teaching in Cambodia through the Center for Education Development of Health Professionals (CEDHP). As part of this effort, a workshop was held to promote clinical teaching microskills at the bedside, adapting a common technique used in primary care teaching.

Methods: The workshop took place over four days in a two-step training of trainer model. Initial TOT lessons on learning climate, microskills, and feedback were delivered by faculty from Boston University over 2 days, coordinated by the French Cooperation, and supported by WHO, target to a group of core trainers from the CEDHP. The Cambodian CEDHP faculty then delivered a similar workshop with personally modified materials to other regional Cambodian medical faculty, with the support and guidance of the international faculty.

Results: Using anonymous audience response devices, the participants rated the program highly. Subsequent debriefing indicated some challenges in translation of the microskills into Khmer, as well as some transcultural gap in bedside teaching. The microskills questions were modified for future use. Follow up from additional workshops by trainers will be reviewed.

Conclusions: The clinical microskills workshop was a successful model for TOT in clinical teaching in Cambodia. This impressive coalition of domestic and international partners resulted in further workshops delivered primarily by Cambodian CEDHP faculty in Cambodian teaching hospitals with limited support from international faculty.

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## CRITERIA FOR ADMISSIONS: DO THEY PREDICT SUCCESS IN DOCTORAL PROGRAMS?

H.PARK[1], O.BERKOWITZ[2], S.DASGUPTA[3], K.SYMES[4], G.LAVOIE[1], C.SLEASMAN[1]
[1]Division of Graduate Medical Sciences, Boston University School of Medicine, [2]Physician Assistant Program, Boston University School of Medicine [3]Department of Genetics, Boston University School of Medicine, [4]Department of Biochemistry/Office of Student Affairs, Boston University School of Medicine

The Division of Graduate Medical Sciences (GMS) at Boston University School of Medicine offers doctoral programs in 17 unique biomedical disciplines where the trainees are required to complete rigorous requirements composed of advanced level courses and completion of a dissertation. Each year, GMS doctoral programs receive close to thousand applications from both domestic and international students and it is an ongoing challenge to select those who are the best qualified and fit for these programs. GMS has taken a holistic approach to select the best applicants where the key criteria considered for admission were the undergraduate academic performance, Graduate Record Exam (GRE) scores, letters of recommendation, a statement of interest for biomedical research, and laboratory research experience. However, the significance of individual criterion in predicting the applicant's success was not clear. Two years ago, the GMS doctoral curriculum was reformed and first year doctoral students across 17 programs participated in a core, modular and integrated 20-week course, Foundation in Biomedical Sciences (FiBS). To assess each component of the admissions criteria in success in the new curriculum, performance in FiBS was correlated to individual admissions criterion such as undergraduate grade point average, Verbal-GRE score, Quantitative-GRE score, age, gender, and domestic/international status. Descriptive statistics were performed as well as univariate analysis via Pearson correlation for continuous variables and Chi-square test for categorical variables. Statistical analysis indicated that there is a significant correlation between FiBS performances and Verbal-GRE score but the effect is very small when adjusted for all other variables in a multiple conditional logistic regression analysis (OR=1.077). Additional criteria including the strength of the undergraduate institution attended, laboratory research experience and letters of support are now being included in the study. It is hoped that this work will determine the degree of significance of each admission criterion in selecting for student success in the early stages of our doctoral programs.

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## HOMELESS HEALTH IMMERSION EXPERIENCE: IMPACT ON PRECLINICAL STUDENTS' ATTITUDES TOWARDS THE HOMELESS

A.PENICHE, L.WONG, R.JAWA
Boston University School of Medicine

Background: Recent literature has called for medical schools to incorporate experience-based curriculum with estranged patient populations in order to cultivate students' ethics, attitudes, and values so they may be capable of treating all patients equitably throughout their future careers.1 Given reports that medical students become less humanitarian and more cynical throughout their training2, we believe the Homeless Health Immersion Experience (HHIE) at the Boston Healthcare for the Homeless Program (BHCHP) can help promote appreciation for psychosocial and humanistic aspects of patient care during the early stages of students' professional development. As this is a new elective aiming to sensitize preclinical students to the complex challenges faced by this vulnerable patient population, we examined the influence of the HHIE on students' attitudes towards the homeless.

Methods: From October 2012 to April 2013, 12 first- and 12 second-year students interviewed homeless patients and discussed the impact of social determinants of health on patient's medical conditions with attending physicians during weekly clinical sessions at the BHCHP's Barbara McInnis House and outpatient clinic. The Health Professionals' Attitudes Towards the Homeless Inventory (HPATHI)3 was used to assess attitude changes (5-point Likert scale) on three subscales: personal advocacy, social advocacy, and cynicism. Individual HPATHI responses were anonymized and cynicism subscale responses were reversed so higher scores would reflect positive attitudes. Data were analyzed using a paired samples t-test.

Findings/Discussions: 20 of 24 (83%) students completed the HPATHI before and immediately after participating in the HHIE. Social advocacy subscale mean scores were 4.32 and 4.55, respectively, indicating significantly more positive student attitudes regarding society's responsibility to care for the homeless population ($t(19) = -3.56$, $p = .002$). Personal advocacy subscale mean scores were 4.51 and 4.65, suggesting more positive attitudes regarding a personal commitment to working with the homeless ($t(19) = -2.04$, $p = .055$). Cynicism subscale analysis revealed no significant difference. These findings suggest that exposure to homeless patients during the HHIE had some positive effects on preclinical medical students' attitudes towards the homeless.

Future Directions: We plan to continue the HHIE next year to provide more preclinical students opportunities to learn about the effects of social determinants of health on BHCHP's homeless patient population.

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## THE EFFECT OF TRAINING ON INDIVIDUALS' INTERACTIONS WITH VISUAL DATA

L.PFAFF[1], K.COLLIARD[1], A.ZUMWALT[2]
[1]Division of Graduate Medical Sciences, Boston University School of Medicine
[2]Department of Anatomy and Neurobiology, Boston University School of Medicine

Traditionally, students demonstrate their learning via testing and demonstrations but little is known about how learners' interaction with information changes during and after training. Our lab's goal is to explore this question using gaze tracking and quantitative measures. Subjects in the experimental group are trained to use salient features to identify images of cells, which have been assigned a number 1-6. In a post-training "quiz," subjects are then asked to identify the cells by number. We tested the hypotheses that, after training: (1) the experimental group will take less time to first fixate on an educationally salient, and (2) the number of subjects who fixate on educationally salient features will increase compared to baseline in the experimental group but not in the controls. Our preliminary results indicate no difference in time to first fixation on an educationally salient feature between experimental [1502.673 +/- 1485.077 ms] and control groups [3046 +/- 2558.974 ms]. The number of subjects in the experimental group that fixate on salient features remains constant after training (means: 6.4 view baseline; 6.2 view after training), whereas the control group viewed them less (7.4 baseline; 4.8 after training). While our second hypothesis was not upheld, these results do indicate an effect of training on gaze patterns, indicating that gaze tracking may be a useful tool to quantify learning.

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## SPRING BREAK CHALLENGE: A UNIQUE OPPORTUNITY FOR INTER-PROFESSIONAL, COMMUNITY-BASED PUBLIC HEALTH PRACTICE

L.RANKER, L.RABIN
Public Health Practice Office, Boston University School of Public Health

Problem: While student training allows individuals to develop content expertise and skills in their discipline, opportunities to apply these skills and interact across disciplines and professional schools are lacking.
Objectives: Over the five-day program, participating Boston University SPH, SSW and Sargent College students learned and applied community assessment skills in a real-world setting and collaborate across professional schools.
Description: During spring break, thirty-four participating BUSPH, SSW and Sargent students worked in six inter-disciplinary teams to assess factors promoting healthy behaviors and motivating youth and seniors to use the Blackstone Community Center's (BCC) FitWell center.
Methods: Skill-building sessions and workshops allowed students to acquire skills, including facilitating focus groups (FG), interviewing key informants (KI) and designing surveys. Students applied these skills by conducting FGs and KI interviews with community members. Teams presented their findings to a panel of judges and delivered final written reports including draft surveys. The winning team, as determined by the judges, was invited to present their findings to city leaders.
Evaluation: Participant surveys and qualitative feedback suggest this program offers innovative, "real-world" experiences. Noted strengths include inter-professional teamwork, applying qualitative research and survey design skills, and engaging the community. While feedback was positive, there are opportunities to improve the program, including maximizing use of the specialized skill sets of SSW and Sargent students.
Key Lessons Learned: The program compliments classroom education and creates an avenue for students to apply skills while experiencing the inter-professional nature of public health. The BCC-BU relationship provides a unique opportunity for continued cross-school collaboration and community engagement.
Future Directions: Inter-professional teams of students and staff will use the Challenge findings to inform next steps in the BCC assessment. In addition, the Practice Office is exploring whether this program could be a framework for inter-professional collaboration and practice-based learning in other settings.

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## DEVELOPING AN ADVOCACY CURRICULUM FOR PRIMARY CARE RESIDENTS AT BMC

C.RICH, J.SIEGEL, J.GAETA
Department of Medicine, Boston University School of Medicine

Background and Objectives
Medical training often exposes resident physicians to society's greatest challenges – human suffering, inequity, poverty, and psychological distress, to name a few. Consistent exposure to these troubles without tools to address them can lead to negative means of coping such as cynicism and sometimes burnout. Advocacy can help residents transform difficult experiences into meaningful work on behalf of their patients and their broader communities. Indeed, our internal medicine professional organizations and charters promote advocacy as integral to a physician's role, and other medical specialties require this of their trainees. Building on foundational work developed by Angela Jackson for BMC's primary care program, we have developed a next-generation advocacy training for primary care and urban health track residents in internal medicine.
Our curriculum addresses the knowledge, skills and attitudes needed for effective physician advocacy. For the pilot phase, our main objective is to engage residents and provide a flexible curriculum that meets their various needs. Ultimately, we hope to empower residents to formulate a personal advocacy agenda.
Description:
15 primary care residents (R1-R3) will participate in a week-long advocacy training program in early May, 2013. Four sessions of 2-2.5 hours each will include exposure to the basics of health advocacy, a panel of local health advocates, and targeted training in advocacy techniques such as op-ed writing, developing a pitch, and developing a clear advocacy platform. Residents will learn from experienced advocates such as former state senator and representative Jarrett Barrios and practice skills with hospital CEO Kate Walsh.
Evaluation:
Residents will complete pre- and post- program surveys to better personalize the training experience. For this pilot year, our survey focuses on resident attitudes, with future directions for curricula and evaluation to be determined upon completion of this pilot.

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## WHY LEAVE OUT THE STUDENTS: UTILIZING M&M'S AS A TEACHING TOOL

N.ROSELLI[1], J.ABBOTT[2]
[1]Boston University School of Medicine, Class of 2013, [2]Department of Obstetrics and Gynecology, Boston Medical Center

To date, there is no guideline or precedent for teaching Morbidity and Mortality (M&M) concepts to medical students. This dearth of data and formal curriculum regarding medical student teaching in M&M is interesting in light of the fact that every academic OB/Gyn department has ACGME mandated M&M exercises in which residents participate. To that end, all currently available literature and curriculum frameworks focus on maximizing educational and practical value of M&M for residents. Most departments include medical students in their M&M exercises, thus a framework is needed to ensure high quality learning and to begin to introduce medical students into the culture of quality and safety. Here we present a novel method of including the third year clerkship student in routine M&M conferences. At Boston University School of Medicine, we have tested a learning module regarding the purpose and rationale of M&M exercises. Students are assigned this self-directed module to review prior to conference to aid in their understanding of the crux and relevance of M&M. They are also provided with a note template to fill out during conference to engage critical thought and encourage active learning. Preliminary data gathered from an initial test group of 21 students showed an overwhelmingly positive response, with 17/21 students stating that they more completely understood M&M conference and the expectations of residents at M&M conference after having completed the module. Going forward, we plan to augment the module with the addition of representative case discussions and video modules to offer a more multi-modal, interactive learning experience.

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## TESTING CHANGE BY CHANGE IN TESTS: USING PRE AND PST-TESTS TO ASSESS THE NEW AMBULATORY CARDIOLOGY CURRICULUM IN 3 + 1 MODEL

M.SARDANA, S.BERNARD
Department of Medicine, Boston Medical Center

Statement of problem: The Internal Medicine Residency program at Boston Medical Center adopted a 3+1 schedule in 2009, creating 4 weeks of ambulatory subspecialty experience every fourth week. There are 4 lectures for each subspecialty rotation, but there has been no assessment of resident learning in this new model. To this end, we have developed a teaching curriculum in Cardiology, guided by In-Training Exam (ITE) objectives.

Goal: To use pre and post testing as a tool to evaluate effectiveness of Cardiology ambulatory teaching curriculum.

Methods: Each resident is given an open-ended pre-test at the end of their first ambulatory week, prior to the first of 4 standardized lectures. Teaching content is modified based on residents' performance in ITE and new areas of focus. Residents modify their answers in pre-test following the final lecture at the end of their rotation.

Results: In past 1.5 years, 69 residents have completed their ambulatory cardiology rotation. 33 residents completed both pre and post-tests with maximum score of 46. Mean scores were noted to significantly improve by 10.12 (or 22%) for the whole group in post-test compared to pre-test with similar trends seen in individual PGY classes. In addition, these tests identified the areas of consistently poor performance.

Limitations: PGY1 year performance may reflect the residents' prior cardiology exposures in medical school. We are not able to control for inpatient Cardiology experience or other exposures to Cardiology teaching at BMC.

Conclusions: With the limitations mentioned above, pre and post-testing proved to be a useful tool to evaluate the effectiveness of ITE performance based Cardiology ambulatory curriculum and to identify the areas requiring additional emphasis. These methods can be used across all subspecialties to assure a standard curriculum that is modifiable on an annual basis, with a goal of better preparation for ABIM certification.

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## CREATING A BOSTON WIDE STUDENT NUTRITION COMMITTEE

C.SCHOETTLER[1], A.MANDISA HERNANDEZ[2], J.CAMPBELL[3], S.FELDMAN1, K.PEACE[1], C.SMITH-LIN[1], R.LINDSAY[1], A.SAX[1], C.LO[3], W.A. WALKER[3], G.L.BLACKBURN[3], E.SALTZMAN[2] K.IRELAND[1], C.LENDERS[1]
[1]Boston University School of Medicine, [2]Tufts University School of Medicine, [3]Harvard Medical School

Problem: Medical students receive inadequate nutrition education, despite high levels of interest and believing that part of their role as future physicians is to provide nutrition and obesity education.
Objective: To increase medical students' knowledge, attitudes and skills in nutrition medicine through the creation of student partnerships and inter-professional activities across universities.
Methods: Creating a citywide student nutrition interest group, the Boston Medical Student Committee on Nutrition (BMSCoN). BMSCoN is composed of student leaders from student nutrition interest groups at Boston University School of Medicine, Tufts University School of Medicine and Harvard Medical School. Leaders are elected and include a chair, secretary, treasurer and school representatives.
Results: Establishing an annual lecture series on nutrition medicine and an annual nutrition oriented community outreach event. Increased student interest in nutrition, as evidenced by rising participation in lecture series: 78 in 2011; 86 in 2012. Participation in student nutrition groups is rising from a total of 78 students in 2011 to 101 students in 2012 across all three schools. The collaboration has created unprecedented opportunities for nutrition medicine collaborations, networking and mentoring.
Conclusion: Creating a new and sustainable citywide group requires a clear organizational structure and support from passionate students as well as their faculty advisers. Cross - school activities such as the lecture series have resulted in heightened student interest in nutrition medicine as well as increased nutrition medicine opportunities for students.

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## MEDICAL STUDENT EDUCATION IN ONCOLOGY: A MULTI-YEAR ANALYSIS OF AN INTEGRATED ONCOLOGY BLOCK IN THE PRE-CLINICAL CURRICULUM

B.SHAH, A.AGARWAL, D.AHUJA, A.HIRSCH
Department of Radiation Oncology, Boston University School of Medicine

Purpose: We assess the educational impact of the Oncology Education Initiative (OEI), a program that originally assessed oncology education in clinical years, and expand the analysis to the inclusion of a dedicated preclinical oncology block.
Methods: The second-year oncology block encompasses disease and therapy aspects at a pre-clinical education level. Surveys regarding oncology and radiation oncology education were administered to 89 third and fourth year students in the class of 2012 and 2013, with a focus on the second-year oncology block. One sample chi-squared tests were performed using R to compare responses of the current sample to those of 284 students between 2009 and 2012.
Results: Of the 89 students surveyed, 99% indicated that oncology is an important component of medical school education and 81% believed that the pre-clinical oncology block provided the basics for a vertically integrated cancer education. Overall, the majority of students indicated they were glad the oncology block was formed (90%), reflecting a significant increase in responses compared to the previous three years (54.6%) at the 0.05 significance level, CI (83.6, 96.2). Roughly 87% believed it contributed effectively to their overall medical education, also showing a significant increase in responses compared to the previous three years (63.7%) at the 0.05 significance level, CI (79.4, 93.6).
Conclusion: Dedicated pre-clinical oncology education is an important component of undergraduate medical curriculum. Students generally express a desire to have greater exposure to various aspects of oncology during their undergraduate medical education, and the increase in student response over time may reflect the course's improvement based on student feedback. The addition of a dedicated second year oncology block and the OEI in general is a sustainable and very well-received initiative that continues to show improvements in cancer education for medical students.

**(ORAL*)**

## EVALUATING MEDICAL STUDENTS' ORAL CASE PRESENTATIONS DURING A PEDIATRIC CLERKSHIP IMPROVES THEIR SUBSEQUENT PRESENTATIONS: RESULTS OF A MULTI-CENTER RANDOMIZED CONTROLLED TRIAL

C.SOX[1], G.VARGAS[1], M.DELL[2], C.PHILLIPI[3], L.LEWIN[4]
[1]Department of Pediatrics, Boston Medical Center, [2]Department of Pediatrics, Case Western Reserve University School of Medicine, [3]Department of Pediatrics, Oregon Health and Science University, [4]Department of Pediatrics, University of Maryland School of Medicine,

Background: Oral case presentation is a critical skill medical students must learn during clinical clerkships. The ideal means of teaching this skill remains unknown.
Objective: To determine if participating in a structured presentation evaluation session early in pediatric clerkships with faculty using either a simple or detailed evaluation form improves medical students' subsequent oral case presentations.
Methods: We conducted a single-blinded randomized controlled trial (RCT) with 3 groups: (1) control, (2) "simple" intervention, and (3) "detailed" intervention groups. Both intervention groups had presentations formally evaluated within 10 days of beginning the clerkship, while controls did not. The "simple" group was evaluated using a single-item scale, while the "detailed" group was evaluated using a validated 18-item evaluation form. The study population included medical students rotating in third-year pediatric clerkships during a 1-year period at BUSM, U. Maryland SOM, Oregon Health & Science University, or Case Western Reserve USOM. The primary outcome was the overall quality of students' presentations assessed at the end of the clerkship by faculty blinded to randomization status. Data analyses were conducted using chi-square and t-tests.
Results: 391 students participated in this study; 127 controls, 138 in the "simple" intervention group, and 122 in the "detailed" intervention group. The mean presentation quality at clerkship end was higher in the "detailed" group than in controls (6.36 vs. 5.83; $p<0.003$), while there was no significant difference in presentation quality between the "simple" and control groups (6.04 vs. 5.83; $p<0.23$). More students in both intervention groups felt their ability to give effective presentations improved during the clerkship ("simple" = 94.3%; "detailed" = 95.0%) than controls (82.7%; $p < 0.004$ & 0.001, respectively).
Conclusion: This multi-center RCT demonstrates that delivering feedback on students' presentations early in pediatric clerkships using a detailed evaluation form improves the quality of their subsequent presentations.

*** AWARD WINNING ABSTRACT** – Will be presented by primary author after the Deans Panel

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## DESIGNING A MEDICAL STUDENT ELECTIVE: DIAGNOSTIC USES OF THE MICROSCOPE FOR COMMON DISEASES IN THE US AND IN GLOBAL HEALTH

A.TANG HOU[1], S.OBERHAUS[2]
[1]Boston University School of Medicine, Class of 2013, [2] Department of Microbiology, Boston University School of Medicine

Statement of Problem:
Students in the current BUSM curriculum have limited opportunities to learn how to use a light microscope, an essential instrument used in clinical lab tests ordered by physicians to help diagnose common diseases. For those interested in healthcare delivery in resource-poor settings globally, the microscope is an affordable, versatile option in aiding diagnosis. A need exists in the medical curriculum to provide elective training in specimen preparation and analysis using light microscopy.
Objectives of Program:
Design a 4-week elective to equip fourth-year medical students with basic skills in performing and interpreting common diagnostic tests on clinical specimens utilizing the light microscope.
Description of Program:
Participants will learn how to perform and interpret a/an: Gram strain for bacterial infections, acid-fast stain for mycobacteria (tuberculosis), blood smear for Plasmodium (malaria), urine sediment test to detect urinary infections, and others. The elective consists of hands-on labs, case discussions, and a final project.
Methods:
Faculty in infectious disease, global and public health were surveyed to determine which lab tests should be taught for use in resource-poor settings. A literature search, competitive analysis, and BUSM curriculum review were performed to assess available materials and to identify needs in the curriculum. The BMC Clinical Microbiology lab provided some basic training. A proposed syllabus and medical-student questionnaire were developed.
Evaluation:
A questionnaire was emailed to 182 medical students to evaluate interest in this elective. 59% and 18% of the respondents felt this should be an elective or required course, respectively, in the BUSM curriculum. If offered, 14% would “Definitely take it” and 51% would “Probably take it”. The most cited reasons were: to understand basic lab tests they will order as doctors (82%), and an interest in global health (48%).
Future Directions:
There is notable interest by medical students for this elective; however, funding will be required to support teaching faculty and staff and for basic supplies.

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## YOGA AS AN EXPERIENTIAL LEARNING TOOL TO EFFECTIVELY TEACH MUSCULOSKELETAL ANATOMY OF THE BACK AND LOWER EXTREMITIES

A.TOMSON[1], A.ZUMWALT[2]
[1]Division of Graduate Medical Sciences, Boston University School of Medicine
[2]Department of Anatomy and Neurobiology, Boston University School of Medicine

The concept of learning human anatomy through activity, specifically yoga and Pilates, can increase comprehension and understanding of the material being taught. This concept was pioneered in medical education in 2004 by two medical students with their director of Anatomy at the Mt. Sinai School of Medicine. Following their model, students at Boston University School of Medicine were offered a 1.5-hour review of the musculature of the back and lower extremity, using yoga as an experiential learning tool. The workshop utilized active yoga poses to emphasize muscle action and stretching poses to highlight the origins and insertions of muscles and muscle groups of interest. Improvement in student’s comprehension was measured using an online survey offered before and after the workshop including 10 questions directly addressed in the yoga anatomy module, and 5 related! questions that were not specifically discussed in the yoga module, but were directly addressed in Anatomy lecture and/or lab. Post- survey analysis showed significant improvement in comprehension of the topics covered after the yoga anatomy review. There was also minimal improvement in the topics not addressed in the review. Additionally, students reported feeling more relaxed afterward and appreciated the opportunity to be active while studying, allowing them to effectively maximize their time.

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## LESSONS LEARNED FROM FLIPPING A LARGE MEDICAL COURSE

L.TOTH, R.J. RUSHMORE
Department of Anatomy and Neurobiology, Boston University School of Medicine

In Fall 2012, the course “Cellular Organization of Tissues” at Boston University was completed by 163 students, representing the majority of the Masters in Medical Sciences program 1st year students. This was the 2nd time the course had been offered. Three professors and two students created a total of 53 videos replacing content that was covered in parts of 27 live lectures the previous year, and an additional 15 videos that covered some teaching normally done in small group lab sessions. Lecture time was then made available for review, slower-paced discussion of harder material, presentation of clinical vignettes, discussion of literature, and summative evaluations. Didactic teaching was largely eliminated from the labs, freeing professors and TAs for individual or small group instruction. Written feedback was received from 159 students. Students expressed overwhelming support for the course and the concept of teaching through videos. Negative comments included critiques of the style of individual videos, and concerns that the videos increased confusion about what to study. After reviewing the comments, the teaching staff agreed that the most important change for next year will be to improve our initial communication to the class about the intent, purpose and expectations of the video-based instruction, and in the context of a large class to improve the regularity and predictability of the video instruction as a portion of their weekly studying.

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## BRAIN ENRICHMENT PROGRAM: PROMOTING BRAIN HEALTH AND EDUCATION AMONG THE ELDERLY

K.TRECARTIN
Boston University M.A. in Medical Sciences Program, Class of 2013

Maintaining neurological and mental health is critical to longevity and general well-being. Given the extent of current research and news pertaining to the brain, it is often difficult and overwhelming for the elderly to access and process available information. The Brain Enrichment Program has been developed to promote brain awareness, provide access to information and research, and engage in exercises to maintain an active mind.

This program currently meets monthly at Brightview Danvers Senior Living. The sessions are one hour long in the community’s theater using PowerPoint presentations, videos, and handouts. Each session begins with a relevant news story, followed by warm-up brain teasing activities, and concludes with a lesson based on a monthly focus or disease. We have covered daily practices, such as the importance of diet and exercise, as well as specific issues, including the risks and symptoms of concussions. My students were shy when they began the program, unwilling to talk about difficult issues relating to themselves and those close to them. Now, a year later, conversation is dynamic, as they’ve become more comfortable speaking openly with each other owing to a greater understanding of these complex and challenging matters. They have become more educated, and are able to understand specific brain regions and functions, as well as how to interpret scientific reports. I have learned! an incredible amount about how to convey sensitive topics to a vulnerable population, and how to make brain education fun and engaging (to a group with the uncanny ability to fall asleep in under two minutes). I hope to further develop this program and extend sessions to other communities. I am also interested in piloting these sessions on a younger population that may be better suited to make informed, healthy, lifestyle changes.

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## THE SIMROID

S.UPPU, T.SUGGALA
Boston University Goldman School of Dental Medicine, Class of 2014

Simroid- realistic patient robot for dental education and training.

SIMROID realistically simulates the behavior and reactions of a patient and can communicate with students. Both dental treatment and appropriate communication skills can be learned using the robot under almost real conditions.

The first prototype was the simloid which was introduced in 2007 by Nippon university and the dental equipment maker Morita manufacturing, Simroid is much more advanced version with speech recognition software. This can evaluate the work of subjects via sensors in the oral cavity and feed them to a computer. The instructor observes and controls the training units from a computer and can also record treatment for evaluation and graphic presentation – making it easier to document achieved learning progress. The new patient robot also responds to questions and instructions with movements by means of a pneumatic drive cylinder, and making the simulation close to the behavior of a "real" human patient. The Simroid's full set of teeth are fitted with sensors and the robot yelps when the dentist's equipment touches the virtual nerves. The instructor can simulate different treatment situations and patient types by means of various program settings. Some clinical scenarios are already pre-programmed for example, SIMROID reacts with a gag reflex during treatment or flinches after an inadvertent touch, expressing its displeasure. The patient robot is controlled via a fast-operating touch screen monitor. All in all, the SIMROID consists of the patient robot, the CCD camera supports and the GUI (graphic use interface) System: a computer, an LCD touch screen monitor, two CCD cameras and speech recognition head set.

SIMROID is an ideal addition for dental training and represents the possible next generation training model. So in near future holistic dental education can be achieved by introducing objective feedback system in realistic conditions even in the simulation centers.

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## ON-LINE MODULE TO FACILITATE STUDENT SELF-LEARNING IN BIOCHEMISTRY

J. URBACH[1], A. GALLAN[2], K. SYMES[3], G. OFFNER[4]
Boston University School of Medicine, [1]Class of 2016 and [2]2013, Department of [3]Biochemistry and [4]Medicine, Boston University School of Medicine

BACKGROUND and OBJECTIVES: The primarily lecture-based Biochemistry and Cell Biology courses for first year medical students and students in the MAMS Program contain three sections: Foundations of Biochemistry, Nutrition and Metabolism and Molecular Biology. To promote student engagement, the goal was to develop a “flipped” classroom model in which basic content was provided in an on-line format so that class time could be used for interactive discussions with clinical correlations. Since content in the Nutrition and Metabolism section is straightforward and familiar to many students, this material was used to develop a web-based module containing detailed information on metabolic pathways as well as student self-assessments.

METHODS: The module was developed using iWeb to merge existing course content with curated multimedia in a way that students would find useful and intuitive. Each metabolic pathway had its own webpage which contained a text description of the process, an interactive pathway, games, practice quizzes, instructional videos, clinical correlations, and USMLE style board review questions. The module appeared as one of the Course Documents resources in the Blackboard environment.

RESULTS: The web content was generally well-received. The 207 students in the MAMS course accessed the module with a total of 11, 439 “hits” over the course of the semester. When surveyed, 61% of students reported that the on-line content was helpful and suggested that it be expanded in future years.

CONCLUSION: Web-based content is an effective tool for student self-learning and plans are in place for creating on-line modules for the Foundations and Molecular Biology sections of the course. Several of the lectures which previously presented fundamental content will be replaced with in class and small group case-based and literature discussions.

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## TEACHING AND ASSESSING MICROSCOPY SKILLS IN MED STUDENTS

S.WONG[1], A.DEVAIAH[2]
[1]Boston University School of Medicine, MD Candidate, [2]Department of Otolaryngology, Boston Medical Center

Formal training in clinical microscopy is rarely included in medical school curricula. This lack of exposure may influence students' ability to make an informed decision about specialties. This research means to assess methods addressing this gap in medical education.

Objectives: (1) Evaluate the type of instructional method, video and/or personal instruction, most effective at teaching clinical microscopy to medical students (2) Measure students' feedback on the usefulness of this training

Methods: 15 medical students were randomly and sequentially assigned to one of three 3-minute training sessions: video instruction, personal demonstration, and combination of video and personal instruction. After training, students were timed performing two tasks. Task 1 was to focus on an object; task 2 was to focus and use alligator forceps to remove the object from a cup. Student completed a pre- and post-training questionnaires regarding their perception of the training.

Results: One-tailed t-tests at 5% significance level were used to compare the three groups' performances. Task 1: There was no significant difference among the groups. Task 2: Those who received video instruction, either alone or combined with personal demonstration, were fastest at focusing the microscope before performing the manual task (p

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## INADEQUATE DOCUMENTATION OF ADVANCED CARE PLANNING: A RESULT OF LOCK OF KNOWLEDGE OR ARE INTERNS NOT HAVING THE CONVERSATION

M.YOUNG[1], S.CHAO[1], V.PARKER[2], W.SUEN[1]
Department of Medicine, Section of Geriatrics, Boston Medical Center, [2]Department of Health Policy and Management, Boston University School of Public Health

BACKGROUND: During transitions of care, a patients' health care agent, determining resuscitation wishes and delineating goals of care should be documented in his or her discharge summary so the receiving provider can easily access the information. However, during a baseline review of 50 random charts of patients 65 and older who were discharged to hospice from Boston Medical Center between 2005-2010, the majority did not include all three components of advance care planning documentation (ACP) in the discharge summary.

METHODS: We created an annual hour long interactive workshop focused on documentation of ACP for internal medicine interns, since they usually write the discharge summary. During the session, we administered a pre- and post-survey to assess the interns' attitudes, behavior and knowledge about ACP expected impact.

RESULTS: Eleven interns completed the pre-survey and 21 interns completed the post-survey. During the pre-survey, only 25% of pre-survey respondents correctly identified all three components of ACP, compared with 76% of post-survey respondents. In the post-survey, interns cited the history and physical as the place where ACP was documented 83% of time and the discharge summary was listed as the place 36% of the time (interns could select more than one location). When asked what they would do differently based on the workshop, two major themes emerged: 1) to ensure documentation of ACP in the discharge summary and 2) to have a conversation about ACP more often.

CONCLUSION: An interactive workshop about components of ACP improved interns' knowledge. Whether improvement in interns' knowledge of ACP will lead to improved documentation, however, is unknown. More workshops and longitudinal data are needed to determine whether lack of ACP documentation is because of lack of knowledge or because interns are not having conversations about ACP with patients.

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## COMMUNITY ENGAGEMENT: A POWERFUL EDUCATIONAL TOOL

L.YU, M.ZIELENBACH, N.ECONOMOU, M.NOLAN
Boston University School of Medicine, Class of 2015

Objective: While the LCME institutional objective 14 encourages that "service-learning" activities be accessible to medical students and LCME educational objective 15 states that students must be prepared to "recognize (1) wellness, (2) determinants of health, and (3) opportunities for health promotion", students themselves often feel isolated from the communities they serve and learn from, and unaware of many of the unique difficulties many patients face. To deepen first and second year medical student understanding of health determinants, and to introduce students to local resources and attitudes, The Boston University Advocacy Training Program (BUATP) has implemented a community engagement project to its spring elective.

Methods: All 30 students enrolled in the elective were required to engage in a community-organized event outside of BUSM including a health screening fair for hotel workers, lobbying events in DC, and town hall meetings. Students wrote a reflection piece on the event and debriefed during the final class.

Results: The BUATP curriculum successfully meets internal learning objectives as well as LCME objective 15 as self-reported by students taking the elective. In addition students reported being more likely to engage in advocacy outside of BUSM as well as expressing a stronger understanding of their community and those they hope to serve.

Conclusions: Directed community engagement is a powerful educational tool for teaching medical students about the social determinants of health and enhancing their involvement in opportunities to promote health and wellbeing in those that they will serve in their clinical years and beyond. We have shown that small initiatives that encourage students to leave the medical campus and engage with patient populations outside of the hospital can have a positive and meaningful impact on improving community understanding. We will continue to develop and evaluate community engagement curriculum and its usefulness in medical education.

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## USING CASE-BASED LEARNING AND COLLABORATIVE RESEARCH TO PROMOTE MEDICAL STUDENT PROFICIENCY IN ADDRESSING SOCIAL DETERMINANTS OF HEALTH

M.ZIELENBACH, N.ECONOMOU, M.NOLAN, L.YU
Boston University School of Medicine, Class of 2015

Objective: BUSM's institutional learning objectives state that the BUSM graduate "supports optimal patient care through identifying and using resources of the health care system." The preclinical years of the curriculum expose students to evidence-based resources for providing optimal biomedical care to patients, but provide little instruction in the resources available to address the social determinants of health. In order to equip first and second year medical students to identify and address relevant social determinants, the Spectrum of Physician Advocacy elective devoted a session to a guided research activity focused on this issue.

Methods: Students were provided a case featuring an undocumented immigrant family experiencing food insecurity, then divided into four groups to research relevant topics: insurance options for undocumented immigrants in MA, nutrition support programs, barriers to quality care for immigrant families, and potential pathways to authorized status. Students consulted recommended resources for each topic. The students then formed new groups, presented their findings, and collaborated to develop a plan based on their research.

Results: Students surveyed post-activity felt they were better equipped to care for patients using existing programs in Boston and at BMC. They were exposed to resources they can use in the future to identify and address social determinants of health. Through a collaborative research process, they practiced team-based management of a hypothetical patient. Students can now apply these skills when they care for patients during their clinical years and beyond.

Conclusions: Identifying and addressing social determinants of health in the context of the clinical encounter is an essential component of supporting optimal patient care. Students in the preclinical years require practice with this process, and a guided research-based case discussion is an effective means to equip students with the resources and skills needed to successfully care for their patients in the context of social inequity.

## THE USE OF TECHNOLOGY IN RESIDENCY MEDICAL EDUCATION: FRIEND OR FOE?

R.ZITNAY
Department of Medicine, Section of Internal Medicine/Geriatrics, Boston Medical Center

Background: Use of social media (SM) and other digital technologies (DT) in residency medical education is thought to augment learning by providing a multisensory, experiential environment to “digital natives,” defined as those born before 1982. Yet, little research explores the attitudes, experiences, and concerns of medical trainees in using SM and DT in educational settings.
Methods: An 18 question survey, based on a literature review, was developed to explore residents’ attitudes towards the use of SM and other DT in medical education. All Internal Medicine postgraduate year (PGY) 2 and 3 residents at Boston Medical Center (BMC) were offered the survey once during a routine conference between March and April 2013.
Results: Out of 92 total available PGY 2 and 3 residents, 64 responded (70% response rate). While 80% were considered “digital natives,” the majority reported only feeling somewhat comfortable with the use of SM and 65% reporting rarely or never using it to connect with fellow residents. The majority also reported rare use of SM or DT in residency education, yet found it somewhat effective when utilized. However, they remain uncertain about their interest in its use in future educational interventions in all rotational settings (clinic week, elective, and inpatient). Numerous concerns, including professionalism issues (61%), user privacy (55%), patient privacy (48%), technical problems (48%), user-friendliness (31%) and information quality (30%) were identified. Only 48% felt that the use of these technologies will be important in future practice.
Conclusion: Despite frequent use outside of the classroom, Internal Medicine residents at BMC report uncertainty in the use of SM and DT’s role in enhancing medical education. Further studies are needed to demonstrate its effectiveness and feasibility, especially considering the numerous concerns reported by trainees.

# MEDICAL CAMPUS TEACHING AND SERVICE AWARDS

**Malcolm Bryant,** M.D., Boston University School of Public Health, Department of International Health
*2012 Educational Innovation Award, Boston University School of Public Health*

**Shoumita Dasgupta,** Ph.D., Boston University School of Medicine, Department of Medicine
*2013 Stanley L. Robbins Award for Excellence in Teaching, Boston University School of Medicine*

**Mark Ferriero**, D.D.S., Boston University Goldman School of Dental Medicine, Department of General Dentistry
*Faculty Recognition Award for Educational Innovation, Boston University Goldman School of Dental Medicine*

**Cataldo Leone,** D.M.D., Boston University School of Goldman Dental Medicine, Department of Periodontology & Oral Biology
*Spencer N. Frankl Award for Excellence in Teaching, Boston University School of Dental Medicine*

**Bing Liu,** D.M.D., Boston University Goldman School of Dental Medicine, Department of Operative Dentistry
*Crest Oral B Outstanding Faculty Award: Clinical Sciences, Boston University Goldman School of Dental Medicine*

**David McAneny**, M.D., Boston University School of Medicine, Department of Surgery
*2013 Committee on Faculty Affairs Educator of the Year Award for Clinical Sciences, Boston University School of Medicine*

**Daniel Moran,** D.D.S., Boston University Goldman School of Dental Medicine, Department of General Dentistry
*Crest Oral B Outstanding Faculty Award: Clinical Sciences, Boston University Goldman School of Dental Medicine*

**Matthew Nugent,** Ph.D., Boston University School of Medicine, Department of Biochemistry
*2013 Committee on Faculty Affairs Educator of the Year Award for Graduate Sciences, Boston University School of Medicine*

**Stephanie Oberhaus,** Ph.D., Boston University School of Medicine, Department of Microbiology
*Spencer N. Frankl Award for Excellence in Teaching, Boston University School of Dental Medicine*

**Victoria Parker,** Ed.M., Boston University School of Public Health, Department of Health Policy & Management
*2011-12 Norman A. Scotch Award for Excellence in Teaching, Boston University School of Public Health*

**Elizabeth Rivera***,* Boston University School of Medicine, Office of Medical Education
*2013 Office of Academic Affairs Excellence in Service Award, Boston University School of Medicine*

**Lorraine Stanfield,** M.D., Boston University School of Medicine, Office of Medical Education
*2013 Leonard Tow Humanism in Medicine Award, Boston University School of Medicine*

**Lorraine Stanfield,** M.D., Boston University School of Medicine, Office of Medical Education
*2013 Committee on Faculty Affairs Educator of the Year Awards for Preclinical Sciences, Boston University School of Medicine*

**Lisa Sullivan**, Ph.D., Boston University School of Public Health, Department of Biostatistics
*2013 Leadership Award from the Massachusetts Network of Women Leaders in Higher Education.*

**Deborah Vaughan**, Ph.D., Boston University School of Medicine, Department of Anatomy and Neurobiology
*2013 Metcalf Cup and Prize, Boston University School of Medicine*

**Elizabeth Whitney,** Ph.D., Boston University School of Medicine, Department of Anatomy and Neurobiology
*Crest Oral B Outstanding Faculty Award: Basic Sciences, Boston University Goldman School of Dental Medicine*

**James Wolff**, M.A.T., Boston University School of Public Health, Department of International Health
*2012-13 Norman A. Scotch Award for Excellence in Teaching, Boston University School of Public Health*