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## 15<sup>th</sup> Annual John McCahan Medical Campus Education Day

*Showcasing Educational Innovation and Scholarship on the  
Boston University Medical Campus*



**Wednesday, October 21, 2020**  
*Virtual Event*

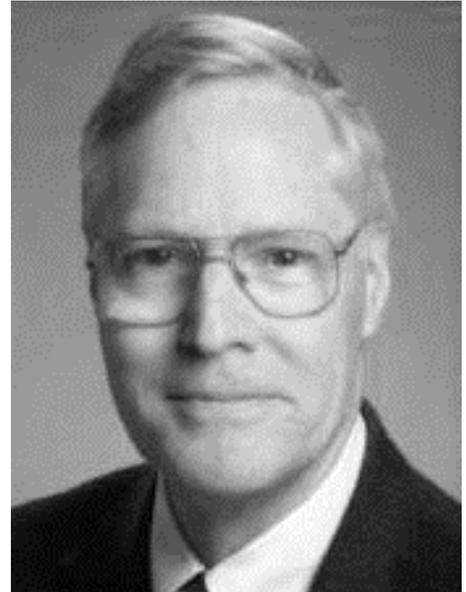
**School of Medicine**  
**Graduate Medical Sciences**  
**School of Dental Medicine**  
**School of Public Health**

## John F. McCahan, M.D.

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Dr. John F. 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 was a regular preceptor of 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 Alpha Omega Alpha.

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 Boston University School of Medicine 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.

**Boston University** Medical Campus  
Office of the Dean and Provost

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Karen Antman, M.D.  
Provost, Medical Campus  
Dean, School of Medicine  
Professor of Medicine



October 21, 2020

Welcome to  
***Virtual* The 15th Annual John McCahan  
Medical Campus Education Day**

Dear Colleagues,

Welcome to the *virtual* 15<sup>th</sup> 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, and then as Dean from 2003 to 2005. We are pleased to celebrate Boston University medical campus educators with a day of stimulating speakers, workshops, and innovative ideas to inform and inspire.

Our keynote speaker this year, David H. Rose, EdD, is a developmental neuropsychologist and educator who develops new technologies for learning.

In 1984, Dr. Rose co-founded the Center for Applied Special Technology (CAST) a not-for-profit group to study the cognitive neurosciences and to improve education for all learners with innovative, modern, multi-media technology. The work grew into Universal Design for Learning (UDL), a new field that now influences educational policy and practice in the United States and many other countries.

Dr. Rose has been the principal investigator on U.S. Department of Education and National Science Foundation grants to advance the ideas and practices of UDL. He has authored dozens of journal articles and academic book chapters and several books including *Universal Design for Learning: Theory & Practice* (CAST Professional Publishing, 2014) and *Teaching Every Student in the Digital Age: Universal Design for Learning* (ASCD, 2002). He has also testified before the U.S. Senate's Appropriations Subcommittee and regularly advises state departments of education on policies related to the education of students with disabilities and designing educational systems.

Virtual oral presentations will cover a variety of topics to engage our educators in reevaluating how we teach, including evaluation, testing and assessment, educational models and methods.

Come and connect and enjoy the dialogue with your colleagues.

Sincerely,

A handwritten signature in blue ink, appearing to read "Karen Antman".

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

## ACKNOWLEDGMENTS

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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:**

#### **Department of Medical Sciences & Education**

Hee-Young Park (Professor and Chair)  
Theresa Davies (Educator)  
Maura Kelley (Educator)  
Elaine Lee (Educator)  
Stacey Hess-Pino (Educator)  
Paige Curran (Educator)  
Fadie Coleman (Educator)  
Kathleen Berentsen Swenson (Educator)

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#### **BUMC IT, Educational Media**

Jana Mulkern  
Kenith Wilson  
Jack Wolfe  
David King

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#### **BU Goldman School of Dental Medicine**

Yoshiyuki Mochida (Molecular & Cellular Biology)

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#### **BU School of Public Health**

Carol Dolan (Community Health Sciences)

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#### **Educators**

Jonathan Wisco (Anatomy & Neurobiology)  
Aaron Young (Physiology)  
Lindsay Demers (Medicine)

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#### **Alumni Medical Library**

David Flynn

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#### **Medical Education Office**

Caroline Mulligan  
Melissa Paz  
Jodie Trainor  
Elizabeth Yellen (Office of Academic Affairs)

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#### **Dean's Office**

Daniella Adrien

---

*The McCahan Day Planning Committee also wishes to give special thanks to Liz Jenkins and A'Llyn Ettien from the Alumni Medical Library for putting together the visual abstract templates.*

**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  
Graduate Medical Sciences, Boston University School of Medicine  
Graduate Medical Education, Boston Medical Center  
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 Student Affairs, Boston University School of Medicine  
Office of the Dean, Boston University School of Public Health  
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**The Planning Committee acknowledges with appreciation the support and participation of the following educational vendors:**

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# 15<sup>th</sup> Annual John McCahan Medical Campus Education Day Virtual

## Schedule of Virtual Events

Theme: *Learning from Anywhere for Everyone*

### Morning Session (12-2p.m.)

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12:00-12:10 p.m.	<b>Welcome</b> Karen Antman, M.D. Provost, BU Medical Campus
12:10-12:15 p.m.	<b>Remarks from John F. McCahan, M.D.</b>
12:15-1:15 p.m.	<b>Keynote Address</b> <i>Learning from Anywhere for Everyone: Designing for Diversity in Ability and Identity</i> David. H. Rose, Ed.D.
1:15-1:45 p.m.	<b>Q&amp;A</b>
1:45-2:00 p.m.	<b>Abstract winners announced</b> Best Student Abstract: Melanie Fritz Best Resident/Fellow Abstract: Sarah Kleinschmidt Best Faculty Abstract: Elaine Lee  Best School of Medicine Abstract: Melanie Fritz Best Goldman School of Dental Medicine Abstract: Katelyn Pan Best School of Public Health Abstract: Anna Nidhiry

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### Evening Session (6-8p.m.)

Attendees are encouraged to visit multiple presentations, interact with presenters, and ask questions! Detailed schedule and links provided on the following pages.

- Room 1: Teaching Tools
  - Room 2: Faculty Development and Social Research
  - Room 3: Overall Curriculum
  - Room 4: Course Curriculum 1
  - Room 5: Course Curriculum 2
  - Room 6: Networking
-

### **ROOM 1: Teaching Tools**

**Moderators:** Kathleen Berentsen Swenson, Paige Curran

Meeting ID 915 9072 8034 Password 671007 [LINK](#)

- |           |                     |  |
|-----------|---------------------|--|
| 6:00-6:20 | Melanie Fritz       | Development of a virtual case series of abdominal pain etiologies for surgery clerkship medical students   |
| 6:20-6:40 | Sarah Kleinschmidt  | The “Favorite Patient” exercise: A non-confrontational curriculum to address bias in emergency medicine clerkship students                         |
| 6:40-7:00 | Kathleen B. Swenson | From one clinical rotation to another: A pilot study on the use of standard patient encounters to foster transition in genetic counseling training |
| 7:00-7:20 | Breno Reboucas      | Selection and use of educational resources by dental students  |
| 7:20-7:40 | Zoya Tharani        | The impact of peer mentoring on the professional development of dental students  |

### **ROOM 2: Faculty Development and Social Research**

**Moderators:** Elaine L. Lee, Fadie T. Coleman

Meeting ID 912 6774 2112 Password 486620 [LINK](#)

- |           |                  |  |
|-----------|------------------|--|
| 6:00-6:20 | Katelyn Pan      | Perceived value of peer mentorship   |
| 6:20-6:40 | Hannah E. Mumber | Impact of comfortable in our skin group workshops on media awareness and self-confidence in adolescents, a population at risk for body dysmorphic disorder |
| 6:40-7:00 | Anna S. Nidhiry  | Impact of socioeconomic status on patients with Type 2 diabetes at Boston Medical Center: Field-testing the REDD-CAT                                       |
| 7:00-7:20 | Vasiliki Maseli  | Digital technology integration and evaluation of faculty training effectiveness  |
| 7:20-7:40 | Elaine L. Lee    | Peer-to-Peer (P2P) faculty grant writing group: Pilot outcomes   |

### **ROOM 3: Overall Curriculum**

**Moderators:** Maura Kelley, Stacy Hess-Pino

Meeting ID 959 1314 8553 Password 860802 [LINK](#)

- |           |                     |  |
|-----------|---------------------|--|
| 6:00-6:20 | Alexander Valentine | ENGxMED: An interdisciplinary learning environment for engineering and medical students  |
| 6:20-6:40 | Judy J. Wang        | State of innovation and technology in undergraduate medical education: A mixed-methods review  |
| 6:40-7:00 | Kyle Schoppel       | Benchmark performance of emergency medicine residents in pediatric resuscitation: Are we optimizing pediatric education for emergency medicine trainees? |

7:00-7:20	Heather Miselis	Teaching the next generation of healthcare providers: The impact of a longitudinal interprofessional experience in the clinical learning environment
7:20-7:40	Sheila Rodriguez-Vamvas	A guide to implement digital technology in US dental schools

#### **ROOM 4: Course Curriculum 1**

**Moderators:** Jonathan J. Wisco, Melissa Paz

Meeting ID 954 5911 3229 Password 548786 [LINK](#)

6:00-6:20	Sam C. Gonzalez	Effect of split-day clinic sessions on FM Resident burnout, extraneous cognitive load, and clinical learning satisfaction
6:20-6:40	Shannon Wong	Pre-doctoral clinical geriatric rotation's impact on knowledge and attitudes
6:40-7:00	Megan Alexander	A needs assessment of a medical student curriculum on lifestyle medicine and motivational interviewing
7:00-7:20	Anne Marie Wells	Two-stage exam: A formative assessment for individual and group performance and growth
7:20-7:40	Joe Colucci	Near-peer problem solving sessions: A supplemental cardiovascular, respiratory, and renal first year medical physiology curriculum

#### **ROOM 5: Course Curriculum 2**

**Moderators:** Theresa Davies, Jana Mulkern

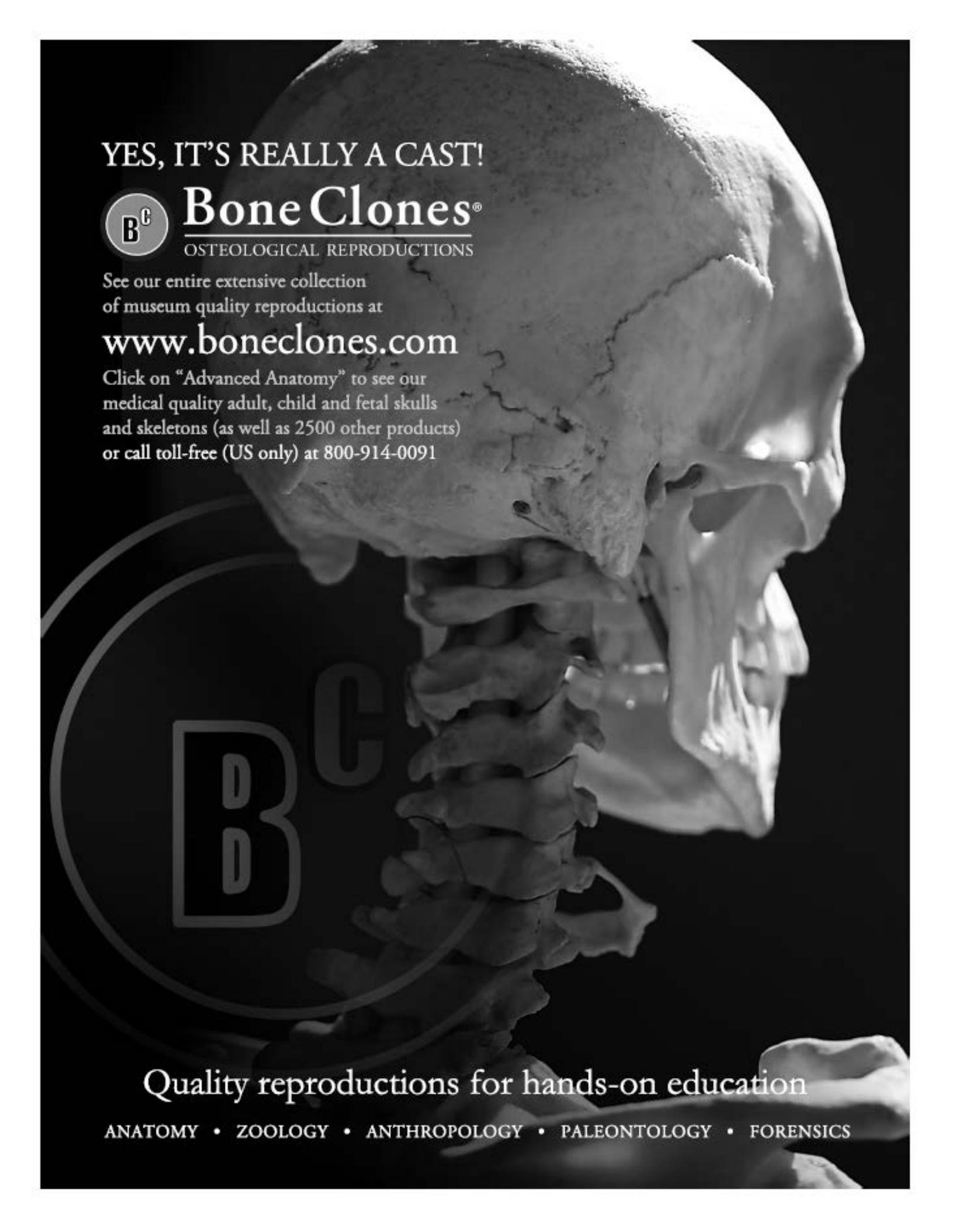
Meeting ID 935 4321 7971 Password 841046 [LINK](#)

6:00-6:20	Matthew Miller	Development and implementation of a medical Haitian Creole curriculum for Boston Medical Center
6:20-6:40	Gibran S. Mangui	Evaluating baseline data to tailor community-based education programs
6:40-7:00	Nivetha Saravanan	Do no harm: Harm reduction curriculum for pre-clinical students
7:00-7:20	Simran Grover	How do we treat dental patients under influence of marijuana?
7:20-7:40	Alaa H. Qari	Saving senior smiles: A community outreach education program and a pilot research project

#### **ROOM 6: Networking Room**

**Moderators:** Hee-Young Park, David Flynn

Meeting ID 922 5048 6086 Password 990859 [LINK](#)



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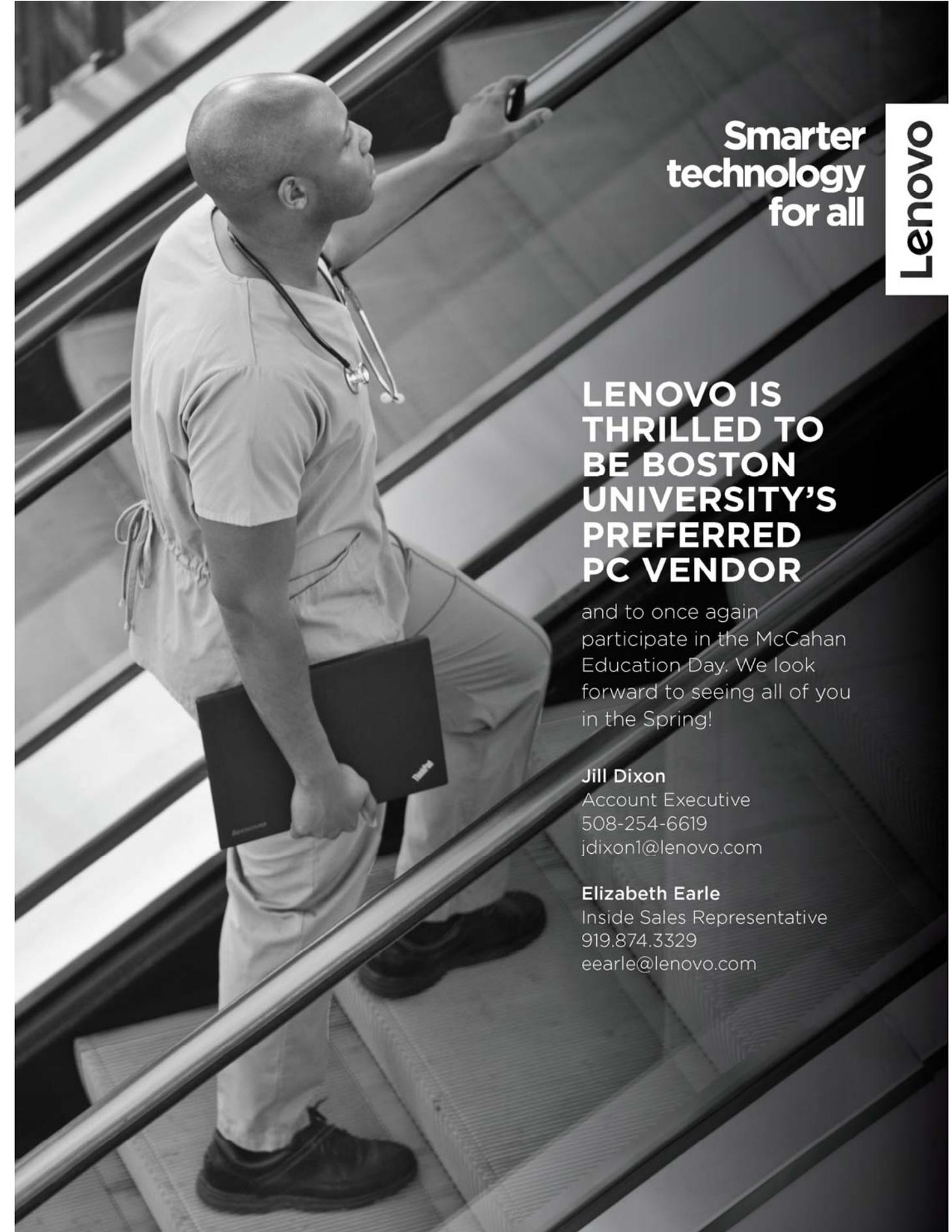
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and to once again participate in the McCahan Education Day. We look forward to seeing all of you in the Spring!

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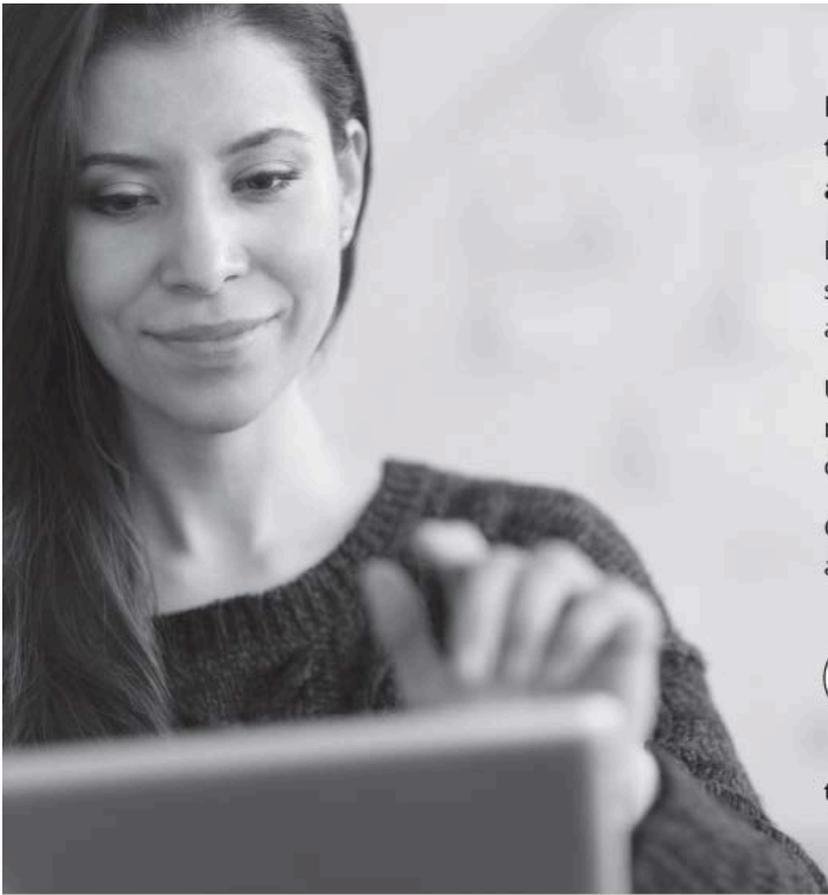
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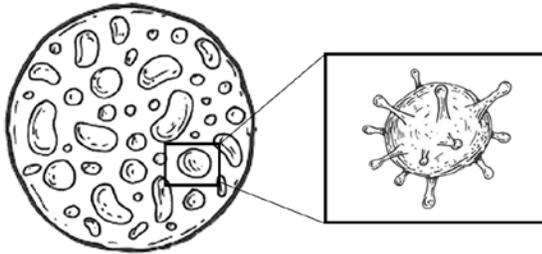


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Thank you for joining us at  
Virtual John McCahan Education Day!

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# Abstracts Room 1: Teaching Tools

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## DEVELOPMENT OF A VIRTUAL CASE SERIES OF ABDOMINAL PAIN ETIOLOGIES FOR SURGERY CLERKSHIP MEDICAL STUDENTS

Melanie L. Fritz, BA,<sup>1</sup> Tejal S. Brahmhatt, MD,<sup>2</sup> Andrew I. Glantz, MD,<sup>2</sup> Erica A. Brotschi, MD,<sup>2</sup>  
Cullen O. Carter, MD<sup>2</sup>

<sup>1</sup>SOM; <sup>2</sup>Department of Surgery, SOM

**Introduction:** In response to the coronavirus pandemic, Boston University School of Medicine adapted the clerkship curriculum for third year medical students to begin with a series of two-week virtual curricula in each of the clerkship specialties, including surgery. One goal of the virtual surgical curriculum was to teach students about a common chief complaint, abdominal pain, so that they could more effectively propose a work-up and management plan during their subsequent in-person clinical rotation.

**Methods:** The authors developed a series of six cases, covering the topics of appendicitis, biliary disease, diverticulitis, small bowel obstruction, acute mesenteric ischemia, and blunt abdominal trauma. Each case consisted of a PowerPoint presentation and discussion guide for facilitators. Cases were delivered over the two-week virtual clerkship, in groups of approximately 15 students and one faculty facilitator. Students completed a pre-test and post-test to evaluate confidence in 3 major domains: creating a differential diagnosis, ordering and interpreting imaging, and proposing an initial management plan for various etiologies of abdominal pain.

**Results:** Students demonstrated significant increases in confidence in each of the domains assessed. On the pre-test (n=86), 41-84% felt “moderately confident”, “very confident” or “extremely confident” with generating a differential diagnosis for various presentations of abdominal pain, which increased to 100% on the post-test (n=67). On the pre-test, 19-22% of students felt “moderately confident” or better with ordering and interpreting imaging, which increased to 94-98% on the post-test. On the pre-test, 18-41% of students felt “moderately confident” or better with proposing an initial management plan, which increased to 98-100% on the post-test.

**Conclusion:** This series of case studies was an effective way of increasing students’ confidence in the domains of generating a differential diagnosis, ordering and interpreting imaging, and initial management of common etiologies of abdominal pain.

# THE “FAVORITE PATIENT” EXERCISE: A NON-CONFRONTATIONAL CURRICULUM TO ADDRESS BIAS IN EMERGENCY MEDICINE CLERKSHIP STUDENTS

Sarah Kleinschmidt, MD, Adam McFarland, MD, Laura Welsh, MD  
*Department of Emergency Medicine, SOM*

**Background:** Provider bias is pervasive and contributes to both healthcare disparities and provider burnout. However, no specific curricula exist for medical students in emergency medicine (EM), missing a critical period of clinical and professional development. In addition, direct training about implicit bias can increase cognitive and affective dissonance, limiting further reflection and growth. Therefore we created a brief, non-confrontational and discussion-based curriculum about bias aimed at EM-bound students.

**Objectives:** Our goal was to increase awareness of and ability to manage bias, while also nurturing ongoing reflection and personal growth in EM-bound medical students. Our objectives were for learners to describe demands on empathy, identify their own capacity for bias, appreciate the impact of provider bias on clinical care and demonstrate strategies for managing bias in clinical practice.

**Methods:** We created an interactive small group session for fourth year EM clerkship students rotating at Boston Medical Center. Our needs assessment included literature review and discussion with residents, recent clerkship students and faculty with expertise in medical education and bias. We used self-reflection and partner discussion as primary instructional modes to explore bias, including novel use of a “favorite patient” writing exercise to elicit learner biases in a private and non-confrontational manner. After a brief lecture, partner and group discussion were used to further explore specific bias management strategies and commit to future practice changes. This curriculum was implemented monthly over four months for a total of 55 students, with iterative changes based on feedback from faculty and students.

**Outcomes:** In follow-up surveys, 87% (35/40) of respondents agreed that the training helped them identify their own biases, recognize when biases are influencing clinical care, manage their biases to provide clinical care and provide compassionate care to a diverse population. Most qualitative comments noted that reflection, discussion and a non-judgmental environment contributed to these outcomes. Multiple students also reported ongoing awareness and discussion of bias during clerkship clinical encounters.

**Conclusion:** Bias is a pervasive problem but one that has also proven difficult to address bias without meeting resistance or shame from learners. Our experience shows that a brief, non-confrontational and discussion-based curriculum may improve both awareness and management of bias among medical students, while also promoting ongoing engagement and growth.

## **FROM ONE CLINICAL ROTATION TO ANOTHER: A PILOT STUDY ON THE USE OF STANDARD PATIENT ENCOUNTERS TO FOSTER TRANSITION IN GENETIC COUNSELING TRAINING**

Kathleen B. Swenson, MS, MPH, CGC and Lillian Torrey Sosa, MS, CGC  
*Master's Program in Genetic Counseling, GMS, SOM*

Current standards in genetic counseling training through accredited programs require students to have exposure to varied clinical experiences. This may require trainees to switch healthcare systems, transition from one clinical supervisor to another and change clinical focus in a short period of time. With transition, student learners are often required to have a certain amount of observation before taking a more active role in sessions. Our goal was to evaluate the impact of standard patient encounters on the number of cases students spend as observation only in their clinical rotations as opposed to taking an active role. Each trainee is required to complete 4, seven week experiences throughout two semesters in the second year of training. Prior to each assigned rotation, students participate in a simulation experience designed to represent the clinical setting of the upcoming rotation. Students receive feedback by trained standard patients, and also receive expert feedback and skills assessment from genetic counseling faculty who observe cases from a viewing station. For students not participating in a clinical setting in an upcoming rotation block, they are required to complete a case of their choice for the sole purpose of skills assessment. Clinical cases, including observation only encounters, are tracked using an online case management system. Upon completion of each student rotation block, data were reviewed specific to the number of reported encounters. In addition, students were asked to complete an anonymous survey on the experience of their simulated case and feedback received. All students reported overwhelming positive experiences. Results further demonstrate a consistent reduction in the number of observation experiences from rotation to rotation across all students. While this may be attributed to clinical development during training, comparison to the prior year shows a greater reduction in the number of observation only cases. This pilot presents a unique approach to set students up for success to take full advantage of the finite number of days they are in respective clinical placements. Further, these simulation experiences provide a manner to facilitate the development of positive student self- efficacy, which supports supervisor entrustment and ultimately opportunity for greater student autonomy in clinical rotations.

## SELECTION AND USE OF EDUCATIONAL RESOURCES BY DENTAL STUDENTS

Breno Reboucas, DDS, DSc,<sup>1</sup> Charilaos Asikis, DDS,<sup>1</sup> M. Marianne Jurasic, DMD,<sup>1,2</sup> Robert McDonough, BS,<sup>2</sup> Neal Patel, BDS, MSc, MOralSurg<sup>3</sup>

<sup>1</sup>*Departments of General Dentistry and* <sup>2</sup>*Health Policy and Health Services Research, GSDM*

<sup>3</sup>*School of Medical Sciences, Division of Dentistry, University of Manchester, Manchester, England*

**Objectives:** In addition to the physical resources that have been specifically developed for and recommended by their faculty, a wide range of online or other learning/information resources are available to dental students to meet their learning objectives. The aim of this study was to determine what learning resources students used the most often and their assessment of usefulness, quality, and reason of choice for the resources.

**Methods:** IRB Approval: H-37845. Dental students (3rd year students in the 4-year program (DMD) and 1st year students in the 2-year Advanced Standing program (AS)) were asked to complete an anonymous electronic survey. Frequency of use, usefulness, quality and reliability, and reason of choice of each resource were examined. Resources included Scholarly sources (i.e.: textbooks, journals), Non-Scholarly sources (i.e.: Google, social media) and Recommended sources (Faculty and Peer recommendations). Statistical analyses included frequency distributions, median, interquartile range, and Kruskal-Wallis test was used to test differences between groups.

**Results:** 73 questionnaires (39 DMD, 34 AS) were received. The most often used resources by both groups of students were Non-Scholarly resources: Google, Facebook/Social Media and Mobile app. Compared to DMD students, AS students used more than twice the number of Scholarly sources (2.7 to 1.2) and found more Scholarly and Non-Scholarly resources useful. Approximately 40% of DMD students did not find Faculty and Peer Recommendations useful. Regarding quality, AS students found more Scholarly, Non-Scholarly and Recommended resources reliable compared to DMD students. Most common reason of choice of a resource was "Ease of Use".

**Conclusion:** Dental students are using non-scholarly resources more often than other resources for their learning and ease of use is the main factor when choosing a resource.

# THE IMPACT OF PEER MENTORING ON THE PROFESSIONAL DEVELOPMENT OF DENTAL STUDENTS

Zoya Tharani, Misha Zahedi, DDS, Afsheen Lakhani, DMD, CAGS  
*Pre-Doctoral Department of General Dentistry, GSDM*

**Purpose:** examine the impact of peer mentoring on the development of professional and interpersonal skills among third year dental students transitioning from pre-clinic to clinic while identifying specific skills that were being developed and impacted.

**Materials and methods:** The study received IRB approval (H-38418) and was conducted during 2019-2020 in Group9. Each DMD3 mentee was paired with a DMD4 mentor. DMD4 mentors guided mentees on clinic protocols, navigating Salud and building effective communication with patients, staff and faculty. Mentors and mentees assisted each other and provided feedback to further enhance clinical skills. All Group9 students attended monthly meetings and participated in interactive discussions.

Group9 DMD3 students (intervention group) and a few DMD3 students in other Groups who were not part of this program (control group) were invited to complete two anonymous surveys via REDCap, approximately 6 months apart. Participation was voluntary. The survey questions allowed evaluation of specific skill sets in the intervention and control groups. Descriptive statistics (mean±SD or frequency (%)) were tabulated and Fisher's Exact Test was used for statistical significance.

**Results:** The following trends were observed: more females participated in completing the survey than males; the intervention group was more competent in the following compared to the control group: navigating Salud; more advanced skills in operative dentistry; and all members of the intervention group stated they had very good relationships with peers. Furthermore, 100% of Group9 said they would participate in peer mentoring initiatives.

**Conclusions:** This program illuminated the positive impact on the development of skills in areas such as software, clinical and interpersonal relationships. The data will be used to develop a more structured Peer Mentoring program where students are formally monitored to determine the extent of the program's benefits.

# Abstracts Room 2: Faculty Development and Social Research

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## PERCEIVED VALUE OF PEER MENTORSHIP

Katelyn Pan, BA,<sup>1</sup> Robert McDonough, BS,<sup>2</sup> M. Marianne Jurasic, DMD, MPH<sup>1</sup>

<sup>1</sup>Departments of General Dentistry and <sup>2</sup>Health Policy and Health Services Research, GSDM

**Objectives:** This study sought to assess the perceived value of ADEA-hosted help sessions in increasing student preparedness for pre-clinical summative exams during the first year of dental school.

**Methods:** Boston University's ADEA chapter hosted a two-hour help session in which upperclassmen provided direction throughout the session. The students prepared and restored teeth following guidelines for a particular restorative material. Anonymous pre- and post-session surveys gauging demographics, comfort with a variety of procedures, and agreement with proposed statements were administered electronically. Post-session surveys were sent after completion of all summative exams; all students in the first year DMD class were invited to participate in both surveys. Similar questions provided in the pre-session survey were included in the post-session survey to analyze any changes in student perceptions and comfort. Students who attended the session as well as those who did not were invited to complete the post-session survey, allowing the investigators to further assess the benefits of the session. This study received Institutional Review Board approval (H-38668) by Boston University.

**Results:** A total of 117 students were invited to participate in both the pre- and post-session surveys. 29 students (mean age of  $24.0 \pm 1.8$ ; 54.2% female) completed the pre-session survey, while 24 students (mean age of  $24.0 \pm 1.3$ ; 65.5% female) completed the post-session survey. Notably, there was an increase in comfort with procedures covered in the ADEA-led help session between pre- and post-session analyses. Overall, students felt more comfortable asking questions to students rather than faculty, found that upperclassmen performed well as mentors, and found them qualified to provide feedback.

**Conclusion:** The results of this study demonstrate that students found the help session to be a productive supplemental learning aid. Additional help sessions covering more procedures may be beneficial in the formative period of pre-clinical learning.

# IMPACT OF COMFORTABLE IN OUR SKIN GROUP WORKSHOPS ON MEDIA AWARENESS AND SELF-CONFIDENCE IN ADOLESCENTS, A POPULATION AT RISK FOR BODY DYSMORPHIC DISORDER

Hannah E. Mumber, BS, Alexis Navarro, Sarem Rashid, BS, Eric Oh, BS, Muhammad Nasir, Charlotte Gray, MPH, Margaret Lee, MD, PhD  
*Department of Dermatology, SOM*

**Background:** Comfortable in Our Skin (CIOS) is a non-profit organization created to aid young people in achieving their full potential through peer support groups that celebrate individuality. One of the means of accomplishing this goal is through workshops. This study evaluates the efficacy of the CIOS workshop “Instagram-Glam: Media Awareness” and how it causes adolescents to reflect upon their social media habits, self-image, and tendencies concerning for Body Dysmorphic Disorder (BDD).

**Methods:** Students from the Boston Area Health Education Center after-school program were recruited to participate in the study. Students completed pre- and post-workshop questionnaires assessing viewpoints on social media. The interactive CIOS workshop consisted of topics including what celebrities really look like, how media affects body image, and constructing a positive body image for all shapes and sizes.

**Results:** BDD tendencies are prevalent among high school students: most students reported spending over an hour daily thinking about something they dislike about their bodies. Social media use was found to be very time consuming: 25/28 students reported spending between 3-10 hours on social media per day, and 11/28 students disagreed that they would be able to cut back on their social media use. Half of students reported editing their photos to hide imperfections or to feel better about themselves. Following the workshop, many more students understood that models and celebrities on social media are often portrayed unrealistically. Most students reported that they learned something valuable and felt more confident as a result of their participation.

**Conclusions:** Social media use is widespread and impacts teenagers’ sense of self and sense of reality. Behaviors concerning for BDD are prevalent among adolescents, likely due to increased emphasis on the perfection of the visual world. Interactive CIOS workshops are an effective intervention to engage students to reflect on social media use and to promote self-confidence among adolescents.

## IMPACT OF SOCIOECONOMIC STATUS ON PATIENTS WITH TYPE 2 DIABETES AT BOSTON MEDICAL CENTER: FIELD-TESTING THE REDD-CAT

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**Background:** Social determinants of health significantly contribute to poor diabetes outcomes and higher costs of diabetes care, primarily due to higher rates of hospital use. Re-Engineered Discharge for Diabetes: Computer Adaptive Test (CAT) is a feasibility study of a point-of-care digital tool under design at Boston Medical Center (BMC) and University of Michigan, which will allow health systems to proactively identify, prioritize and address unmet social needs among hospitalized diabetes patients prior to discharge.

**Methods:** Diabetes patients receiving care at BMC completed a comprehensive survey comprised of Neuro-QoL/PROMIS CAT measures and five novel measures: housing stability, health seeking behavior, illness burden, access to services, medication adherence. Demographics data, HbA1c, and number of hospital visits were collected. Diabetes patients were recruited via outpatient and inpatient EMR query and referrals from mid-August 2019 to mid-January 2019. Two-sample t-tests were used to compare demographic variables and mean T-scores for the CAT measures.

**Results:** Of the 613 diabetes patients screened, 292 were eligible, and 225 enrolled. The mean age was 58 years, 48% of participants identified as male, 62% reported not having enough money to make ends meet, 29% reported having enough money, and 9% reported having more than enough money. Those who reported not having enough money experienced significantly more depression ( $p < 0.001$ ), anxiety ( $< 0.001$ ), pain intensity ( $p = 0.012$ ), pain interference ( $p = 0.006$ ), social isolation ( $p < 0.001$ ), and less emotional support ( $p = 0.003$ ) compared to those with enough money. Males experienced significantly more social isolation compared to females ( $p = 0.033$ ).

**Conclusion:** Social determinants of health are tied to poorer physical and mental health outcomes in patients with diabetes. Development of an effective screening tool for unmet social determinants of health among hospitalized patients with T2DM is critical to allow care managers to address essential social needs prior to hospital discharge, improve health outcomes and reduce readmission risk.

# DIGITAL TECHNOLOGY INTEGRATION AND EVALUATION OF FACULTY TRAINING EFFECTIVENESS

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**Objectives:** The primary objectives of this survey study are: a) to assess the faculty members regarding their opinions about their readiness to use CAD CAM (Computer-Aided Design/Computer-Aided Manufacturing) technology in teaching and delivery of care and b) to determine the effectiveness of the in-house two-day training regimen. In addition, this study aims: c) to determine faculty preference for methods used in training them to use CAD CAM CEREC technology; d) to determine the current state of faculty involvement in CEREC technology at their private practices; e) to evaluate faculty calibration in the use of current rubrics used when students deliver final restorations by having them self-evaluate their own milled crowns and onlays; f) to determine what kind of further training may be required by the faculty and g) to survey faculty preference for different polishing protocols used for porcelain vs polyceramic materials.

**Methods:** After IRB approval (IRB Number: H-39294, Exempt), all faculty who attended the training (56) were invited via email to complete an anonymous electronic survey on day 1, before beginning the training and again at the end of day 2, after training. The surveys were administered using the REDCap platform.

**Results:** A total of 56 faculty participated in the CEREC training. We received 56 responses for each survey (response rate 100%). The two-day training was very effective and positively affected the knowledge and the readiness of the faculty to use CAD CAM technology in teaching and delivery of care.

**Conclusion:** It was highlighted that the faculty calibration plays a key role to the implementation of digital technology in the dental curriculum.

## PEER-TO-PEER (P2P) FACULTY GRANT WRITING GROUP: PILOT OUTCOMES

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**Purpose:** Junior faculty and faculty with English-language difficulties often struggle in writing research proposals, requiring frequent feedback to improve. However, writing is an iterative process, and senior faculty lack time to provide critiques repeatedly. To accelerate the proposal development and writing process of NIH R proposals for these faculty, Peer-to-Peer (P2P) Faculty Grant Writing Group was formed as a new peer mentoring framework to develop scientific narrative and grant writing skills.

**Methods:** Five faculty (1 Research Assistant Professor, 3 Assistant Professors, 1 Associate Professor) with English-language difficulties from various departments (Biochemistry, Pharmacology, Preventive Medicine, Slone Epidemiology, Vascular Biology) met every other week for 2–3 hrs from May 2018–July 2019. Each participant gave a chalk talk/elevator pitch of their research proposal, and peers could interrupt to ask questions, criticize arguments, or suggest a better presentation. A moderator kept discussion on track. At the end of each session, participants left with a refined logic and narrative, which formed a writing outline. At the subsequent session, peers gave feedback on these written sections, contrasting interpretations of the pitch against the written narrative. Finalized drafts were sent to senior faculty with strong track records of NIH funding for review.

**Results:** Participants submitted 9 proposals, with 4 reviewed by senior faculty before submission. Four were funded: R21 (score went from 40 to 27), R01 (64 [50%] to 25 [7%]), R56, and R01 (32 [19%]). Three participants also started three new collaborative projects.

**Conclusions:** P2P provides a successful forum for junior faculty to receive critical feedback during the grant writing process, while still preserving the time of senior faculty. Along with accountability, participants noted P2P as key to their successes in grant writing because their peers' diverse expertise helped refine narratives for a wider audience. P2P is currently running the second and third cohorts.

# Abstracts Room 3: Overall Curriculum

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## ENGxMED: AN INTERDISCIPLINARY LEARNING ENVIRONMENT FOR ENGINEERING AND MEDICAL STUDENTS

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**Objective:** ENGxMED was an interdisciplinary pilot program where medical and engineering students worked together on team-based device design projects in an undergraduate biomedical engineering course. This study aimed to assess the benefits and drawbacks of such a learning model within both populations of students.

**Study Design:** Teams of undergraduate biomedical engineering students enrolled in Spring 2019 BE428 Device Diagnostics and Design were matched with medical student Peer Mentors. Quantitative and qualitative surveys were administered to Peer Mentors and engineering students at the midpoint and endpoint of the semester, and data was stored in RedCap. This database was then queried and the data was statistically analyzed.

**Setting and Participants:** The study was carried out at Boston University College of Engineering with undergraduate biomedical engineering students (n=34) and medical students (n=11) from Boston University School of Medicine.

**Results:** Students reported overall positive experiences to this interdisciplinary teaching model, with the majority of engineering students endorsing that Peer Mentors brought relevant knowledge of anatomy and physiology to their project (70% agree or strongly agree), enhanced their learning (70% agree or strongly agree), and would recommend medical students integrate with more engineering classes (90% agree or strongly agree). The majority of Peer Mentor medical students endorsed that working with engineering students was valuable to their medical education (70% agree or strongly agree), they expect to use information learned during this experience in their careers (70% agree or strongly agree), and they would recommend this experience to a peer (80% agree or strongly agree).

**Conclusions:** Integrating medical students into a team-based engineering design course can benefit all students involved in a way that helps spur interdisciplinary approaches to healthcare engineering solutions.

## STATE OF INNOVATION AND TECHNOLOGY IN UNDERGRADUATE MEDICAL EDUCATION: A MIXED-METHODS REVIEW

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**Objective:** To describe the types of technology & innovation opportunities offered to students by US allopathic medical schools. Greater integration of digital health tools, machine learning, and precision medicine into care delivery may present new challenges and innovation opportunities for future physicians.

**Methods:** A mixed-methods review of all U.S. allopathic medical schools was conducted to identify curricular and extracurricular opportunities for innovation in medical technology. Data collection consisted of a review of publicly available information for each medical school and survey responses from student organizations across the country.

**Results:** Five categories of organized programming were identified and numbers reported: a) special integrative 4-year curriculum (n=4); b) area of concentration or concentration track (n=23); c) preclinical enrichment or elective course (n=6); d) student-run club (n=47); e) facilitated MD/MS dual degree program in related field (n=11). 45.1% (69/153) of accredited U.S. medical schools have one or more categories for medical students to explore medical technology and innovation. Over half of these programs are student-initiated. Of student-initiated programs, 76.9% (20/26) were founded in or after 2016. "Starting & running a business in healthcare" was identified by surveyed clubs as the most popular organizational focus (81.2%, 13/15), followed by "medical devices" (75%, 12/15). 26.7% (4/15) organizations reported high student body engagement, defined by routine attendance greater than 26 students.

**Conclusion:** Existing school-led and student-driven opportunities in medical technology and innovation both indicate a growing interest and reflect educational challenges. Greater visibility of opportunities and collaboration between schools can be considered to better educate and prepare students for the changing landscape of medical practice.

# BENCHMARK PERFORMANCE OF EMERGENCY MEDICINE RESIDENTS IN PEDIATRIC RESUSCITATION: ARE WE OPTIMIZING PEDIATRIC EDUCATION FOR EMERGENCY MEDICINE TRAINEES?

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**Background:** The majority of children in the United States (US) seek emergency care at community-based general emergency departments (GED); however, the quality of GED pediatric emergency care varies widely. This may be explained by a number of factors, including residency training environments and post-graduate knowledge decay. Emergency medicine (EM) residents train in academic pediatric emergency departments (PEDs), but didactic and clinical experience vary widely between programs, and little is known about the pediatric skills of these EM residents. This study aimed to assess the performance of senior EM residents in treating simulated pediatric patients at the end of their training.

**Methods:** This was a prospective, cross-sectional, simulation-based cohort study assessing the simulated performance of senior EM resident physicians from two Massachusetts programs leading medical teams caring for three critically ill patients. Sessions were video recorded and scored separately by three reviewers using a previously published simulation assessment tool. Self-efficacy surveys were completed prior to each session. The primary outcome was a median total performance score (TPS), calculated by the mean of individualized domain scores (IDS) for each case. Each IDS was calculated as a percentage of items performed on a checklist-based instrument.

**Results:** A total of 18 EM resident physicians participated (PGY3 = 8, PGY4 = 10). Median TPS for the cohort was 61% (IQR 56-70). Median IDSs by case were: Sepsis 67% (IQR 50-67), Seizure 67% (IQR 50-83) and Cardiac Arrest 67% (IQR 43-70). The overall cohort self-efficacy for pediatric emergency medicine (PEM) was 64% (IQR 60-70).

**Conclusions:** This study has begun the process of benchmarking clinical performance of graduating EM resident physicians. Overall, the EM resident cohort in this study performed similar to prior GED teams. Self-efficacy related to PEM correlated well with performance, with the exception of knowledge relative to IV fluid and vasopressor administration in pediatric septic shock. A significant area of discrepancy, and missed checklist items, were those related to CPR and BLS maneuvers.

# TEACHING THE NEXT GENERATION OF HEALTHCARE PROVIDERS: THE IMPACT OF A LONGITUDINAL INTERPROFESSIONAL EXPERIENCE IN THE CLINICAL LEARNING ENVIRONMENT

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**Background:** Boston University Community Health Alliance of Medical Professionals (BU CHAMPs) was created through HRSA funding to provide interprofessional education (IPE) opportunities for BU students and faculty while partnering with community health centers to work towards reducing health disparities for populations experiencing chronic social stressors and complex medical conditions. BU CHAMPs promotes collaborative healthcare practices amongst a new generation of medical, nutrition, and social work providers through case-based and experiential clinical care. The aim of this study was to assess the impact of an IPE intervention on improving self-reported clinical skills and interprofessional competencies of trainees, specifically first year medical and physician assistant students.

**Methods:** The pilot was a one semester IPE experience and included 11 participants. Program years 2 and 3 were a 2 semester experience with a total of 37 participants representing 4 disciplines: medicine, physician assistant, social work and nutrition. BU CHAMPs team members participated in a weekly 4-hour session that included case-based didactics linked to IPE Collaborative competencies (IPEC, 2016) and patient visits. Learning methods integrated role plays, standardized patients, and peer and preceptor modeling to enhance trainee educational experience. Team members collaborated in huddling and reviewing the patient chart, gathering the patient story and providing education and anticipatory guidance. Following each visit, team members developed a collaborative care plan alongside preceptor support across disciplines. Each session ended with teams debriefing. Students completed five surveys in REDCap, two were not validated as developed by the multidisciplinary research team to study learner interprofessional knowledge, attitudes, skills and collaboration. Results from the latter two survey instruments: *Review of Interprofessional Competencies (RIPC)* and *Skills Assessment Tool (SAT)*, are presented here.

**Results:** The SAT (8-item survey) shows an overall increase in skills gained for first-year medical and physician assistant students with a statistically significant increase noted for both disciplines in Item 5: students' ability to incorporate nutrition assessments in patients visits (Fisher's exact test  $p < 0.01$ ). In comparison to medical students, most PA students' did not report improvement in skills related to providing leadership (14% vs. 43%), describing roles and skills of team members (29% vs. 71%) and reacting to overall needs (14% vs. 57%) post participation in the program. This could be because PA students were more adept at these skills at baseline given they are further along in their training prior to starting BU CHAMPs. The RIPC (31-item survey) indicated statistical significance in the following competencies for all four disciplines: Teams & Teamwork ( $p < 0.01$ ), Values & Ethics ( $p < 0.05$ ), and Overall RIPC score ( $p < 0.05$ ). However, given the small sample size of first year medical and PA students, discipline-specific statistical significance could not be tested for.

**Conclusion:** These preliminary results indicate the positive impact of IPE and skills gained for first year medical and PA students. Across disciplines, data affirms a positive change in trainees' level of proficiency amongst the four domains.

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## A GUIDE TO IMPLEMENT DIGITAL TECHNOLOGY IN US DENTAL SCHOOLS

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**Background:** Advancements in digital technology are transforming the dental landscape. The use of emerging dental technologies in private practice to provide state of the art, quality dental care along with a demand for these services from more informed consumers is currently driving dental institutions to include various forms of these technologies in their curriculum. Dental schools utilize digital dentistry for teaching didactic, preclinical and/or clinical skills based on general guidelines set by the Commission on Dental Accreditation. These guidelines recommend the “application of technology in dental education programs to improve patient care and to revolutionize all aspects of the curriculum, from didactic courses to clinical instruction”.

**Objectives:** The aim of this study is to create an applicable resource guide for dental schools that will lead to a pathway of success in implementing digital technology in pre-doctoral curriculum in US dental schools. This guide will benefit in integrating technological advances into evolving education standards. Determine the key components for implementation of digital dentistry. Understand the crucial role of Calibration and IT with the continuously revolutionizing world of digital dentistry. Analyze digital dentistry procedures and equipment available that may be implemented based on the needs of dental schools. Assess the approximate costs of CAD/CAM equipment needed for implementation.

**Methods:** This project includes the review of literature and published research articles available on Digital Dentistry. We evaluated the core data available regarding the key components in American College of Prosthodontists such as curriculum, cost, calibration, etc. determining the success of implementation of different applications of digital dentistry in schools. As digital technology encompasses a wide variety of applications, we narrowed down to CAD/CAM components for this project.

**Results:** Based on our articles review, we recommend the following guidelines:

- Key components necessary for implementation of CAD/CAM are cost, calibration and IT support
- Knowledge of when to integrate Digital Technology in the Curriculum: pre-clinical didactic, pre-clinical labs, clinical didactic and clinical patient
- Options available for implementation such as: Dentsply, Planmeca and 3Shape

**Conclusion:** Incorporating these technologies in dental institutions can be challenging because of costs, variety of applications, and diversity of dental materials, faculty calibration, need for IT/updates and more. However it is necessary and should be done to fulfil CODA requirements and for the students professional growth, dental profession growth as a whole. Universities and schools can use this model as a baseline and adapt based on their needs/see fit according their institutional needs.

## Abstracts Room 4: Course Curriculum 1

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### EFFECT OF SPLIT-DAY CLINIC SESSIONS ON FM RESIDENT BURNOUT, EXTRANEIOUS COGNITIVE LOAD, AND CLINICAL LEARNING SATISFACTION

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**Purpose/Background:** In residency training extraneous cognitive load (ECL) has been identified as a potential contributor to fatigue and burnout. ECL is the cognitive load from the delivery of, or design in which learning experiences are encountered by learners. This study aimed to assess resident report of the effects of split-day resident schedules (AM inpatient rotation, PM continuity clinic) on ECL, burnout, satisfaction with academics and clinical performance.

**Methods:** We administered an online cross-sectional survey to FM Residents in an opposed 3-year Family Medicine program, in an urban underserved setting with offsite continuity clinics. The survey included closed- and open-ended, and likert-type scale responses regarding opinions on burnout, clinical duty completion, participation in didactics/education activities, and opinions on split-day and other clinic scheduling schemes.

**Results:** 33 residents responded (82.5% response rate, 12 PGY-1, 11 PGY-2, 10 PGY-3). Among residents, 47% reported split-day clinic schedules had a significant impact on burnout (vs. 34% neither significant nor insignificant, and 19% insignificant). 95% of residents reported having ever missed noon conferences due split-day clinic sessions, and 89% of these respondents reported missing noon conferences at least half of these days. 69% reported inability to complete of clinical responsibilities to their satisfaction due to split-day clinic sessions, and 65% of respondents reported this occurring on at least half of these days. 90% reported missing learning opportunities due to split-day clinic sessions, with 65% of these residents stating it occurred at least half of these days. 53% were interested in alternative scheduling paradigms for residency, with 37.5% of unsure, and 9% not interested.

**Conclusions:** Our residents report split-day clinic session scheduling for rotations contributes to burnout, ECL, is a barrier to learning, and can affect completion of clinical duties. Further research is currently ongoing to determine if other models of clinic scheduling could mitigate burnout and improve resident participation in didactic and clinical learning opportunities.

## PRE-DOCTORAL CLINICAL GERIATRIC ROTATION'S IMPACT ON KNOWLEDGE AND ATTITUDES

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**Background:** Traditionally, the Geriatric Dental Medicine (GDM) course at Boston University Henry M. Goldman School of Dental Medicine (GSDM) consisted of a series of didactic lectures with only an elective clinical component. In 2018, a mandatory one-day clinical rotation was added to provide GSDM students with exposure to geriatric patients in a clinical setting, interdisciplinary care, and alternative dental delivery systems.

**Objective:** This study aims to evaluate the impact of the Geriatric clinical rotation on the knowledge and attitudes of traditional four-year DMD and two-year international DMD-Advanced Standing students in treating older adults.

**Methods:** A 10-question survey with items assessing knowledge and attitudes from validated survey instruments was administered to the DMD and DMD-AS class of 2020 (n=187) prior to the start of the GDM course. The initial survey respondents constituted 86% (n=161) of students. Upon completion of the rotation, 46% (n=86) of students completed an identical post-survey. Composite knowledge and attitude scores were calculated and the association between pre- and post-test scores were evaluated. Changes in individual levels of knowledge and attitudes (level of agreement) were assessed using McNemar's test.

**Results:** Statistically significant increases in knowledge were found in both DMD and DMD-AS groups after completion of the clinical rotation ( $p_{\text{DMD}} = <0.0001$ ,  $p_{\text{DMD-AS}} = 0.0013$ ). An increase in positive attitudes was observed in both groups; however, results did not reach statistical significance. The matched change in individual level of agreement on the pre-post attitude scores was statistically significant ( $p < 0.0001$ , 95%CI: 2.64-4.83).

**Conclusions:** A Geriatric clinical rotation led to an increase in knowledge and positive attitude among dental students in providing dental treatment to older adults. Further studies are needed to assess if clinical experiences in geriatrics have a significant impact on dental students' attitudes and willingness to treat older adults in their future practice.

# A NEEDS ASSESSMENT OF A MEDICAL STUDENT CURRICULUM ON LIFESTYLE MEDICINE AND MOTIVATIONAL INTERVIEWING

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**Background:** Unhealthy lifestyle behaviors are leading contributors to mortality in the U.S. and globally (1, 2). Physician-led conversations can result in patient lifestyle change (3). Yet, physicians do not adequately address these topics, citing insufficient skill and confidence as barriers (4, 5). Undergraduate medical education is an ideal time to teach needed communication skills (6, 7). Motivational interviewing (MI) is a patient-centered framework for behavioral counseling that has been adapted successfully to healthcare settings (8).

**Objective:** We seek to establish baseline data on medical student attitudes and skills regarding engagement in behavior change conversations. The data will guide development of a new motivational interviewing curriculum.

**Methods:** We designed an anonymous 24-item survey. It consists of: 5 attitudinal, 3 experience, 1 satisfaction, 11 competence, and 3 knowledge questions, with 1 optional comment box.

**Results:** 159 second year medical students completed the survey. 89.3% “strongly” agreed that physicians have a responsibility to promote prevention of disease, while 13.8% “somewhat” or “strongly” agreed that having conversations about healthy lifestyles is the role of other health professionals, and not the doctor. Though students had received one introductory lecture on MI, 14.5% did not recall prior MI training, and 1.9% were “extremely satisfied” with their MI training to date. Students’ competence ratings were as follows, with “1” indicating feeling comfortable observing only and “5” indicating being able to teach the activity: using open-ended questions (mean 2.99), asking permission before giving information (2.99), eliciting patients’ motivations (2.80) and ideas (2.70) for change, initiating behavior change conversations (2.67), developing discrepancy between patients’ values and current behaviors (2.40), guiding patients to design change plans (2.09), and using Readiness (1.86) or Confidence Rulers (1.84). 58.9% of students correctly provided an MI-adherent reflective statement. 82% of students correctly recognized MI-adherent responses from multiple choice.

**Conclusions:** Though 9 in 10 students strongly agreed that it is a physician duty to prevent disease, fewer felt that lifestyle behavior conversations were the role of the doctor. A single required MI lecture was not remembered by all students and did not result in curriculum satisfaction. On average, students’ perceived competence in MI skills limited their use to scenarios that are either simple or that offer direct supervision. Our findings support the need for increased curricular focus on MI. We will fill identified gaps through recurrent, practice-based sessions, and we will track outcomes data. To address the existing burden of chronic disease, it is imperative to increase future providers’ self-efficacy in facilitating lifestyle behavior conversations.

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## TWO-STAGE EXAM: A FORMATIVE ASSESSMENT FOR INDIVIDUAL AND GROUP PERFORMANCE AND GROWTH

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Collaborative Testing<sup>1-3</sup> is an emerging assessment paradigm that lacks consensus on a method to distinguish individual from group performance. We tested multiple evaluation methods for individual and group performance in a graduate-level medical sciences course using a Two-Stage exam paradigm for midterm (T1) and final (T2) assessments.

Students in experimental (N = 166) and control (N = 189) cohorts were randomly assigned small groups at the beginning of the course with didactic and group lab sessions. Students were given individual multiple-choice exams at T1 and T2. The experimental cohort was then given a small group exam with a sample of questions from the individual exam. Next, all students self-evaluated their performance compared to their groupmates (Q1) and level of group participation (Q2). Finally, six Teaching Assistants (TA) each evaluated 1/3 of the groups for groupwork skills<sup>1</sup>.

Mean individual exam scores were higher for the control (T1 = 37.22, T2 = 36.99) than experimental (T1 = 33.57, T2 = 31.36) cohort, yet comparable to group means ( $p < 0.01$ , for all measures). All experimental individual and group mean exam scores were positively correlated with small group exam and final course grades. Question for question, students scored higher on the small group [T1 = (+0.05, +0.29), T2 = (+0.06, +0.37)] than individual exam and conferred equal benefit to higher- and lower-performing students. Across cohorts, students' self-evaluated relative performance (Q1) was negatively correlated with all individual scores; thus, students tended to correctly predict outperforming or underperforming their group. Students' perceived level of group participation (Q2) was not correlated with any measure. TA's predicted individual performance at T1, but individual and group performance at T2.

Our results indicate that individual knowledge and collaboration is predictive of and enhances group knowledge and performance. Future studies may to control for group composition to refine these trends.

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# NEAR-PEER PROBLEM SOLVING SESSIONS: A SUPPLEMENTAL CARDIOVASCULAR, RESPIRATORY, AND RENAL FIRST YEAR MEDICAL PHYSIOLOGY CURRICULUM

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**Background:** Preclinical physiology courses are an essential part of physician training, but often provoke anxiety among medical students. Problem-based learning gives students an opportunity to practice applying their understanding of physiological systems. Near-peer teaching has been demonstrated as an effective learning tool in medical education, and is already a key element of the BUSM pre-clinical anatomy and Doctoring courses. We applied these methods to preclinical physiology teaching.

**Methods:** We created a problem-based review curriculum, taught by second-year students, that reinforced key physiology concepts with clinical correlates in the second-year curriculum. The sessions were developed in collaboration with the physiology faculty, and ran parallel to the cardiovascular, respiratory, and renal modules of the first-year foundation science curriculum (Principles Integrating Science and Medicine, PrISM).

First year students enrolled in the modules were invited to optional review sessions. A total of eight weekly sessions were held. Each session included a brief review of content from the preceding week (20-45 min), followed by small group problem solving with near-peer teacher guidance (60-90 min small group work, 45 min whole group review). Participating students were asked to complete a 5-question anonymous feedback survey after each weekly session. The program continued with new second-year teachers in the 2019-20 academic year.

**Results:** Approximately 40 students (of approximately 160 students enrolled in PrISM physiology) attended at least one review, and approximately 30 attended two or more. Students found the sessions valuable, reported that the teaching was good, and believed that the sessions should continue throughout the physiology curriculum and in the next academic year. (Note: due to COVID-19, we have limited access to our data and are unable to report exact values for this abstract.)

**Conclusion:** Implementing near-peer physiology teaching was feasible, and the sessions were well-liked and considered effective by participating first year preclinical medical students.

## Abstracts Room 5: Course Curriculum 2

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### DEVELOPMENT AND IMPLEMENTATION OF A MEDICAL HAITIAN CREOLE CURRICULUM FOR BOSTON MEDICAL CENTER

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Medical care for English-limited patients in the United States is complicated by a range of communicative and cultural difficulties that have the potential to adversely impact outcomes. These issues may be particularly heightened in the treatment of patients whose native language is rarely-taught in American schools or whose cultural background is unfamiliar to provider, yet models for niche language education among health care professionals and students are lacking nationwide.

Herein, we present a novel Haitian Creole course for students and staff of Boston Medical Center (BMC). Our approach centers around a web-based series of weekly lessons on essential grammar and clinical vocabulary in Haitian Creole that complement in-person classroom sessions taught by a native resident physician. Each week's class is approximately 1.5 hours in length and focuses on a distinct clinical skillset or body system. Electronic vocabulary cards are provided prior to each lesson for convenient independent study and each session closes with a short presentation by a health care professional with experience related to the care of Haitian patients. All materials and recordings of invited speakers are organized on a central website accessible by simple URL ([www.bumedkreyol.com](http://www.bumedkreyol.com)). Early class sessions held in March 2020 demonstrated successful implementation of preliminary lesson plans, and were attended by 22 individuals, ranging from first year medical students (M1s) to attending physicians. A linguistic and cultural survey completed by 16 attendees prior to the first session demonstrated sparse baseline knowledge of Haitian language and culture, while most students indicated a desire to improve rapport with Haitian-speaking patients at BMC as their primary motivation for taking the course.

In the future, these materials will provide the blueprint for an annual educational experience with the potential to improve the administration of culturally-sensitive care for a significant patient demographic at Boston Medical Center.

## EVALUATING BASELINE DATA TO TAILOR COMMUNITY-BASED EDUCATION PROGRAMS

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**Objectives:** Access to oral health interventions are often limited in developing countries. To devise effective programs, it is essential to evaluate baseline parent oral health knowledge and beliefs and tailor interventions based on the results.

**Methods:** A 17-question anonymous survey of parent oral health knowledge, attitudes and behaviors was administered to two convenience samples: parents of children attending oral health education sessions at government sponsored preschools in Estelí, Nicaragua and at a free clinic in Eleuthera, Bahamas. Data was entered into Access and analysis was done with Excel and SPSS.

**Results:** 130 questionnaires were completed. 75% of the sample was from Esteli, 67% were female, and 50% were between the ages of 21 and 30. 42% of parents in Esteli reported their children having pain in the past year compared with 55% of parents in Eleuthera. There were no statistically significant differences in knowledge in many areas; a greater percentage of parents in Eleuthera knew cavities were caused by bacteria compared to Estelí (97% vs 85%). However, parents in Esteli were significantly more likely to know fluoride's positive impact on caries prevention ( $p=.0007$ ). For parental oral health attitudes, Esteli parents were more likely to feel it was important to fix primary teeth ( $P<0.00001$ ) and parents in Eleuthera were more likely to feel that the majority of children will get cavities ( $p=.03$ ).

**Conclusions:** Despite many similarities in oral health attitude, knowledge, and beliefs between the two samples, significant differences were found. For example, the fact that many parents in Eleuthera did not believe in treating cavities in primary teeth highlights the need to further explore and understand the reasons for this belief and develop a tailored educational programs. Without this targeted intervention, our plans for developing clinical care for children in Eleuthera will likely be unsuccessful.

## DO NO HARM: HARM REDUCTION CURRICULUM FOR PRE-CLINICAL STUDENTS

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**Introduction:** In light of the growing opioid epidemic, there is a pressing need for healthcare providers to have training on the diagnosis and treatment of substance use disorder spanning the entire spectrum of addiction. It is critical that this education begins early in medical training to destigmatize and normalize addiction medicine. Despite recent advancements in substance use education, there is a lack of hands-on, standardized curricula on the harm reduction of injection drug use in the preclinical years.

**Methods:** To fill this gap, we developed a multi-disciplinary, student-facilitated harm reduction workshop open to training graduate medical, dental, physician's assistant, and public health students with three main educational objectives. (1) Connect medical professionals with community partners, (2) Explore the ideology of harm reduction in an interactive discussion led by a second-year addiction medicine and infectious disease fellow, and (3) overview overdose education and naloxone training in a simulation-based didactic. All attendees were asked to take a voluntary pre- and post-training survey to evaluate workshop effectivity.

**Results:** A total of 41 students from a variety of graduate schools participated in this workshop. We were able to successfully link the pre- and postdata of 29 participants. Students were assessed on comfort in explaining harm reduction to a patient or peer, knowing materials needed to inject drugs and practices to minimize harm, and administering naloxone as a first responder (via a 5-point Likert scale). We saw statistically significant increases in all aforementioned categories.

**Discussion:** We found that our training filled a curricular gap by significantly improving students' knowledge of and comfort in communicating harm reduction techniques and understanding the practices of injection drug use. The workshop can effectively train future health care professionals to better communicate with and treat patients with active substance use disorder.

## HOW DO WE TREAT DENTAL PATIENTS UNDER INFLUENCE OF MARIJUANA?

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**Introduction:** Marijuana is the third most widely used illicit substance in the United States. In the past 20 years, its use has increased 30-fold; it is estimated that 22.2 million Americans of age 12 years and older report current marijuana use.<sup>1</sup> According to US Surgeon General Report, marijuana use is a growing public health issue. There are 33 states that have legalized medical marijuana, and of those 11 states have further legalized recreational consumption of the drug since July 24, 2019. Per the recent survey, Massachusetts reported that 45% of adults between the age of 18-25 years used marijuana along with 22% increase in marijuana consumption in 2017 after legalization.<sup>2</sup> Due to the drastic upswing in availability and usage of marijuana, dentists need to discuss possible effects of marijuana use on dental practices. Previous studies have concluded that it is important for dental care providers to make clinical decisions based on scientific evidence regarding the pharmacologic and psychological effects of marijuana. Concerns have also been raised about marijuana use by patients seeking dental treatment since little is known about dentists' practices and attitudes when it comes to substance misuse screening in the dental setting.<sup>3</sup> This report explores the latest trends in the use of marijuana and reviews oral health implications and guidelines for treating dental patients under the influence. Since patient on marijuana use are high and impaired to provide informed consent, these patients are most often noncompliant, long term treatment prognosis are questionable. Such patients also often seek cosmetic dental treatment, such as veneers and whitening, due to these unaesthetic dental complications; this represents another opportunity for the dentist to discuss suspected substance misuse, provide appropriate referrals for treatment, and encourage cessation of use as part of the treatment process prior to initiating any cosmetic treatments that may otherwise fail.<sup>4</sup>

**Findings:** Using rapid evidence review, a literature search of 5 electronic databases were done, yielding numerous publications over the last 15 years. Articles were screened using pre-established inclusion criteria: articles were based on primary and secondary data; marijuana smoking was an exposure; at least 1 cannabis-related oral health outcome was reported. The main psychoactive chemical in marijuana responsible for most of the intoxicating effects that people seek is delta-9-tetrahydrocannabinol (THC) and other active compounds like cannabidiol (CBD) which is not mind altering. Marijuana is delivered in form of inhalation, ingestion, oral and topical. A common method of using marijuana is through smoking as a cigarette, bong, blunt or bubblers. Now a days relatively new method of consuming marijuana is by vaporization called vaping. Vaping weed exposes the user to toxic compounds and usually comes in small sizes easy to conceal. Since there is no safety dosage available, heavy and frequent use of Marijuana, especially THC, leads to the cannabis induced psychosis.<sup>5</sup> Evidence suggests that marijuana use can lead to several adverse oral health problems. Patients who use marijuana have poor oral hygiene, significantly higher incidence of smooth surface caries. The presence of smooth surface caries is concerning since it is typically easy to clean and maintain with regular oral hygiene measures.<sup>6</sup> Also, xerostomia is a strong risk factor for dental caries. Of most concern to dental providers is the development of xerostomia that often causes dramatic increased rate of caries. Additionally, marijuana smoking leads to the gingival inflammation, gingival hyperplasia, development of deeper periodontal pockets, clinical attachment loss, alveolar bone loss and a higher risk of developing severe periodontitis. Marijuana smoking also causes the rise in the temperature of oral cavity which leads to mucosal irritation, edema and erythema of the oral tissues such as leukoplakia and erythroplakia may lead to the development

of oral cancers. Also, marijuana interacts with the epinephrine present in the local anesthetic leading tachycardia and hypertension.<sup>7</sup>

**Conclusion:** This presentation provides a roadmap for pre-doctoral dental students throughout their professional years to practice dentistry since little is known about the implementation of substance misuse education in dental schools in pre-doctoral curriculum. Clinical guidelines may need to be developed to help dental providers assess the patient's degree of cognitive impairment. This will help in improving their knowledge and perception on case selection for an extensive treatment modality. The three screening tools available are Screening Brief Intervention and Referral to Treatment (SBIRT), Cannabis Use Disorder Identification Test (CUDIT) and Revised (CUDIT-R) model.<sup>7</sup> It is very important to utilize these screening tools to screen dental patients for marijuana use in dental school.<sup>8</sup> This should be incorporated in the dental patient health history forms and addressed by dental students.

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## **SAVING SENIOR SMILES: A COMMUNITY OUTREACH EDUCATIONAL PROGRAM AND A PILOT RESEARCH PROJECT**

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**Objectives:** To construct an oral health outreach program for community dwelling older adults frequenting senior centers in the greater Boston area (Massachusetts, USA).

**Background/Description:** The Saving Senior Smiles (3S) pilot outreach program was launched as an oral health education and awareness program for community-dwelling older adults across senior centers in the greater Boston area with funding from a Massachusetts Dental Society Foundation Grant. At present, the outreach has been conducted at seven senior centers (Burlington, Fenway, Stoneham, Newton, Auburndale, Brookline and South Boston). The 3S team consisted of mentors from the Massachusetts Dental Society (MDS), and pre-doctoral and postdoctoral students from three Boston based dental schools. The outreach consisted of oral health educational seminars for community dwelling older adults. They were presented by female pre-doctoral and post-doctoral dental students belonging to the American Association of Women Dentists (AAWD) chapters from each of the three schools. The students presented topics including the significance of oral health, oral health as part of overall health, social determinants of health, and the importance of routine visits to the dentist. Pre-test and post-test surveys were administered to assess the participant's perceived oral health status and the change in oral health knowledge. Oral hygiene kits including essential dental supplies were distributed to all participants.

**Lessons Learned:** The project enabled students from different schools to collaborate beyond the boundaries of their institutions. MDS Foundation Ambassadors, faculty from the Boston schools and postdoctoral geriatric residents had a unique opportunity to mentor pre-doctoral students. Students learned the importance of communication skills to engage older adults in a conversation about their oral health and the basics of the research design and protocols. Post-doctoral students had the opportunity to analyze the survey results, strengthening their beliefs in outreach and community based research projects. Community dwelling older adults were in turn introduced to a diverse group of young women dental students thereby recognizing the changing face of our profession. Since 2017, the Saving Senior Smiles project has involved over a dozen students from all three Boston area schools in an effort to reach over a 100 community dwelling older adults (Average age=75 years, Female=88 (83.81%)) across seven senior centers in Massachusetts.

**Recommendation(s):** These findings emphasize the value of simple community-based oral health initiatives for older adults. Continued outreach efforts to bring oral health literacy and knowledge to community dwelling older adults can be facilitated through grant funding from State Dental Societies in conjunction with local dental schools along with District Dental Society's.