

# UCSF Education Showcase 2020

Accepted Abstracts

## Plenary Abstracts

Plenary presentations were organized into three [Medical Education Grand Rounds](#) sessions: May 15 and October 7, 2020 and January 8, 2021.

## Abstract #05

**From grading to assessment for learning: a qualitative study of student perceptions surrounding elimination of core clerkship grades**

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**Area(s) abstract covers:** Health professions student education, Medicine

**Domain(s) addressed:** Assessment and Testing, Clinical Instruction and Performance, Feedback, Motivation

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose** This study explores how students perceive core clerkship learning experiences following elimination of honors grades and enhancement of feedback. **Background** Students perceive honors grading during core clerkships as unfair and inequitable, with negative impact on learning and wellbeing.[1-4] Eliminating honors grading and emphasizing formative feedback may address these problems [5-8] and promote intrinsic motivation and learning. [9-10] **Method** In this qualitative study, UCSF core clerkship students participated in semi-structured interviews in June-August 2019 exploring perceptions of learning and assessment following elimination of honors grading and addition of twice-weekly supervisor feedback. We analyzed data inductively using content analysis with sensitizing concepts related to theories of motivation. **Results** 18 students participated, including 5 with experience in both honors-eligible and pass/fail clerkships. We identified three major themes in student interviews: wellbeing, student engagement in clerkships, and recognition of learning context. Wellbeing improved through decreased stress, sense of authenticity, and ability to prioritize physical health and personal life. Student engagement subthemes included internal motivation for patient care rather than performing; sense of agency over learning; and collaborative relationships with peers and team members. Learning context subthemes included recognition of variability of clerkship contexts, with pass/fail grading mitigating fairness and equity concerns; support of the grading change from residents and some attendings; and implications for residency selection. **Discussion** Students perceive a transition from honors grading to increased feedback as supporting engagement in learning, thereby benefitting their development and patients' care. This study will be submitted for publication in a peer-reviewed journal. **Reflective Critique** Results were presented to participants for member checking and were modified accordingly. We will present this project at ESCape and incorporate feedback.

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## Abstract #06

**Evaluating a Web-based Point-of-care Ultrasound Curriculum for the Diagnosis of Intussusception**

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**Area(s) abstract covers:** Resident/fellow education, Continuing education, Faculty development, Medicine

**Domain(s) addressed:** Assessment and Testing, Clinical Instruction and Performance, Curricular Innovation, Patient Care

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** We describe the evaluation of a web-based curriculum for point-of-care ultrasound for intussusception (POCUS-I). **Background:** Intussusception is a pediatric medical emergency that can be difficult to diagnose. Radiology-performed ultrasound is the diagnostic study of choice but may lead to delays. POCUS-I studies have showed excellent accuracy and reduced lengths of stay, but there are limited POCUS-I training materials. **Methods:** We performed a prospective cohort study evaluating POCUS-I competency for pediatric emergency medicine (PEM) physicians undergoing a POCUS-I curriculum. The curriculum included an interactive online module and hands-on practice and was developed with a pediatric radiologist. POCUS-I comfort was assessed with a self-report survey (Likert scale). Knowledge was assessed with a multiple-choice test. Technical skill was determined by a direct observation checklist. We evaluated participants before and after the course and three months later to assess for retention of knowledge & skill. **Results:** A total of 17 out of 17 eligible PEM physicians at a single institution (100% enrollment) participated in the study. Physicians demonstrated improved comfort with POCUS-I after exposure to the curriculum, with 5.9% reporting somewhat or very confident prior to the course to 76.5% after the course ( $p < 0.001$ ). This finding was maintained at 3 months (76.5%). On the knowledge and image test, there was significant improvement from 57.4% [95%CI (49.8-65.2)] to 75.3% [95%CI (68.1-81.6)] ( $p < 0.001$ ) which was maintained at 3 months at 81.2% [95%CI (74.5 – 86.8)]. For the direct observation test, participants scored well after the course with median score of 20/21 [IQR 20-21] and maintained high scores at 3 months [20 (IQR 20-21)]. **Conclusion:** After a web-based curriculum for POCUS-I, PEM physicians showed improvement in comfort and knowledge, and performed well in technical skill in POCUS-I, and these findings were maintained at three months. **Reflection:** We made changes to design and wording after feedback from ESCape last year and this year.

## Abstract #07

**Impact of an innovative endowed chair program on medical educator recipients**

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**Area(s) abstract covers:** Continuing education, Faculty development, Dentistry, Medicine, Nursing, Pharmacy, Physical Therapy

**Domain(s) addressed:** Evaluation of Programs, Leadership, Longitudinal Educational Activities

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose** To assess the impact of an endowed chair program in education on recipients. **Background** In 2001, UCSF established an endowed chair in education program to support teaching excellence, career development, and professional identity formation. The holder receives discretionary income to pursue value-added education work. Unlike most other endowed chairs, this one targets faculty with careers in medical education. There are few studies that have examined, in depth, the impact of endowed chair programs. **Methods** We conducted a qualitative thematic analysis, interviewing UCSF School of Medicine chair holders. All transcripts were double coded, and codes reconciled. We applied the social cognitive career theory during analysis and identified themes through an iterative consensus-building approach. **Results** Twenty-three of 24 (96%) eligible faculty members from 15 departments participated. Themes included symbolism, education/educator, resources, development and impact. The chair was a symbol that brought recognition, indicated quality, and amplified status. It conferred credibility on recipients and empowered them in the educational domain. Resources provided allowed holders flexibility to undertake activities that were of value to them and the organization. Holding the chair facilitated professional development for self and others. Chair recipients reported impact on their careers and the institution. A model of impact emerged suggesting that simply possessing a chair title led to visibility and “gravitas” which, combined with resources, allowed the holder to leverage educational opportunities. **Discussion** The endowed chair is an important strategy for career development that enhances education for the chair holder and the position of education institutionally. **Reflective Critique** This study adds to the dearth of literature on the impact of endowed chair programs and details a model of impact. Throughout the study process, feedback was obtained through oral presentations at WGEA and AMEE, and an external education faculty reviewer.

## Abstract #12

**The Cognitive Load of Inpatient Consults: Development of the Consult Cognitive Load Instrument and Validity Evidence**

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**Area(s) abstract covers:** Resident/fellow education, Medicine

**Domain(s) addressed:** Assessment and Testing, Clinical Instruction and Performance, Patient Care, Research

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

Background Inpatient consultation is essential for training and patient care. However, our limited understanding of learning during consults fails our inpatient trainees. Cognitive load (CL) describes the mental effort required to complete a complex task such as a consult. When CL can be measured, learning can be optimized. A CL measure is needed to improve consult learning and, consequently, patient care. Methods We developed the Consult Cognitive Load (CCL) instrument using Wilson's item response modeling approach. We developed construct maps representing three CL dimensions. We selected and refined 12 items by reviewing the literature, discussing findings with experts, and conducting cognitive interviews. We included questions about likely CL predictors for use in latent regression analysis. We developed scoring guides to relate responses to construct map levels. After a pilot (N=33), we requested participation from internal medicine subspecialty fellowship and psychiatry program directors at five University of California campuses. Between March and September 2019, we distributed the CCL to all rotating fellows and residents in participating programs. Trainees completed the CCL once within 24 hours of a new consult. For analysis, we used the Rasch Partial Credit Model. Results Of 326 trainees, 142 (44%) responded during busy inpatient rotations. All items had good fit. Wright maps showed appropriate banding of thresholds and increase in mean respondent positions, supporting construct validity. Reliability was 0.8 or higher across all CL dimensions. Latent regression highlighted CL predictors including consult difficulty and prior experience. Discussion We developed and calibrated an instrument to measure trainee CL during inpatient consults and provided validity evidence. The CCL can be used to answer research questions about consult learning, track CL formatively for assessment, and determine appropriate trainee consult volume, which may impact curricula and rotation structure. Reflective Critique We obtained feedback continually from experts in CL and measurement.

## Abstract #14

**“There Is a Lot of Change Afoot”: A Qualitative Study of Faculty Perceptions of the Elimination of Tiered Grades with Increased Emphasis on Feedback in Core Clerkships**

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**Area(s) abstract covers:** Health professions student education, Resident/fellow education, Faculty development, Medicine

**Domain(s) addressed:** Assessment and Testing, Diversity, Equity and Inclusion, Leadership, Research

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** After the elimination of tiered core clerkship honors grades, we sought to understand faculty perception of the new assessment program. **Background:** Due to challenges with fairness, equity, learning, & wellbeing in core clerkships, the UCSF School of Medicine eliminated core clerkship honors grades and added work-based assessments for frequent feedback. This study used the Concerns Based Adoption Model (CBAM) to explore how faculty perceive this change and to capture the process of change by exploring how faculty alter their professional practices and perceive the consequences. **Methods:** This qualitative study used an inductive approach to analyze data from semi-structured interviews with Medicine and Surgery teaching faculty and education leaders who were recruited using purposive sampling. Interview questions addressed participants' perceptions of the new approach to assessment, including advantages and concerns. We analyzed data using thematic analysis informed by sensitizing concepts from the CBAM. **Results:** Eighteen faculty participated (11 Medicine, 7 Surgery). Faculty expressed optimism about the impact of the change on their clinical educator roles and sought faculty development to enhance feedback and assessment skills. They described effects of the change focused on students, themselves, and the larger system. Benefits to students addressed learning and wellness, with concern for students' motivation and professional development. Faculty shared uncertainty about larger systemic consequences involving the residency match and institutional reputation. Participants acknowledged that the traditional grading system is imperfect, yet felt that a departure from this system represents significant culture change. **Discussion:** Faculty perceptions of the grade change in two large departments demonstrate tensions around assessment, with faculty acknowledging their differing opinions based on their role and context. While discourse about assessment and grading frequently focuses the learners, institutions must grapple with the impact of changes in assessment on teaching faculty.

## Abstract #19

**Does Being a Coach Benefit Clinician-Educators? A Mixed Methods Study of Faculty Self-Efficacy, Job Satisfaction, and Burnout**

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**Area(s) abstract covers:** Faculty development,

**Domain(s) addressed:** Evaluation of Programs, Motivation,

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose** To understand the effect of being a coach on clinician-educators. **Background** Coaching is a new role for faculty which has benefits<sup>1</sup>; however, outcomes of coaching programs fail to distinguish between coaching and other clinician-educator roles<sup>2</sup>. Self-efficacy is a known powerful motivator that is associated with job satisfaction and burnout and may explain coach outcomes<sup>3</sup>. **Methods** This explanatory mixed methods study uses a quantitative survey followed by qualitative interviews. Here we report the first phase (quantitative). Coaches (funded 20%), faculty with other funded education positions ("funded faculty"), and faculty without funded education positions ("unfunded faculty") completed a 48-item survey in Fall 2019. Questions measured self-efficacy in teaching<sup>4</sup>, professional development, and scholarship; job satisfaction<sup>5</sup>; and burnout<sup>6</sup>. We calculated construct scores using a five-point Likert scale and analyzed results using analysis of variance followed by post hoc tests and chi-square tests. **Results** 202 of 384 faculty (52.6%) responded; complete surveys (n=186) were analyzed. Teaching self-efficacy was similar across faculty groups. Coaches (n=39) and funded faculty (n=71) had higher professional development self-efficacy than unfunded faculty (n=76) (mean[SD]: 3.63[0.73], 3.77[0.72], 3.29[0.71], p<0.001). Coaches had lower scholarship self-efficacy than funded faculty and were not different from unfunded faculty (3.55[1.0], 4.03[0.82], 3.81[0.95], p=0.028). Coaches and funded faculty reported higher job satisfaction than unfunded faculty (82.1%, 90%, 64.5%, p=0.001). More coaches and unfunded faculty experienced burnout than funded faculty (64.1%, 63.2%, 44.3%, p=0.038). **Discussion** Coaches report high professional development self-efficacy and high job satisfaction, similar to funded educators, and higher than unfunded faculty. Coaches also experience high burnout which requires further exploration. **Reflective Critique** -Presented at Works in Progress sessions and ESCape -Incorporated feedback during survey development from cognitive interviews and pilot testing

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## Abstract #37

**Benefits of routine, opt-out abortion training: 20 years of the UCSF-based, National Ryan Program**

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**Area(s) abstract covers:** Health professions student education, Resident/fellow education

**Domain(s) addressed:** Clinical Instruction and Performance, Evaluation of Programs, Longitudinal Educational Activities, Patient Care

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** To describe effects of routine, opt-out family planning training in ob-gyn residency programs on clinical skills and practice intentions. **Background:** In 1999 the Kenneth J. Ryan Residency Training Program in Abortion and Family Planning (RP) was established at UCSF to support ob-gyn departments to formally integrate abortion and family planning training in accordance with ACGME requirements. As of January, 2020, the RP has supported training in 99 US and Canadian residency programs, which have trained more than 6,000 ob-gyns. Residents are given the option to partially participate, i.e., opting out of portions of the rotation. **Methods:** Data from the first 20 years of Ryan Program evaluation were analyzed. During active funding, post-rotation resident surveys are collected to assess residents' experiences and family planning practice intentions, and residency program directors are surveyed annually about training. **Results:** From 1999-2019, 2,700 residents completed post-rotation surveys (80.1%), and of 86 program directors surveyed, 97% responded. 82% of residents fully participated in the training. All residents, including those who partially participated, gained significant exposure to all methods of first- and second-trimester termination (mean 8.0 medication abortions, 12 manual uterine aspirations, 16 electric uterine aspirations and 6 second-trimester dilation and evacuations). Residents reported feeling competent to do procedures independently up to an average of 18 weeks' gestation. 81% of residents intend to do abortions for pregnancy complications after residency and 62% for all reasons. 99% of directors reported a significant increase of post-rotation clinical competence in residents' abortion skills, and 52% reported improved continuity of care for patients. **Conclusions:** In 20 years the UCSF-based Ryan Program has supported 58% of university-based and 42% of university-affiliated residency programs to ensure graduates can provide comprehensive reproductive health care and accept abortion and contraception as an integral part of women's health.

## Abstract #44

**Exploring pharmacy student readiness for clinical learning experiences from multiple stakeholder perspectives.**

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**Area(s) abstract covers:** Health professions student education, Pharmacy

**Domain(s) addressed:** Clinical Instruction and Performance, Competencies

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** Our study explores pharmacy student readiness for their first advanced clinical clerkship (Advanced Pharmacy Practice Experience, or APPE) from the perspectives of three stakeholders: APPE students, pharmacist preceptors, and faculty who administer the APPEs. **Background:** The Pharmacy Accreditation Council requires assessing student APPE readiness, yet what constitutes “readiness” is unclear. Most descriptions focus on knowledge or skills with variable predictive value for APPE performance. Current research suggests students’ social and emotional experiences during the transition to practice also influence clinical readiness (Yardley, 2018; Dornan, 2019). **Methods:** Using workplace learning as a guiding framework (Billet, 2015), we conducted a collective case study of APPE readiness among UCSF School of Pharmacy students. We invited a purposive sample of students participating in APPEs, preceptors, and faculty directors to participate in focus groups or interviews between March to September 2019. Two investigators analyzed transcripts for themes related to readiness. **Results:** Based on 5 student, 1 faculty, and 4 preceptor focus groups and 2 faculty interviews, we identified themes related to 4 aspects of readiness: learner characteristics, workplace participation, relationship building, and orienting practices/support. All stakeholder groups addressed these aspects, though we noted thematic differences in how APPE readiness was described among groups. For example, preceptors and faculty placed greater importance on tacit knowledge of workplace norms, whereas students focused on explicit knowledge for APPE performance. **Discussion:** APPE readiness is a multidimensional concept. Because tacit knowledge is learned through practice, faculty/preceptor expectations for APPE readiness require recalibration. Additionally, students and preceptors/faculty have a mutual responsibility in supporting APPE readiness. Consistent orienting and support structures may improve students’ social and emotional wellbeing. **Reflective Critique:** Successfully met requirements for the UCSF-UCB MAEd program

1. Yardley S, Westerman M, Bartlett M, Walton JM, Smith J, Peile E. (2018). The do’s, don’t and don’t knows of supporting transition to more independent practice. *Perspect Med Educ*. 7:8-22. doi:10.1007/s40037-018-0403-3
2. Dornan T, Conn R, Monaghan H, Kearney G, Gillespie H, Bennett D. (2019). Experience Based Learning (ExBL): Clinical teaching for the twenty-first century. *Med Teach*. 41(10): 1098-1105.
3. Billet S. Readiness and learning in health care education. (2015). *Clin Teach*.12:367-372.

## Abstract #61

**Addressing a critical physician manpower shortage: the UCSF San Joaquin Valley (SJV) Program in Medical Education (PRIME)**

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**Area(s) abstract covers:** Medicine

**Domain(s) addressed:** Admission and Recruitment, Curricular Innovation, Longitudinal Educational Activities

**Category:** Curriculum Development

**Abstract:**

**Purpose** We developed SJV PRIME to address a critical physician shortage. We hypothesize that recruiting students from, training them in, and providing meaningful curriculum and engagement with the SJV will increase SJV physician workforce. **Background** SJV has the lowest physician:population ratio in California and higher age-adjusted mortality rates.(1-2) **Selecting local students and training them locally** may increase the numbers who chose to practice there.(3-6) **Methods** We assembled a faculty-staff task force from SJV campuses (UCSF Fresno, UC Merced) and UCSF. We developed a mission statement with goals/objectives for each phase of the 4-year curriculum (mapped to UCSF graduation competencies). We created an admission process and developed instructional methods, learning experiences, and assessment strategies for F1, emphasizing SJV healthcare topics. For F2, we chose a longitudinal integrated clerkship (LIC) to leverage continuity to foster identity as an SJV physician.(6) We created an SJV-immersive F1 summer program with research, community engagement, and clinical experiences (7) and developed a plan for student experience and faculty development, building on UCSF Fresno's teaching mission. **Results: Outcomes:** We admitted our first SJV class, completed Introductory course and began F1 seminar series. End-course surveys for Introductory course showed we achieved our early goals. **OR Evaluation Plan** We will compare residency and practice site choices between SJV PRIME students and UCSF students who rotated in Fresno. **Discussion/Lessons learned:** To integrate SJV PRIME into the existing curriculum on a short timeline required local experience, high-level vision, representation of key stakeholders, and communication among all groups. We chose admissions as our first priority and then curriculum. We found widespread engagement from and acceptance by leadership and the academic community. **Reflective Critique** Regular check-ins with Bridges leadership, SJV PRIME steering committee, and students. We modified the Introductory Course, Seminar Course, and ARCH weeks based on student feedback.

**References** 1. Janet M. Coffman et al. (2018) California Physician Supply and Distribution: Headed for a Drought? California Health Care Foundation. 2. The Community Health Assessment Core Planning Group. (2016) San Joaquin County 2016 Community Health Needs Assessment. 3. Strasser et al.(2016) Rural Health Care Access and Policy in Developing Countries. Annu. Rev. Public Health. 37:395–412. 4. John C. Hogenbirk et al. (2016) Milestones on the social accountability journey: Family medicine practice locations of Northern Ontario School of Medicine graduates. Can Fam Physician 62:e138-45. 5. Couper, Ian D and Worley, Paul S. Meeting the challenges of training more medical students: lessons from Flinders University's distributed medical education program. MJA 193: 34–36. 6. Walters, Lucie et al. (2012) Outcomes of longitudinal integrated clinical placements for students, clinicians and society. Medical Education 46: 1028–1041. In partnership with California AHEC (Area Health Education Centers)

# Accepted Abstracts

## Abstract # 01

**Faculty and resident perceptions of student challenges when transitioning to procedural clerkships**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Communication, Curricular Innovation, Other: please describe in text field below

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE:** What are the perceptions and recommendations by faculty and residents for students transitioning into procedural clerkships? **BACKGROUND:** Faculty report that students struggle during the transition into procedural clerkships (those with a surgical or operating room (OR) component). Understanding how faculty and residents see these challenges and eliminating them, educators can develop curriculum to ease student transition into procedural clerkships. **METHODS:** We developed an interview guideline exploring faculty perceptions of student challenges and probed thoughts on curriculum interventions that they believed would be the most beneficial for students. One researcher conducted semi-structured qualitative interviews during the Summer of 2019 with 8 faculty and 8 senior residents in the Departments of Anesthesia, Surgery, and OBGYN observing students in 5 teaching sites. Site directors purposely sampled participants to represent experience with students and diverse cultural backgrounds. Content analysis is underway and preliminary challenges and curricular suggestions are reported. **RESULTS:** We identified four primary sources of challenges: clerkship site and logistical differences, level of student experience at the start of the clerkship, inconsistencies due to misinformed clinical educators, and lack of student use of soft skills, like situational awareness and interprofessional communication. Curricular suggestions included general sessions: anatomy and pharmacology refreshers, simulation sessions to review student responsibilities and integration of OR team members into the curriculum related to OR equipment, etiquette, and scrubbing-in. Site specific suggestions include: simulations to review equipment location, site specific OR etiquette, and having clinical educators introduce the medical student to the OR team. **DISCUSSIONS:** This study identifies specific curricular strategies that could reduce the challenges students face when transitioning to procedural clerkships. **REFLECTIVE CRITIQUE:** We received feedback from curriculum ambassadors, SOM faculty and ESCape Conference.

## Abstract # 02

**Equity in Assessment: A Narrative Study of Underrepresented in Medicine Learner Perspectives Along the Continuum of Medical Training**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Diversity, Equity and Inclusion, Research

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose** How do UIM learners characterize their achievements, the assessment practices that reflect their achievements, and the concept of equity in assessment during clinical training? **Background** Research on UIM learners has focused on deficits: negative learning experiences and lower performance outcomes. However, focusing on deficits does not account for the successes, nor does it capitalize on the strengths and contributions of UIM learners. Alternatively, the anti-deficit achievement framework<sup>1</sup> informs research questions about how UIM learners persist and successfully navigate their education. Understanding learner perceptions of successful and equitable assessment practices through the anti-deficit lens will guide efforts towards creating an equitable assessment system. **Methods** Narrative research techniques and semi-structured interviews of 20 UIM 4th year medical students and residents were used to explore individual experiences and achievements. We analyzed interviews using re-storying and thematic analysis.<sup>2</sup> **Results** Participants' stories of achievements during clinical training focused on their impact on patient care, and final assessments. Learners described assessments that captured attainment of competencies, included observation and continuity, and assessed for growth as inherent to achievement. Participants defined an equitable assessment system as one that allows learners to have equal access and opportunity to showcase their skills and knowledge regardless of their background, interest, or identity. An equitable assessment system was characterized as one that raises awareness among supervisors about possible inequities, bias, and the impact of likability on ratings, includes observation of learners, and assesses for growth over time **Discussion** UIM learners characterize equity in assessment and a powerful assessment system in similar ways. Assessment systems that train clinical supervisors on inequities, measure the attainment of a range of competencies and growth, were considered equitable. **Critique Feedback:** UCSF SES 2019 and WGEA 2020, we will provide detailed narratives

## Abstract # 03

**Surgical Resident Rotations in Low- and Middle-Income Countries: Motivations, Impact, and Host Perspectives**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Cultural Competence, Global Health, Interprofessional Education, Longitudinal Educational Activities, Motivation

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** To ask: 1) What motivates high-income country (HIC) surgical residents to rotate in low- and middle-income countries (LMICs)? 2) What is the impact of rotations? 3) What are LMIC partner perceptions of collaboration? **Background:** Interest in clinical rotations in LMICs has grown dramatically among HIC surgical residents. The impetus for this growth and its impact on HIC residents, LMIC hosts, and LMIC patients has not been well characterized or understood.

**Methods:** A search strategy of nine databases built around terms “resident education” and “global surgery” returned 3740 unique articles screened for 1) pertinence to HIC surgical resident rotations in LMICs, 2) inclusion of resident motivations, and 3) incorporation of LMIC host perspective. Data extraction was dually performed using meta-ethnography, a qualitative equivalent of meta-analysis. **Results:** Final analysis included 21 studies. HIC residents were primarily motivated by altruistic intent, with greatest impact on their professional development. LMIC partners most valued sustained investment and educational opportunities. Harm of HIC collaboration arose from discordance of priorities. HIC priorities included adequate operative time, exposure to varied pathology, and mentorship. LMIC priorities included addressing LMIC needs, and that HICs not take surgical cases from LMIC residents, undermine internal LMIC authority, or exclude LMIC partners as authors. Both HIC and LMIC partners raised ethical concerns and thought HIC residents were underprepared for LMIC rotations. **Discussion:** Three improvement categories emerged: that residents 1) receive site-specific preparation, 2) remain in country long enough to develop site-specific skills, and 3) cultivate flexibility and cultural humility. These data serve as a foundation for mutually beneficial international electives for HIC orthopedic trainees. This work has been submitted for publication. **Reflective Critique:** Meta-ethnography is an iterative method of discussion and critique with LMIC and HIC authors. Feedback was regularly sought and used.

## Abstract # 04

**Perceptions of Leadership: Residents' struggles in overcoming bias**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Diversity, Equity and Inclusion, Interprofessional Education, Leadership, Research

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** To understand how physician residents perceive, respond to and develop bias about clinical leadership? **Background:** Shared leadership leads to improved healthcare outcomes, yet has been difficult to implement. In a prior study, we identified that bias about professional background and gender influences residents' perceptions of optimal code leadership. To design effective interventions to mitigate biases, we must understand how residents engage with and develop these biases. **Methods:** We conducted a qualitative study using thematic analysis, informed by leadership categorization theory. Using a semi-structured guide, we interviewed 24 residents from internal medicine and anesthesia, equally distributed by program, PGY level and gender. During the interview, they watched a video-recorded scripted code scenario with either a female or male leader, labelled in the video as nurse practitioner (NP). **Results:** Residents described male and female leaders in the video as confident, calm and competent, but only described female leaders as "aloof" and unapproachable. Despite labeling, most residents on recall identified the leader as a physician. They attributed this to never seeing a NP lead a code, and not knowing NP training. Most residents acknowledged the existence of bias related to professional background and gender, more in others than themselves. Residents described leading codes as "algorithmic" and "simple" when justifying why NPs could lead. Finally, residents recognized the cycle of bias, where a female or NP may not be given space to lead, which decreases confidence and thereby ability, perpetuating the belief that females or NPs cannot lead. **Discussion:** Resident physicians recognize the existence of bias in healthcare leadership, and struggle with overcoming these biases. Interventions to mitigate bias should focus on increasing understanding of professional roles and disrupting the self-perpetuating cycle of bias. **Reflective Critique:** Portions of this work underwent review by UCSF and UCB faculty for Dr. Ju's Masters Project. We will be presenting at WGEA 2020.

## Abstract # 08

**Population health for the busy resident: developing a value-based care curriculum for internal medicine trainees**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Health Policy, Health Systems, Primary Care, Quality Improvement

**Category:** Curriculum Development

**Abstract:**

**Purpose:** We developed a population health curriculum for internal medicine residents. Our hypothesis was that a brief intervention would make trainees aware of innovative reimbursement models, complex care management, and resources at our institution. **Background:** Healthcare is shifting towards value-based care, holding clinicians accountable for cost and quality. Internal medicine residents care for complex patients, see transitions of care and enter independent practice in a healthcare system transitioning to new reimbursement models. However, their training in population health and value-based care is limited.(1,2) **Methods:** Residents received one hour of training, e-mail outreach, and individualized handouts with information about their own complex patients. Training included an overview of new reimbursement models (shared savings, bundled payments), risk adjustment and resources specific to their own panel of complex patients. **Results:** 39 residents participated; 18 completed both pre/post surveys. Comparing pre to post on a 1 to 5 Likert Scale, trainees expressed a greater understanding of accountable care organizations (3.1 to 4.2), local resources for complex patients (2.7 to 3.8), risk adjustment (1.5 to 4.4), their own complex patients (1.4 to 4.8), and patients who have not been seen recently (2.8 to 4.6). **Discussion:** Our population health curriculum improved trainee self-reported knowledge. Success factors included highlighting available resources, discussion time during training, and sharing individualized information. Difficulties arose from different priorities among residents bound for different subspecialties, small panel size, and limited impact of reimbursement on trainee practice. **Reflective Critique:** We plan to survey residents six months following the training and hold focus groups. We will examine objective outcomes before/after the training (patients not seen recently, coding gaps) although small panel size may limit power. Finally, we also aim to expand to other sites.

## Abstract # 09

**Motivations and impact of international rotations in low- and middle-income countries for orthopedic surgery residents: Are we on the same page?**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Cultural Competence, Evaluation of Programs, Global Health, Motivation

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** This study seeks to understand what motivates North American orthopaedic surgery residents to participate in clinical rotations in low- and middle-income countries (LMICs), and how the impact of such rotations is perceived by host orthopaedic surgeons and trainees. **Background:** Despite growing literature regarding the impact of clinical rotations in LMICs on North American residents, there is a paucity of literature describing the impact of these rotations on LMIC hosts and whether motivations and impact are aligned. **Methods:** A survey was distributed to North American orthopaedic surgeons and trainees who participated in an LMIC rotation during residency to assess motivations for participation. A second survey was distributed to orthopaedic surgeons and trainees at LMIC host institutions to assess perceived impact of visiting residents. **Results:** There were 136 responses from North Americans who had participated as a resident in an international rotation. There were 51 host responses, 59% of whom were trainees, representing ten countries in four continents. North American residents were more motivated by a desire to increase surgical capacity than to teach host surgeons, while host surgeons reported a greater impact from learning from residents than on surgical capacity. Negative aspects reported by LMIC hosts included selfishness, lack of reciprocity, racial discrimination, competition for surgical experience, and resource burden associated with hosting residents. Only 6 of 26 North American residency programs had a system for host partners to evaluate visiting residents. **Discussion:** The motivations and local impact of orthopaedic resident rotations in LMICs need to be better aligned. Host perceptions, impact, and bidirectional educational exchange should be incorporated into guidelines for academic partnerships. This work has been submitted for publication. **Reflective Critique:** We are in the process of planning follow-up qualitative interviews of LMIC hosts to better understand host perceptions of visiting resident rotations.

## Abstract # 10

**Developing an inter-professional curriculum to improve team-based HIV care in sub-Saharan Africa: focusing on learners in transition**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Global Health, Interprofessional Education

**Category:** Curriculum Development

**Abstract:**

**Purpose** With funding from HRSA to improve the quality of HIV care provided by early career professionals in sub-Saharan Africa (SSA), a consortium of health professional training institutions from sub-Saharan Africa (SSA) and UCSF, developed HIV-specific, interprofessional, team-based resources. **Background** Despite evidence of the impact of interprofessional education (IPE) strategies to improve the efficiency and quality of training, few pre-service health care professional (HCP) education programs in SSA have implemented such approaches. Furthermore, few HCP educational institutions have developed interventions to target trainees at the transition between pre-service training and professional practice. **Methods** Between April and July 2019, using Kern's six-step approach to curriculum development, a team from UCSF and partner schools in SSA developed a training package focused on core clinical, IPE, and quality improvement (QI) domains related to HIV service delivery. Using small group learning principles, seventeen case-based modules, intended to be taught in workshops complementing existing institution-specific HIV curricula, were developed to address a diverse set of HIV-related topics. All modules were targeted at newly qualified HCPs and those about to complete HCP training. **Evaluation Plan** A mixed-methods evaluation plan includes online pre- and post-tests regarding knowledge and confidence, reflections and learner and facilitator evaluations of the modules. **Discussion** To our knowledge this is the first IPE HIV-specific curriculum, explicitly focused on enhancing the quality of training provided to graduating HCPs in SSA, developed by an international team of HIV experts and education experts. Further evaluation of the impact of this project on pedagogical approaches, trainee competencies, are warranted. **Reflective Critique** The collaborative, inter-institutional, interprofessional approach to curriculum development provides a benchmark for how best-practice approaches to education can be rapidly disseminated and scaled across training programs in sub-Saharan Africa.

## Abstract # 11

**Identifying research priorities for Health Professionals Education Research in Sub-Saharan Africa using a modified Delphi method**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Admission and Recruitment, Global Health, Health Policy

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Background** There has been substantial increase in Health Professions Education Research (HPER) in sub Saharan Africa (SSA) in recent years but originates from single institutions and remains uncoordinated; this study aimed to generate a list of research priorities in health professions educational and was performed by members of the African Forum for Research and Education in Health (AFREhealth). **Methods** Membership of the AFREhealth technical working group (TWG) on HPER was asked to list potential research priorities. A modified Delphi methodology was then used to create a research agenda based on these responses and informed by TWG members as well as attendees of the annual AFREHealth academic symposium held in Lagos, Nigeria in August 2019. **Results** Health professions educators from across 13 countries responded to three survey rounds; 23 TWG members identifying the initial list of priorities in round 1, 90 respondents rating these priorities in round two and 52 (58%) agreeing on a final list of priorities in round 3. Over the course of these three rounds, a list of 26 research priorities was narrowed to a final list of eight topics that met consensus criteria (>70% agreeing that these topics should be included in the final list). The final list of 8 key research priorities included (1) addressing the human resources for health challenges in rural and remote areas, (2) interprofessional collaboration and practice in SSA, (3) teaching holistic and person-centered approaches to care relevant to an African context and (4) assessing the role of information communications technology in HPE in SSA. **Discussion** Using a Delphi methodology, a prioritized agenda for health professions education research in SSA was developed that may help advance health professions education in that setting, in addition to highlighting the importance of an enabling environment to undertake that research. **Reflective Critique** Despite the diverse backgrounds of participants, there was a high degree of consensus ratings of the research priorities across cadres and countries.

## Abstract # 13

**Interprofessional educational approaches to HIV training enhance knowledge and confidence in team-based care among early career professionals in sub-Saharan Africa**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Global Health, Interprofessional Education

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose** This project sought to optimize clinical knowledge and team-based HIV care in 14 sub-Saharan African countries by implementing interprofessional HIV training programs targeted at pre-service and early career Health Care Professionals (HCPs). **Background** Despite considerable investment in HIV programs across sub-Saharan Africa (SSA), the quality of care delivered is variable and undermined by suboptimal interprofessional collaboration (IPC). **Methods** From April 2019, faculty from 20 health professional education institutions across SSA developed and implemented an HIV-specific interprofessional training targeted at newly qualified HCPs and focused on case-based learning. Online pre- and post-training tests were used to evaluate mastery of learning objectives and learners' feedback. A mixed-methods approach was employed to evaluate the training. **Results** By January 2020, 900 learners were trained. Most were from nursing/midwifery (n=234, 42%), medicine (n=186, 33%), pharmacy (n=61, 11%), and laboratory sciences (n=59, 10%). Objective improvement in HIV knowledge and clinical competencies was seen across all cadres, with no significant difference in the magnitude of improvement from pre- to post-test between cadres ( $p=0.874$ ). While all learners reported increased confidence in their clinical HIV practice, the greatest increase was among medical trainees ( $p=0.026$ ). Through qualitative analyses of post-training evaluations, several themes were identified. Many learners reported 1) increased motivation to improve IPC in their HIV practice, 2) intentions to share learning with other HCPs, and 3) greater understanding and respect for other HCPs' roles in HIV care delivery. **Discussion** Our analyses suggest that this novel curriculum improves cross-disciplinary understanding, and health professionals' motivation to deliver high-quality team-based HIV care in SSA. **Reflective Critique** While many HCPs in SSA have knowledge about HIV care delivery, this analysis highlights how an IPE approach to HIV training can improve confidence and collaboration among early career HCPs.

## Abstract # 15

**Developing Critical Consciousness in Structural Racism : the Role of Transformative Travel**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Cultural Competence, Curricular Innovation, Diversity, Equity and Inclusion

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

Developing Critical Consciousness in Structural Racism : the Role of Transformative Travel. Purpose: Examine how a transformative travel experience can help residents and faculty develop critical consciousness in structural racism. Background: Critical consciousness is the ability to recognize systems of oppression and take action to dismantle them. Few residency programs teach about health disparities through the lens of critical consciousness. Grounded in sociocultural and experiential learning theories, 28 UCSF PLUS (Pediatric Leaders Advancing Health Equity) residency faculty and residents spent 4 days visiting historical civil rights sites and meeting with community leaders in the American South to deepen resident and faculty awareness of structural racism and its impact on health disparities, and to build their capacity to dismantle systems of oppression. Methods: We used a mixed methods approach with end-of-trip and post trip surveys at 1, 6, 12 and 36 months. Results: 96% (27/28) of participants completed the end of week survey. 84% felt learning directly from local leaders and 92% felt being in the physical places that memorialize people and historical events contributed greatly to their understanding of structural racism. 92% felt the trip contributed greatly to strengthening their practice of cultural humility. Themes in the 1 and 6 month follow up surveys include increased recognition of structural racism and increased courage in confronting racist systems and behaviors. Discussion: Overall, the trip met its stated learning goals and was effective in increasing practices of cultural humility and increasing recognition of and action against structural racism. The experience highlighted the need to sit with discomfort, and create “in the moment” spaces for healing as important components of developing critical consciousness in structural racism. Reflective Critique: Travel experiences require a significant investment of resources; we are considering how to apply the principles we learned to develop critical consciousness through local immersive experiences.

## Abstract # 16

**Variability in the Application of Interprofessional Simulation Based Education: A Qualitative Study**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Simulation

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose** To investigate the application of interprofessional simulation-based education (IPSE) in practice. **Background** Despite growing use of IPSE, limited evidence exists to support best practices. To create a stronger evidence-base for IPSE, we explored to what extent IPSE programs apply these best practices. **Methods** Based on published IPSE, IPE, and SBE recommendations, we developed a framework of 12 IPSE principles. We conducted a qualitative case study of 7 IPSE programs at 5 different hospitals at 2 institutions. We used our framework to guide observations and interviews of facilitators/directors. We performed 3 observations and 2 interviews per program. We used the framework method to compare themes with the 12 IPSE principles. As a secondary analysis, we coded interviews for affordances and barriers to successful IPSE. Three investigators coded the data followed by comparison and reconciliation through discussion. **Results** We observed 21 simulations and conducted 13 interviews (1 program ended between the time of observations and interviews). Out of 12 IPSE principles, 4 were consistently applied across programs (active learning, psychological safety, sociological fidelity and feedback/debriefing). Application of 8 principles were variable (equitable distribution, IP/teamwork competency based learning objectives, IP/teamwork competency based assessment, repetitive and distributive practice, awareness of difference and hierarchy, training facilitators, program evaluation and institutional support). Barriers included limited time, funding and assessment tools. Affordances included nursing support and engaged participants/facilitators. Institutional support was both a barrier (if absent) and an affordance (if present). **Discussion** IPSE programs vary significantly in how they apply principles derived from published guidelines. Future efforts should focus on measuring outcomes related to the more variably applied principles. **Reflective Critique** We presented results from observations at the 2019 WGEA, which informed our interviews and analyses.

## Abstract # 17

**Osmosis Medical Education Fellowship: building community across medical schools**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Diversity, Equity and Inclusion, Longitudinal Educational Activities, Mentoring, Motivation

**Category:** Curriculum Development

**Abstract:**

**Purpose:** We created the Osmosis Medical Education Fellowship (OMEF) to build community across student subscribers to the Osmosis platform. **Background:** Osmosis is a health sciences education technology platform used by 800,000 active users, including health professional students from >20% of US medical schools. To promote our values, the OMEF program was designed to “Have Each Other’s Backs” and “Reach Further.” **Methods:** Our program includes 1) monthly Zoom meetings, 2) focus groups about product & content improvements, 3) monthly surveys about programmatic improvements, and 4) templates for hosting 2 school events/semester. OMEFs publish medically & lifestyle relevant content on the Osmosis blog. Community is built within medical schools through required OMEF-led events, and between OMEFs through the Slack platform, which has evolved to include interest-specific channels. OMEFs who complete a minimum of 3 required activities receive a monthly stipend. Interested OMEFs apply to become Regional Leads, who mentor 10 - 15 Fellows and improve the program through independent projects. **Results:** We have had 200 OMEFs since program inception in 2018. While experiences certainly vary, the following verbatim feedback encapsulates OMEF impressions: 1) “Glad to be a part of the Osmosis Family and looking forward to another year of bringing the platform and values to more people!” 2) “...I believe a happy workplace is first of all a social workplace and even though I haven't physically been seeing anyone, the OMEF is a very warm and welcoming community that I am very happy to be a part of” and 3) “The OMEF program was the most unexpected thing for me and it became one of the highlights of my year.” **Discussion/Dissemination:** We’ve created a viable community of practice among global medical students. We will present this program at future conferences (e.g. WGEA, AAMC, IAMSE). **Reflective Critique:** Each month, we survey OMEFs to hear their ideas and host brainstorming sessions to learn how to better support our students during their medical careers and within the program.

## Abstract # 18

**The impact of a novel domain: Assessing student advocacy on behalf of patients in two University of California, San Francisco longitudinal integrated clerkships**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Diversity, Equity and Inclusion, Longitudinal Educational Activities, Patient Care

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

Purpose: To study the impact of introducing advocacy assessment to two yearlong longitudinal integrated clerkships (LICs). Background: Core to a physician's professional role is to "advocate for the social, economic, educational, and political changes that ameliorate suffering and contribute to human well-being."<sup>1,2</sup> Medical student education on advocacy exists<sup>3</sup>, but the role that assessment can play in reinforcing advocacy as a core physician skill has not been described. Hubinette describes three physician advocacy roles: supporting individual patients with health care needs directly related (clinical), more peripheral but parallel to their immediate clinical problem (paraclinical), and population-based activity (supraclinical).<sup>4</sup> Formally assessing advocacy within LICs, known for patient centered learning with continuity, provides an opportunity to understand the role of assessment in reinforcing advocacy as a core physician skill. Methods: UCSF Internal Medicine clerkship introduced a novel advocacy assessment domain in 2018.<sup>5</sup> Using a thematic approach, we characterized the impact of advocacy assessment. We conducted two student and three faculty focus groups in both LICs, between December 2018-March 2019. Results: Continuity with patients, preceptors and medical center spurs advocacy. Students and faculty perceive advocacy to include identifying patient needs, gaps in care, and resources; navigating the system; amplifying the patients voice; and empowering the patient. Advocacy assessment 1)adds a novel dimension to assessment, 2)drives learning, 3)impacts teaching and physician practice, and 4)aligns with institutional values around health equity. Students acknowledge ambiguity in advocacy assessment; at times sense guilt, noting their privileged role; and describe a tension in whether their advocacy is motivated by assessment or by altruism. Discussion: Including assessment of student advocacy on behalf of patients recognizes authentic student advocacy in meaningful roles and reinforces professional values. Reflective critique: Input from UCSF Escape, UCSF TSP, and LIC community

## Abstract # 20

**“Is anyone learning?”: Applying a continuous quality improvement framework to collaboratively improve the learning environment on rounds for students, residents and faculty.**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Patient Care, Quality Improvement

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** We describe the initial phases of a continuous quality improvement (CQI) process to collaboratively improve the learning environment (LE) on rounds in internal medicine. **Background:** Inpatient “work” rounds are intentionally designed to blend clinical care and learning. However, multiple data sources identify rounds as a stressful LE in which learners express high dissatisfaction with rounds’ educational value. When such problems arise, UME/GME/CME stakeholders tend to work in silos to improve education rather than considering how they might address the problem holistically, as one educational community. A more holistic and collaborative approach can ensure the needs of all stakeholders are considered when designing solutions. **Methods:** In response to feedback about learning on rounds, we conducted a multi-phased effort to improve the LE by applying a CQI process (“A3”) traditionally used for healthcare delivery. This included: 1) creation of a departmental UME-GME-CME leaders’ group to improve the LE, including clerkship leadership to ensure student representation; 2) observation of rounds, and 3) stakeholder meetings to conduct gap analyses and prioritized solutions using Lean Six Sigma tools. **Outcomes:** We focused on gaps and solutions under the educational community’s purview. Gaps included variability of team rounding/teaching practices, lack of standardized oral presentations, students’ perceptions of having outdated patient information and feeling “redundant” on the team, and perception of insufficient learning and pressure with presentations. We identified solutions of varying payoff-effort levels (e.g., restructuring presentations, providing one-line contextual summaries, copying students on pages). The next phase will be selection of solutions and pilot implementation. **Reflective Critique:** Strengths include alignment of UME/GME/CME goals in improving the LE, and application of a healthcare CQI method to an educational problem. Limitations include the difficulty of identifying feasible solutions relevant to all stakeholders.

## Abstract # 21

**Simulation Medical Education: Challenges and Opportunities in Low-Income countries-A Pilot Instructor Course among Healthcare professionals**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Evaluation of Programs, Global Health, Interprofessional Education, Simulation

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** The aims of our project are to explore the barriers to simulation medical education (SME) and evaluate the acceptability and impact of the Simulation Medical Education (SMiLE) course in Eastern Africa. **Background:** SME remains limited in low-income countries (LICs) despite being an effective teaching tool. Through institutional partnership with USCF, a low-cost, high-fidelity simulation laboratory was set-up at Makerere University, Uganda in 2014. However, the scarcity of simulation instructors limited its utilization. To overcome this challenge, the SMiLE Instructor Course adapted for the local context was developed in 2019. **Methods:** We piloted the 3-day SMiLE course in May, 2019 at the Makerere University. Purposive sampling of 20 medical educators and leaders involved in training programs at their home institutions were invited to attend the course. The faculty comprised local and international instructors with expertise in simulation. The highly-interactive course teaches foundation principles and application of simulation, designing and conducting scenarios and effective debriefing skills. Needs assessment and post-course surveys were conducted as part of course evaluation. **Results:** The 20 participants were from Uganda (70%), Tanzania, Zambia and Nepal; comprising anesthesiologists, nurses and a surgeon representing 10 institutions. The needs assessment showed that 75% use simulation at their institutions. Main barriers identified included inadequate knowledge and skills (55%), lack of equipment and dedicated space (50%). The quality of course content was rated as very good (4) to excellent (5) on a 5-point Likert scale by 90% of the participants. A follow-up survey is being conducted to assess impact of SMiLE on the participants and their institutions. **Discussion:** The pilot SMiLE course was well received and provides a solution to the deficiency in simulation instructor training, thereby increasing the number of simulation instructors to champion this teaching tool and improve quality of medical training. **Reflective Critique:** A follow-up survey is being conducted

## Abstract # 22

**The UCSF Learning and Caring Environment (LACE) Initiative to Optimize Clinical Learning Environments**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Diversity, Equity and Inclusion, Evaluation of Programs, Feedback, Health Systems, Interprofessional Education, Leadership, Quality Improvement

**Category:** Curriculum Development

**Abstract:**

**Purpose:** Assess clinical learning environments and engage stakeholders to drive improvement. **Background:** There is increasing interest in the role of clinical learning environments (CLE) in medical education. Recent conceptualizations of learning environments recognize their complexity, identifying personal, social, organizational and physical components. This complexity creates potential hurdles for comprehensive assessment and effective quality improvement of CLEs. **Methods:** In 2018, UCSF's School of Medicine launched the Learning and Caring Environment initiative, to assess the quality of CLEs associated with clinical departments and identify improvement opportunities. We appointed 4-5 faculty per department to ad-hoc assessment teams charged with multisource data collection about all four components of learning environments. Assessing student, resident and faculty perspectives, teams collected qualitative data through observations, focus groups and interviews, and collated existing quantitative data (evaluations and surveys). We examined data against four pillars proposed for exemplary learning environments: 1) Shared goal between the health and educational systems (improving health); 2) Work is learning, learning is work; 3) Diversity and inclusion; 4) Continuous improvement for individuals, teams and institutions. **Results:** We completed assessment and recommendations reports for the Pediatrics and Internal Medicine departments. We shared these reports with clinical and education leadership, and together created actionable plans in response to recommendations. It is too early to draw conclusions about impact on the quality of CLEs, but leaders in both departments are actively engaged in improvement efforts. **Discussion:** Sharing information across stakeholder groups has created a welcome opportunity to recognize common goals and formulate plans that benefit all who work, learn and are cared for in CLEs. We believe our approach holds promise for successful adaptation elsewhere. **Reflective Critique:** We sought stakeholder feedback to modify our approach for each department

Abstract # 23

### **The Virtual Approach to Gynecology Project**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Patient Care, Primary Care

**Category:** Curriculum Development

**Abstract:**

**Purpose:** The Virtual Approach to Gynecology Project is a 360-video curriculum for trainees to review a female speculum exam. **Background:** For students, pelvic exam observation is constrained by availability of gynecologic setting, preceptorship, and patient willingness. This project compliments real-world experiences as a review of the exam without logistic constraints and may foster familiarity and comfort. Compared to traditional video, trainees identified realism of 360-video as major contributing factor of a virtual simulation's success rate and acceptance.<sup>(1)</sup> **Methods:** This video was filmed with a director of photography to address technical challenges. Scripting was guided by a UCSF gynecology trainee to include sensitive trauma-informed language. Filming was set in the San Francisco City Clinic. The video is now being shown to UCSF trainees for evaluation. **Results:** The video was successfully created to include provider-patient introduction, external exam, and speculum exam inclusive of Pap smear and STD screening test. Trainee feedback is ongoing. Thus far, common themes include: the module is more useful than traditional video due to feeling "actually in the room", and clear visualization of the cervix; additional modules on exam set up are desired; an interactive component could increase rehearsal opportunities; 360-video usability varies by viewers' previous VR experience. **Dissemination:** The final video will be available to UCSF trainees online viewable on a smart phone with cardboard viewing. To reach other medical educators we will submit meeting abstracts and pursue publication. **Reflective Critique:** Filming was technically complicated given the nature of 360-filming in a confined exam room with short focal length and lighting to provide clear visualization of pelvic anatomy. Moving forward we will create additional modules with emphasis on exam room set-up and haptic components.

## Abstract # 24

**Observable Practice Activities (OPAs): Tools to Evaluate Time-Flexible Resident Training**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Clinical Instruction and Performance, Competencies, Longitudinal Educational Activities

**Category:** Curriculum Development

**Abstract:**

**Purpose:** To demonstrate the use of Observable Practice Activities (OPAs) with Psychiatry residents enrolled in the Clinical Neuroscience Area of Distinction (AoD), a specialized training path for residents interested in neuropsychiatry launched in July 2019. **Background:** By using competency-based medical education (CBME), we facilitate AoD completion in variable time. CBME elements used in this AoD include: patient log, observable practice activities (OPAs), and activities related to education of interprofessional teams. OPAs are discrete activities that can be directly observed by faculty during a clinical encounter, requiring limited time and effort (Teherani et al., 2014; Warm et al., 2014). **Methods:** An OPA form was developed in MedHub. The form allows raters to evaluate trainees on 8 different activities during the same patient encounter. Examples include (all refer to a patient population with neuropsychiatric conditions): Perform diagnostic evaluation; Read and interpret relevant laboratory studies to the team or patient/family; Provide pharmacological treatment. OPAs are rated on the same 1-5 entrustment scale used by the adult psychiatry residency program and are collected in addition to the regular program evaluations. In order to complete the AoD, residents have to reach entrustment level 5 on at least one OPA for 6 of the 8 activities, and level 4 for the other 2 activities listed (which are outside of their scope of practice). **Results:** The OPA tool has been in use since July 2019 and has been well received by faculty and residents. To date, 10 OPA evaluations have been collected (2 faculty, 2 residents), covering 59 activities. OPAs allow frequent constructive feedback based on direct resident observation. **Discussion/Dissemination:** Next steps include finding a better way to plot scores so as to track learner performance over time. We presented workshops at AAP and AAMC and plan to prepare a manuscript for publication. **Reflective Critique:** This OPA was developed with input from various stakeholder groups and in consultation with Olle ten Cate, PhD.

## Abstract # 25

**Advanced care planning in Radiation Oncology**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Health Care, Health Systems, Quality Improvement

**Category:** Curriculum Development

**Abstract:**

**Purpose:** To evaluate an educational intervention regarding ACP documentation in radiation oncology, and to elucidate barriers to ACP discussion. **Background:** ACP is a critical element in the care of adults with cancer. In order to provide goal concordant care, we must understand the values, goals and preferences of our patients. These conversations can be challenging for providers and patients alike. We developed a curriculum to encourage ACP and EHR documentation in radiation oncology. **Methods:** Radiation oncology faculty received an introductory lecture on ACP and its documentation. A note template including ACP was introduced at the Parnassus site. Impact of the education campaign was assessed with a pre/post chart audit of ACP documentation for patients with cancer. Additionally, we surveyed clinicians about their experience. **Results:** Prior to the education and note template intervention, 0% of audited charts over 1 month included ACP. After the intervention, this increased to 34.5%. 75% of surveyed radiation oncology MD's reported using ACP documentation in their APEX notes. 100% knew where to find ACP documentation in Apex, and 100% knew how to bill for time spent discussing ACP. 75% of those surveyed reported the main barriers to ACP discussions as "difficultly defining appropriate moment to engage patients in ACP" and "lack of time."

**Discussion/dissemination:** Our educational intervention (didactic education and a documentation tool) demonstrated improvement in documentation of ACP in Radiation Oncology at Parnassus. Several barriers were identified, including lack of physician comfort discussing end of life preferences with patients. This piloted template will be disseminated to Radiation Oncology sites across the medical center. **Reflective Critique:** The survey was created to assess both understanding of documentation goals and to elicit potential barriers to implementation. We plan to use this helpful feedback to plan a robust ACP educational session in radiation oncology, with the goal of improving physician comfort discussing ACP.

## Abstract # 26

**Mitigating moral distress by managing uncertainty: a qualitative study in pediatric intensive care**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Health Care, Interprofessional Education, Patient Care

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** This study explores whether and how uncertainty contributes to moral distress. **Background:** Moral distress occurs when healthcare professionals feel psychologically distressed as a result of experiencing a moral event in caring for patients (Morley et al., 2019). Although it has long been thought to result from constraints, recent conceptual analyses suggest that moral distress may also be triggered by uncertainty (Fourie, 2017). Uncertainty in medicine is increasing (Hunter, 2016) and healthcare professionals often feel unprepared to manage uncertainty as it gets limited attention in health professions education (Kim & Lee, 2018; Simpkin & Schwartzstein, 2016; Tonelli & Upshur, 2019; Wray & Loo, 2015). **Methods:** As part of a mixed methods study on healthcare professionals' experiences of moral distress, we conducted semi-structured interviews with pediatric intensive care physicians (n=9) and nurses (n=9) at three children's hospitals in northern California. We analyzed the data in an inductive, iterative manner to understand whether and how participants mentioned uncertainty in relation to moral distress. **Results:** All participants reported that difficulty in managing uncertainty contributed to moral distress when there was no clear diagnosis and when they struggled to decide on treatments. In addition, physicians sometimes experienced moral distress when they found it difficult to communicate uncertainty to patients and families. Nurses experienced moral distress when they were excluded from decision-making processes regarding their patients and were, as a result, uncertain about the potential futility of care. **Discussion:** Our findings suggest that participants' lack of preparation to face uncertainty contributes to their experiences of moral distress. Better preparing healthcare professionals to manage and openly communicate about uncertainty may help mitigate moral distress. **Reflective critique:** We presented various stages of this study to the Pediatric Education Scholarship Group, which helped us clarify the relationship between moral distress and uncertainty.

## Abstract # 27

**Understanding the Current State of Medical Student Well-Being**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Curricular Innovation, Diversity, Equity and Inclusion, Evaluation of Programs, Financing Medical Education, Inquiry, Mentoring, Professionalism, Quality Improvement, Reflection, Research

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** The purpose of this project is to understand the current state of medical student well-being and identify key stressors leading to burnout. **Background:** Medical school is known to be a period of severe distress for many students, with rates of burnout at 56%, depression at 27%, and suicidal ideation at 11%. Interventions to reduce medical trainee burnout are scarce and have generally been found to have no or unclear benefit. **Methods:** This study was executed using a survey consisting of the Medical Student Well-Being Index (MSWBI) assessing burnout, demographics, as well key stressors faced during medical school. It was distributed by sending recruitment letters to leaders in student wellness at all 174 US Medical Schools. Burnout was defined as MSWBI score greater than or equal to 4. Statistical tests included  $\chi^2$ , Student's t test, and ANOVA. Statistical significance was defined as  $p < 0.05$ . **Results:** Data was obtained on 2991 students from 91 medical schools. The average MSWBI Score was  $3.4 \pm 2$  out of 7. 50% of respondents met criteria for burnout. Overall, 17% of respondents have considered taking a Leave of Absence for their well-being, and 29% admit to using alcohol and/or marijuana to cope. Top stressors were Step 1, Grades/Evaluations, Uncertainty about Future, and Social Isolation. High-risk groups for burnout were MS3s (58%), non-male students (54%), students with disability/chronic illness (63%), as well as students with debt  $> \$100K$  (59%). **Discussion:** The results above reveal a dire situation for the current state of medical student well-being. Efforts to combat this issue have been largely ineffective at a large scale. Identifying high-risk groups and key stressors will help ensure interventions are targeted and designed appropriately. These findings will be disseminated through upcoming publication and talks. **Reflective Critique:** Feedback has been sought by collaborating with students and administrative faculty at UCSF and other schools to iterate on survey design and dissemination.

## Abstract # 28

**Conflict Management Curriculum for Operating Room Trainees**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Curricular Innovation, Simulation

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** To develop and implement conflict management sessions for residents. **Background:** Poor communication can lead to significant work-related stress. A study of physician trainees found that difficult interpersonal relationships, communication problems and conflict were more stressful than long work hours and missing meals. By giving trainees the skills to manage conflict effectively, we may improve their sense of wellbeing as communication skills. **Methods:** We have developed and integrated conflict management workshop into wellness curriculum by introducing the Thomas-Kilmann Conflict Mode Instrument (TKI) and its five modes of conflict management (collaborating, compromising, competing, accommodating, avoiding) as well as examples of appropriate clinical scenarios for each mode. The residents were divided into two groups, role play (RP) and high-fidelity simulation (SIM). Residents in the RP group alternated roles between surgeon and anesthesiologist. Residents in the SIM group played the role of the anesthesiologist with a standardized actor as the surgeon and a simulation mannequin as the patient. Faculty debriefed with the residents after each four scenarios. Pre and Post session surveys included conflict management knowledge, level of confidence, and satisfaction with the session. **Results:** 27 of 43 (62.7%) residents (15 RP, 12 SIM) completed both pre- and post-session surveys. Residents showed significant improvement in their conflict knowledge scores (1 to 5) with an increase in score of 3.27 to 4.33 ( $p < 0.00$ ) and 3.18 to 4.67 ( $p < 0.00$ ) in RP and SIM, respectively. There was no significant increase in conflict preparedness or confidence in conflict management before vs. after the session. Satisfaction scores were similar with scores of 8.53 (RP) and 8 (SIM) (out of 10) for both groups. **Conclusions:** Both RP and high-fidelity simulation exercises appear to be effective in teaching conflict management skills. **Reflective Critique:** We are planning a research study to conduct a comparative effectiveness study of these two teaching modalities.

Abstract # 29

**Implementation and Analysis of a 2-Year Online Esophageal Motility Curriculum for Gastroenterology Fellows**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Competencies

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose** To develop and evaluate an online motility learning program for the Gastroenterology (GI) fellows at UCSF. **Background** Motility disorders account for up to 40% of outpatient GI visits. However, compared with endoscopic training, motility education of GI fellows is limited at many training centers. Novel technology may facilitate dissemination of standardized curricula to train fellows. **Methods** An online motility learning program was implemented at UCSF between years 2017-2019. A pretest survey was sent in July of 2017 and 2018 to assess comfort level and baseline competency. Each fellow received biweekly emails containing esophageal manometry (EM) questions. After answering each question, fellows received feedback with detailed explanation of correct answer choice with references. A post-curricular test was sent in June 2018 and June 2019. **Results** 16 trainees completed a pretest survey and 12 trainees completed the posttest. Initially, only 13.3% of fellows were comfortable in interpreting EM studies, whereas following the curriculum 55.5% felt comfortable in their abilities ( $p=0.06$ ). Trainees' accuracy in interpreting EM increased from 62.5% to 73% on the posttest ( $p=0.14$ ). Trainees found the following aspects of the curriculum to be valuable: the ease of usability of the online questions, the flexibility in pacing, and real time explanations of questions. **Discussion** A technology based curriculum was effective in educating GI fellows on core concepts of EM. Fellows reported increased comfort in interpreting EM studies after completing the curriculum; lack of statistically significant improvement on the post-test likely reflects their high performance on the pre-test. This curriculum will be continued in future years with challenging questions to further stratify data and improve competency of GI trainees. **Reflective Critique** This project has been discussed at the Clinical Research Conference in the Division of Gastroenterology at UCSF. The feedback solicited during this conference has been incorporated into further modifications of the project.

## Abstract # 30

**A globally-networked Wikipedia-editing course for medical students**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Computers and Technology, Curricular Innovation, Global Health, Quality Improvement

**Category:** Curriculum Development

**Abstract:**

**Purpose:** Is it possible to run a decentralized course for medical students to improve Wikipedia's health content? **Background:** We have run a UCSF MS4 Wikipedia-editing elective since 2013. A few schools have followed our lead, but a full adoption of these electives in the curriculum is still limited. Since being founded in 2014, Osmosis.org has a growing number of subscribers worldwide that utilize videos, question banks and other licensing exam study tools. **Methods:** We leveraged Osmosis's global network of medical students to offer a Wikipedia editing course. To ensure commitment to the course, a 2 part application was sent to allopathic medical students who subscribed to the Osmosis platform. We used the Wiki Education foundation platform and Zoom for a total of 8.5 hours of synchronous sessions distributed over a 4-week course. After an orientation and 9 training modules on Wikipedia article quality and importance scales as well as ethical and proper editing etiquette, students selected a low-quality article to improve, completed self-directed editing goals, and participated in peer feedback exercises. Information literacy lessons with a librarian were also included. **Results:** Twenty-nine students started the application and 12 matriculated; 11 completed the course. During the course 11 students from different medical schools on 3 continents added 8,775 words and 119 references to 11 Wikipedia pages which were viewed 175,022 times during the course. Beyond the 11 assigned articles, students voluntarily edited 18 additional articles. Some students continued to edit Wikipedia after course completion. **Discussion:** We demonstrated the viability of a non-credit bearing, remote-access course in editing health content on Wikipedia with medical students from around the world. This obviates the challenge of incorporating such coursework into already packed medical school curricula and adds a new approach to improve the health content of the world's most heavily used health information source. **Reflective Critique:** We limited our course to English-speaking medical student subscribers to Osmosis. Future efforts might expand across languages and could include students across all health sciences.

## Abstract # 31

**Implementation of a Pediatric Anesthesia Curriculum for Non-Anesthesia Learners**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Interprofessional Education

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE** Our goal was to design, implement, and evaluate a pediatric anesthesia curriculum for non-anesthesia learners completing a two-week rotation. **BACKGROUND** Standardizing education during an anesthesia rotation is challenging due to variability in case load and fluctuating number of faculty providers assigned to work with trainees (Bowe et al., 2018). An additional challenge is that we host many diverse non-anesthesia learners. **METHODS** We employed Kern's method to implement a curriculum (Kern, 2008). Our learners included medical students, pediatric dental residents, pediatric residents, EM residents and PICU fellows, and were classified as medical students or advanced learners. Developed a curriculum that included lectures, procedural videos, and PBLDs for our learners. We housed the material on the online platform "Anesthesia Toolbox". Learners took a pre-test prior to starting their rotation and a post-test upon completion. Learners evaluated each learning tool using a Likert scale (1-5). **RESULTS** 6 medical students and 13 advanced learners completed our rotation. Medical student's mean pre-test score was 65% (SD±16.4) and mean post-test score was 90% (SD±6.3),  $p<0.01$ . Advanced learner's mean pre-test score was 62% (SD±19.9) and mean post-test score was 88% (SD±12.1),  $p<0.01$ . Medical students assigned mean scores of 3.67, 4.5 & 4.3 to the PBLDs, lectures, and procedural videos, respectively. Advanced learners assigned mean scores of 3.4, 4, & 4.1, respectively. **DISCUSSION** Post-test scores showed improvements in both groups. Interestingly, the pre-test and post-test scores were similar between the two groups, indicating that knowledge background may be similar between the groups. Students favored lectures, while advanced learners favored the videos. This may reflect differing group goals: increasing knowledge vs. gaining procedure skills. Accepted as a poster at SPA Conference 2020. **REFLECTIVE CRITIQUE** Presented at HPE Pathway WIP session in Dec 2019. Presenting at Anesthesia Med Ed Meeting in Feb 2020. Ongoing feedback from learners to guide curriculum modification.

## Abstract # 32

**What Matters Most: Education in Advance Care Planning for Patients, Families and UCSF Staff**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Community Medicine, Interprofessional Education, Patient Care

**Category:** Curriculum Development

**Abstract:**

Purpose: To promote advance care planning (ACP) for patients at UCSF via direct education among patients as well as via engagement among staff and clinicians in their own ACP. Background: ACP is a complex process that requires educated and motivated patients, as well as clinicians. In addition, it is key to guarantee that documents produced as part of the process are easily available in the EMR. Initially developed for UCSF patients with cancer, What Matters Most workshops were adapted for use with primary care patients at UCSF. Methods: Free, monthly, nurse-led 2-part ACP workshops which include scanning completed Advance Directive (AD) documents into the EMR. Post-workshop informal interviews with a convenience sample of patients. In addition, introductory presentations about ACP at staff meetings for nurses, frontline staff and medical assistants. Results: 57 patients participated in WMM between March 2019 – January 2020. Twenty-five (43.9%) completed AD during workshop (compared to an average of 30% AD completion in primary care). Participant comments included: “This has been a deep & worthwhile experience.” “It is a true gift to anyone fortunate enough to attend!” Discussion: A 2-session ACP workshop is valued by patients and is associated with a high rate of AD completion and scanning into the EMR. Engaging staff and clinicians in education about ACP and encouraging them to complete their own appears to further promote ACP at UCSF. Reflective Critique: In presenting at staff meetings, we have engaged managers/supervisors to give us feedback regarding staff responses and this has resulted in the need to change some of our presentation modalities depending on the particular staff cohort. One entire department requested a follow up, more in-depth presentation for their own staff to do ACP documents. This will be offered to other programs as well. We also received feedback regarding the challenge of the timing of the monthly workshops, (typically Noon -2 pm on a Wednesday) and we are planning on offering periodic evening sessions as well as developing a live/on-line program.

## Abstract # 33

**A virtual reality-based simulated patient encounter that uses artificial intelligence: Results of a pilot project with Family Nurse Practitioner students**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Computers and Technology, Curricular Innovation, Simulation

**Category:** Curriculum Development

**Abstract:**

**Purpose:** In fall 2019, Samuel Merritt University (SMU) partnered with a vendor of a virtual reality (VR) & artificial intelligence (AI) standardized patient called Spark. The SMU simulation team was eager to evaluate the pilot in a robust scholarly way. **Background:** While simulation is a well-established teaching modality in health professions education, both VR and AI have not systematically been studied. Spark contains digital standardized patient cases that utilize AI to produce realistic interview scenarios with learners in a VR environment. **Methods:** Sacramento family nurse practitioner (FNP) students (n=24) piloted Spark in fall 2019. The simulated patient was a 38 year old outpatient with a chief concern of headaches. After a 4 minute orientation, students' individual encounters lasted 10 – 12 minutes. Optionally students completed a survey and participated in a single focus group conducted by SMU faculty and sim center staff. **Results:** Twenty-two students completed the survey (92% response rate) and 24 students participated in the focus group. One key highlight: 15 of 22 students would recommend Spark to other health professional learners. Other results will be highlighted if accepted. **Discussion:** We believe this demonstrates both viability and desirability of this novel simulation modality (VR + AI). Similar to Siri and Google Assistant, we expect the AI of Spark to grow "smarter" over time. To determine if this product is both appropriate and valuable at our sim center, we will conduct additional Spark pilots in other SMU programs. **Reflective Critique:** There is a broad range of student opinions about Spark, including staunch skeptics. This is perhaps similar to the range in students' "suspension of disbelief" in all simulation encounters. Our focus group was conducted by enthusiasts of the modality, so negative student responses during the focus group may have been artificially muted. Despite these limitations, the majority of the student survey responses (20 of 22) would like to have additional virtual patient experiences during their SMU training.

## Abstract # 34

**Preventing Provider Burnout via the Ekstasis Peer Consultation Model**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Communication, Longitudinal Educational Activities, Motivation

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE:** We predict the Ekstasis peer consultation model is a necessary solution to prevent burnout amongst UCSF Child and Adolescent Service (CAS) psychiatry providers.

**BACKGROUND:** “Burnout” is defined as emotional exhaustion, depersonalization, and reduced personal efficacy. Mental health provider burnout is understandable given the exposure to emotional suffering and traumatic life events from our patients. Indeed, 21 - 67% of mental health providers report high burnout. The Ekstasis peer consultation model may reduce burnout by improving providers’ negative feelings towards patients, communication and consultation skills, perceived support and job satisfaction, isolation, and stress.

**METHODS:** To date, we have held 2 cohorts of Ekstasis with N = 14 CAS providers and we plan to continue. Accordingly, we distribute trimester Qualtrics surveys to all CAS providers to evaluate baseline levels of burnout in the department and improvements in burnout for Ekstasis participants via the Professional Quality Of Life Scale.

**RESULTS:** Data to-date indicates that Ekstasis participants are more burned-out than non-participants ( $t = 2.107$ ,  $p = .049$ ,  $N = 21$ ), suggesting our effort is reaching providers in-need. Participants rated high satisfaction (promoter score = +63.64). We plan to continue trimester surveys to increase our sample size and examine longitudinal changes in burnout and satisfaction.

**DISCUSSION:** As our sample size grows, we will evaluate changes in provider burnout and potential impact of Ekstasis participation over time, as well as individual-level and institution-level factors predicting who is most in need of burnout prevention efforts like Ekstasis. We are presenting our model and findings with peers at the Society for Adolescent Health Medicine conference in March 2020 and also plan to present at the UCSF Health Improvement Symposium annually.

**REFLECTIVE CRITIQUE:** We meet regularly with our leadership team (Drs. Shaller, Costello, and King) and plan to continue regular meetings to iteratively improve our efforts.

Abstract # 35

### **Reproductive Health Training Assessment in Pediatric Residency Curriculum**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Competencies, Curricular Innovation, Evaluation of Programs

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE:** To assess the current state of reproductive health education among pediatric residents.

**BACKGROUND:** Despite the mandatory 1-month adolescent medicine rotation, many pediatricians feel unprepared for adolescent care. Freed et al. reported 17% of pediatricians believed they were well trained for adolescent care whereas 65% believed they were well trained to care for infants. Furthermore, pediatricians report a lack of gynecologic training. Adolescent reproductive health education has been emphasized by medical societies, however availability and delivery of reproductive health opportunities within pediatric residency programs is largely unknown. **METHODS:** This IRB approved pilot study was modeled after an Internal Medicine study that evaluated the program's directors assessment of resident education in women's health. Six pediatric residency program directors were invited to complete the pilot Qualtrics survey via email; 5 of 6 completed the survey. **RESULTS:** The locations of these 5 pediatric residency programs included regions of the West, East and South United States. Results show HIV, PreP therapy, Long-acting reversible contraceptive use and pregnancy options were ranked highly important for residents to gain competence in, however these same topics were not taught within the resident curriculum. Notably, no pediatric program used reproductive health online modules. Lastly, the majority (3 out of 5) programs reported that they have concerns surrounding changes to state/local policies that may impact training in adolescent reproductive health. **DISSEMINATION:** Next steps include the current distribution of the survey to all pediatric residency programs, to collect data, and disseminate the findings in a medical education journal and related conferences. **REFLECTIVE CRITIQUE:** Based on recent feedback from the Association of Pediatric Program Directors, the Educational Scholarship Conference and review from adolescent medicine colleagues, we have made the survey more concise and have tailored the survey for solely residency adolescent medicine rotation directors.

## Abstract # 36

**A Precision Dosing Tool to Facilitate Clinical Pharmacokinetics Learning in the 2018 and Beyond Pharmacy Curriculum**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Competencies, Computers and Technology, Patient Care

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

A Precision Dosing Tool to Facilitate Clinical Pharmacokinetics Learning in the 2018 and Beyond Pharmacy Curriculum **PURPOSE:** The primary project objective is to compare two ways of teaching clinical pharmacokinetics (PK) to pharmacy students. We hypothesize the new method will increase performance on summative examinations and knowledge retainment during experiential rotations better than the traditional method. **BACKGROUND:** Clinical PK remains a challenging topic. Self-evaluations and preceptor feedback consistently reflect this sentiment. Basic PK is taught with an overwhelming focus on equations and manual calculations and does not reflect real-world and practical application. A gap to address is how to effectively translate basic PK knowledge to clinical PK application for patient care. InsightRX is a web-based tool that assists clinicians with therapeutic drug monitoring (TDM). By leveraging the sandbox environment, it is possible to introduce students to this tool and apply it to patient cases. **METHODS:** This is an observational study of two pharmacy cohorts in 2020-21. The traditional teaching method includes lectures and calculation problems. The comparative method combines this with the dosing tool. Optional pre/post surveys will be administered to assess reported self-efficacy with clinical PK application. Responses will be correlated with examination performance. The same survey will be administered three months into their final rotation year. These responses will be correlated with preceptor feedback on their readiness with TDM on these rotations. Faculty will conduct thematic analyses. **EVALUATION PLAN:** Assessments that will indicate curriculum effectiveness include examination performance and rotation preceptor evaluations. **DISSEMINATION:** These results will be submitted to the American Association of Colleges of Pharmacy Annual Meeting and manuscript to a medical education journal. **REFLECTIVE CRITIQUE:** UCSF School of Pharmacy Faculty Council has reviewed and approved this proposal. We have also sought feedback from other departments and revised our methods accordingly.

## Abstract # 38

**Mentoring Across Differences**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Cultural Competence, Diversity, Equity and Inclusion, Mentoring

**Category:** Curriculum Development

**Abstract:**

**Purpose:** To educate faculty how to effectively mentor diverse students **Background:** The demographics of our society are rapidly evolving and the makeup of our medical school student bodies reflects this, with increasing diversity of ethnicity, race, socioeconomic status, abilities, sexual orientation and gender identity. Nationwide, medical school faculty are a much less diverse group. Data show that outcomes for patients are better when working with physicians from similar racial, cultural and linguistic backgrounds. If our goal is to retain a cadre of bright, innovative, diverse students to become faculty and physicians in all specialties, and who reflect the makeup of the populations they serve, we need to reach out across differences to mentor, sponsor, and advocate for these students **Methods:** We designed an interactive workshop for the 2020 WGEA meeting to educate faculty on the importance of diversity, equity, and inclusion (DEI) in healthcare and to recognize the impact of oppression, implicit bias, and micro-aggressions on students. Faculty will develop skills of deep listening, empathy, perspective taking, and allyship by working through challenging mentoring cases of difference through role playing and small group discussion. Lastly, they will develop a goal specific to advancing DEI that can be presented to home institution leadership. **Results:** The effectiveness of the workshop will be assessed with a brief 5 minute survey to understand the participants knowledge of DEI administered at the start and the end of the workshop. We will also have an evaluation form that participants will fill out at the end. **Discussion:** We will present an overview of the workshop along with the results of the pre and post workshop survey and the evaluation form to determine the effectiveness of the workshop. **Reflective critique:** We will discuss feedback received from the workshop and our plans for modifying the content for future workshops.

## Abstract # 39

**Establishing training in basic bronchoscopy at the junior surgery resident level**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Curricular Innovation, Simulation

**Category:** Curriculum Development

**Abstract:**

**PURPOSE:** To describe the development and interns' perceptions of a skills lab session using a porcine heart/lung model to introduce bronchoscopy and further knowledge of tracheobronchial anatomy.

**BACKGROUND:** Training in bronchoscopy varies widely by institution.(FCCP et al., 2015) At UCSF we use an apprenticeship model, which may adversely affect patients, (Stather et al., 2013) while the use of inanimate models are successful in safely teaching bronchoscopic skills. (Blum et al., 2004) Establishing a safe and effective curriculum would benefit our residents and patients. **METHODS:** We developed objectives for the session and selected a porcine heart/lung model often used to teach dissection principles where interns could navigate the tracheobronchial tree with a bronchoscope. Prior to the session, interns completed a survey to assess their comfort performing a bronchoscopy (rated from "not comfortable" to "comfortable without supervision"), as well as their knowledge of lung anatomy and indications for bronchoscopy. The lab included a short lecture followed by guided practice on the porcine lung. Following the lab, interns repeated the survey. **RESULTS:** Of the 38 interns, 26 completed the pre-lab survey, 29 attended the lab, and 18 completed the post-lab survey. Compared to pre-lab, interns stated they felt comfortable performing a supervised bronchoscopy (n=14 vs. 5), could identify indications for bronchoscopy (13 vs. 12), and could correctly name all segments of the lung (4 vs. 1). **DISCUSSION:** We have implemented bronchoscopic training for our surgery residents who indicate improvement based on the session. The porcine model works well to introduce basic endoscopy skills and reinforce anatomy. We plan to include bronchoscopy training as a routine part of the porcine dissection sessions. **REFLECTIVE CRITIQUE:** Feedback was obtained from the interns, the lab director, and surgical education faculty. Residents enjoyed the session, but there is room for improvement and growth. A follow-up session emphasizing anatomy would be helpful, as would a more formal evaluation of bronchoscopy skills.

## Abstract # 40

**Novel interprofessional experience for first year medical students**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Career Choice, Curricular Innovation, Interprofessional Education, Patient Care

**Category:** Curriculum Development

**Abstract:**

**Purpose** To expose medical students early to interprofessional team collaboration while supporting career exploration and communication skill learning **Background** The healthcare system increasingly utilizes interprofessional teams to deliver optimal care. Students often have limited exposure to these teams before reaching their clinical years. The goal of this interprofessional activity is for first-year medical students to gain a better understanding of the importance of interprofessional collaboration in the clinical setting and provide an opportunity for students to learn more about healthcare professionals contributing to patient care in a specialty of their choice while practicing communication skills. **Methods** Sites were selected that have robust interprofessional collaboration and the ability to accommodate students for a 1/2 day experience. Students attended a team meeting, interacted with team members caring for patients, interviewed team members, and participated in a structured debrief session. A faculty and student guide was used with sample interview questions and questions for reflection and discussion in the debrief session. Inpatient and outpatient multidisciplinary team settings at 4 different hospitals and in the home setting were used. Students signed up for their experience of choice based on early career interests. A qualitative student evaluation was performed at the end of the experience to provide feedback about the program. **Results** 48 half day experiences were created for the students encompassing over 30 different specialty teams. Students and faculty were very engaged in the experience and the debrief reflections were rich. Students evaluated the session highly and wished for more. **Discussion** A strength of this innovation is combining interprofessional team learning with communication skill development and career exploration. Limitations include challenges coping with an unexpected strike and popular sites filling up quickly with student sign ups **Reflective critique** The design of this experience is easily transferrable to any interprofessional team setting or school

Abstract # 41

**The Missing Piece in URM Student Research Training Programs: Addressing Identity Dissonance in Students' Socialization to Scientific Identity**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation

**Category:** Curriculum Development

**Abstract:**

**Purpose:** We propose broadening the focus of research training programs for underrepresented in medicine (URM) students to include awareness, training, and evaluation of scientific identity and identity dissonance. **Background:** Efforts to increase the number of URM students who pursue careers in academic medicine have focused on educating students about the research process and building their self-efficacy as researchers. However current training programs overlook the socialization processes at play in students' path to academia. Socialization processes experienced by URM students interested in research are impacted by identity dissonance, which results from conflicts between their budding scientific identity and their social identity (e.g., personal/cultural backgrounds) within the context of institutional and structural shortcomings. **Methods:** We draw on evidence and conceptual frameworks from science, technology, engineering and mathematics, higher, and medical education to propose that research training programs for URM medical students include (1) culturally competent mentoring and sponsorship activities aimed at addressing identity dissonance in scientific identity formation, (2) self-reflection activities which mitigate identity dissonance by allowing students to deconstruct their former identities and reflect on their evolving professional identity, which may have room for a scientific self, and (3) evaluation of these educational efforts which address the oft-overlooked misalignment between student social and scientific identities. **Discussion:** Increasing the number of URM students who pursue academia requires a closer look at the environments wherein socialization into scientific practices takes places. As institutions deploy and strengthen diversity and inclusion efforts, they must consider interventions that address factors internal to the individual which may stifle their path to academia. **Reflective Critique:** We have shared our project with diversity researchers and leaders at UCSF and have incorporated their feedback into evolving drafts.

## Abstract # 42

**Strengthening an interprofessional curriculum to improve team-based HIV care in Sub-Saharan Africa using Kern's model for curriculum development**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Global Health, Interprofessional Education

**Category:** Curriculum Development

**Abstract:**

**Purpose:** To describe the review process for improving an interprofessional, discussion-based HIV care curriculum (STRIPE HIV). **Background:** The quality of HIV care in sub-Saharan Africa (SSA) is undermined by suboptimal interprofessional collaboration (IPC). In 2019, educators from UCSF and 20 training programs in SSA implemented an HIV training program which sought to enhance clinical knowledge and IPC among early-career health care professionals. Using Kern's curriculum "maintenance" and "enhancement" framework as a guide<sup>1</sup>, we collected qualitative and quantitative feedback from partners in SSA to identify gaps in this original curriculum, and used evidence-based educational strategies to address them. **Methods:** The following curricular gaps were identified: insufficient emphasis on IPC, too many low-rigor learning objectives, lack of variation and interactivity of teaching strategies, and misalignment of objectives with learning activities and assessments. Our focused improvements in the curriculum therefore included modification of 28 learning objectives (increasing rigor per Bloom's taxonomy, increasing focus on IPC, and aligning language with updated learning activities), addition of 24 interactive teaching strategies, revisions to 9 assessment questions, and additional assessment of 19 formerly unassessed objectives. **Evaluation Plan:** We will repeat the qualitative and quantitative feedback collection process and assess the impact of the curricular changes by comparing pre- and post-intervention data. We will also evaluate learner growth more precisely due to the updated assessment questions. **Dissemination:** We will disseminate our updated curriculum to partner institutions and sensitize educators at these sites to revisions. We will disseminate findings from our evaluation plan in peer-reviewed global health and education journals. **Reflective Critique:** We received feedback from faculty in the UCSF Health Professions Education Pathway and the UCSF Education Scholarship Conference (ESCAPE).

Abstract # 43

### **Evaluation of a Primary Palliative Care Curriculum for Neurology Residents**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Health Care, Interprofessional Education, Medical Humanities, Patient Care, Quality Improvement, Other: please describe in text field below

**Category:** Curriculum Development

**Abstract:**

**Purpose:** To evaluate a primary palliative care curriculum for neurology residents that aims to improve advance care planning (ACP) for inpatients. **Background:** Neurology residents spend most of their training caring for hospitalized patients with serious, life-limiting illnesses. High-quality ACP discussions are critical to ensuring goal-concordant care in these high-risk patients. **Methods:** Entering PGY-2 neurology residents at UCSF will complete a primary palliative care education course, which was developed in collaboration with the UCSF MERI Center for Education in Palliative Care and the Department of Neurology. This project is part of a UCSF Medical Center-wide initiative to improve ACP for “high risk inpatients”, defined as individuals who are (1) 75 years of age or older, (2) have a qualifying advanced illness diagnosis, or (3) are terminally ill (< 6-month life expectancy). **Evaluation Plan:** Effectiveness of the project’s intervention will be determined by comparing the percentage of high-risk patients who received “clinically meaningful ACP” before and after the primary palliative care training. “Clinically meaningful ACP” is defined as 1) a completed advance directive scanned into the EMR; 2) a completed POLST scanned into the EMR; or 3) documentation of an ACP discussion. **Pre-intervention data** showed that over a 3-month period (11/1/2018-1/31/2019), there were 60 “high risk inpatients” on the neurology service. While 27% had an advance directive or a POSLT previously scanned into the medical record within the past 8 years, none had a documented ACP discussion. **Dissemination:** Results from this evaluation will be presented at the International Neuropalliative Care Society annual meeting and will be published in a high-impact peer-reviewed journal. **Reflective Critique:** A survey link will be sent to neurology residents after completing the course in order to get anonymous feedback. Pre- and post-testing of attitudes towards palliative care and knowledge of palliative care will provide additional feedback.

Abstract # 45

### **Implementation of a Virtual Microbiology Laboratory to Enhance Learning for the 2018 and Beyond Curriculum**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Basic Science Education

**Category:** Curriculum Development

**Abstract:**

**PURPOSE:** Our curriculum involves a novel way of teaching clinical microbiology via a virtual laboratory comprised of recorded videos, exercises, and discussion. **BACKGROUND:** UCSF pharmacy students currently learn concepts in microbiology through a combination of didactic coursework and laboratory sessions. While highly rated by students, these laboratory sessions are extremely resource- and time- intensive. A virtual lab has the potential to require fewer resources over time while providing sufficient preparation to apply microbiology concepts. **METHODS:** Students will view a video depicting the clinical microbiology laboratory process and complete interactive computer simulations that involve virtually streaking an agar plate, conducting broth microdilution, and interpreting susceptibility results. Students will then participate in a 2-hour case-based small group discussion on higher-order clinical microbiology concepts. All students will be invited to complete a post-session evaluation aimed at assessing self-reported achievement of session objectives and collecting feedback. **EVALUATION PLAN:** Student ratings of course materials and self-perceived achievement of session objectives will indicate whether we've achieved our intended curriculum goals. **DISSEMINATION:** If positively received, we would like to share our curriculum with other UCSF health professional schools. By presenting at the UCSF Educational showcase, we can develop contacts for possible inter-school dissemination. **REFLECTIVE CRITIQUE:** UCSF School of Pharmacy Faculty Council has reviewed and approved this proposal.

Abstract # 46

**Race-Based Caucusing for Pediatrics Residents**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Cultural Competence, Curricular Innovation, Diversity, Equity and Inclusion, Reflection

**Category:** Curriculum Development

**Abstract:**

**Purpose:** To create a space for residents to explore race and privilege by piloting race-based caucusing (RBC). Our intention was to identify an approach to improve inclusion and belonging of underrepresented in medicine (UIM) trainees. **Background:** Almost half of Pediatrics residents in the University of California, San Francisco (UCSF) 2019 entering class identify as UIM. Transforming the learning environment for UIM trainees into a more inclusive space is an avenue for improving belonging, productivity, and retention in academic medical centers (as cited in Person et al, 2015). RBC, a forum where individuals of the same racial group meet to discuss race and privilege, is a promising tool to foster inclusion (Blitz & Kohl Jr, 2012). **Methods:** We piloted RBC in our residency program in the 2019-2020 academic year with two groups: one for residents who identify as white and one for residents who identify as people of color (POC). Quarterly RBC sessions occur simultaneously in adjacent rooms. Caucuses are led by experienced facilitators. We conducted an online, anonymous survey of all pediatric residents after the first three sessions to assess the impact of the pilot. **Results:** 31% of our 84 residents completed the survey. 58% of survey respondents attended at least one RBC session. 67% of attendees identified as POC. 100% of attendees rated their session as at least a 4 out of 5 in terms of usefulness (with a rating of 5 as extremely useful). 96% of survey respondents identified the timing of the session/their work schedule as a barrier to attending at least one RBC session. The majority of respondents (85%) felt it was important that RBC is offered in the future by our program. RBC was highly-lauded among participating residents and highly-desired among residents who could not participate. Most residents were open to including fellows and non-pediatrics residents but felt faculty should have separate RBC. Future opportunities include finding optimal meeting times for RBC, expanding RBC to include fellows/non-pediatrics residents, and assessing RBC's impact on inclusion and belonging.

Abstract # 47

### **Antimicrobial Stewardship for Pharmacy Students and Medical Students - A New Interprofessional Learning Experience**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Interprofessional Education, Patient Care

**Category:** Curriculum Development

**Abstract:**

**PURPOSE:** The goal of this curricular innovation is for pharmacy and medical students to develop an evidence-based approach to using antimicrobials that draws upon the expertise of different health professionals.

**BACKGROUND:** The CDC recommends that health facilities develop an interprofessional antimicrobial stewardship program (ASP) that includes physician and pharmacist co-leaders(1). Educating students about stewardship in an interprofessional environment can provide a more authentic simulation of practice.

**METHODS:** This interprofessional learning experience was formed by making substantial changes to two existing undergraduate electives: 1) the 3rd year ID Advanced Pharmacy Practice Experience (ID APPE) in the School of Pharmacy and 2) the 3rd year Enhancing Antibiotic Expertise CIE in the School of Medicine. This new learning experience will involve pharmacy and medical students working in pairs to complete the following activities: -- ID Pharmacy Rounds: pre-rounding and presenting patients --Microbiology Lab: visiting the lab and completing a worksheet to direct learning --ASP Rounds: pre-rounding and presenting patients --Presentation: student pairs will draw on each other's knowledge to present a case from the rotation **EVALUATION PLAN:** Evaluation will be centered around the first three levels of the Kirkpatrick four-level model: --Reaction: a) anonymous SOM and SOP data from students evaluating the quality of the course --Learning: a) pre- and post-course MCQs, b) antimicrobial lab worksheets, c) Qualtrics survey to assess pre- and post-course attitudes and knowledge of interprofessional approaches to selecting antimicrobials --Behavior: a) student observation, b) 3mo follow-up survey regarding changes in practice **DISSEMINATION:** We will disseminate our curricular approach and the results of our evaluations as an abstract at an educational or ID-themed conference and subsequently in a peer reviewed journal. **REFLECTIVE CRITIQUE:** The course directors will review student evaluations at least quarterly with the aim of strengthening the course in response to feedback.

Abstract # 48

**Implementation and Assessment of a Regional Fellow/Faculty Exchange Program to Promote Pediatric Anesthesia Fellow Professional Development**

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**Area(s) abstract covers:****Domain(s) addressed:** Curricular Innovation, Interprofessional Education, Longitudinal Educational Activities, Mentoring**Category:** Curriculum Evaluation/Education Research**Abstract:**

**BACKGROUND:** Junior faculty in academic medicine often struggle with establishing their careers and have low promotion and high attrition rates. This has been attributed to lack of support and mentorship. There are no professional development programs that specifically target both fellows and junior faculty. To fill this gap we developed a reciprocal fellow/faculty exchange program called the Fellow/Faculty Visiting Scholars in Pediatric Anesthesia Program (ViSiPAP) to “jumpstart” the academic careers of both fellows and junior faculty. This study reports on the implementation and evaluation of this program. **METHODS:** Fellow/Faculty ViSiPAP was developed at UCSF in 2017 and initially involved exchanges with UC Davis and Stanford. Each pediatric anesthesia fellow was paired with a junior faculty mentor. Both spent the day as visiting scholars, meeting with faculty and fellows and giving a lecture at the hosting institution. Post-participation surveys were sent to all visiting scholars in 2018 and 2019 to assess ViSiPAP's impact. **RESULTS:** To date, 20 pediatric anesthesia fellows participated in ViSiPAP and 80% completed a survey. Results indicated that ViSiPAP enhanced fellow and faculty well-being, provided opportunities for networking and collaborating, and provided additional invitations for scholarly work. Fellows stated that the program assisted with their transition from trainee to faculty and described participating in ViSiPAP as a highlight of their training. **DISCUSSION:** Fellow/Faculty ViSiPAP is a successful professional development program for both fellows and faculty. These exchanges are simple to organize, inexpensive and time efficient. An essential component of Fellow/Faculty ViSiPAP is the mentor-mentee relationship. This fellow/faculty dyad is a novel approach to fellow professional development. We are continuing to improve the program based on survey feedback with the goals of expanding the program nationally and to other specialties. **REFLECTIVE CRITIQUE:** Fellow/Faculty ViSiPAP requires time, money, effort and support from departmental leadership.

## Abstract # 49

**An Interprofessional Approach to Training Students in the Treatment of Opioid Use Disorder**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Health Care, Interprofessional Education, Patient Care

**Category:** Curriculum Development

**Abstract:**

**Purpose:** To increase access to treatment of opioid use disorder (OUD) we created an interprofessional (IP) course to train future nurse practitioners (NPs) and physicians (MDs), allowing them to apply for the DATA waiver concurrent with their DEA license. **Background:** Despite effective treatments, OUD is undertreated. A significant factor is that few practicing providers have been trained to offer treatment. To obtain the DATA waiver to prescribe treatment, MDs require 8 hours and NPs require 24 hours of training. Providing certification training and clinical experience to students before they practice is a novel approach. **Methods:** The faculty team created an elective course for MD and NP students that provided 24 hours of training in the treatment of OUD. Online curriculum developed by the American Society of Addiction Medicine was used for half of the course. A unique curriculum focused on IP treatment delivery was used for the remainder. Didactics included basic instruction from NPs and MDs, with content on stigma and attitudes from a psychologist. Clinical decision-making utilizing team-based care was honed through faculty-led group case discussions. Students were placed in community sites for observation of OUD treatment by IP teams. **Results:** 77 NP and MD students participated in the initial curriculum. Fifty-three (69%) completed requirements for their DATA waiver. 62.8% of participants were satisfied or very satisfied with the quality of the training. Participants increased their positive responses to working with drug users post curriculum. Ongoing surveys will assess whether students obtain the waiver and use it to prescribe treatment in their clinical setting. **Discussion:** A novel IP course on treatment of OUD was well received by future NPs and MDs. The majority will now be able to prescribe treatment for OUD upon licensure. Dissemination of the curriculum and outcomes will occur at targeted conferences and through publications. **Reflective critique:** Learner preference for case discussion over online learning is informing the next edition of the course.

## Abstract # 50

**See one, do one, all while learning one: UCSF surgery quality improvement curriculum**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Competencies, Curricular Innovation, Feedback, Health Care, Health Systems, Leadership , Longitudinal Educational Activities, Patient Care, Quality Improvement

**Category:** Curriculum Development

**Abstract:**

**Purpose:** Quality improvement (QI) has been challenging to integrate into procedural training programs, in part because of the need to teach a broad range of skills in limited time. The purpose of this abstract is to describe a longitudinal, resident driven approach to QI curriculum. **Background:** It is well established that experiential learning, if feasible, is far more efficient than passive learning, but this approach relies on longitudinal and active interactions between learners and faculty. Therefore, we propose a plan to improve resident knowledge and engagement in QI by implementing a longitudinal curriculum centered around the existing GME QI Program. **Methods:** We developed a longitudinal curriculum for surgical residents (5 sessions) combining didactic, flipped classroom, and experiential learning. The sessions are aligned with the Incentive Program timelines. The deliverable is a successful residency project at both sites. We developed a facilitator guide including short explainer videos to ensure that the curriculum can be used in perpetuity by the Department of Surgery (DoS). Residents will be exposed to the curriculum 5-7 times over the course of their residency. **Results/Evaluation Plan:** The program will perform pre-post evaluation of resident knowledge, and attitudes about QI and be evaluated on the successful development of the GME QI Incentive Programs. **Discussion/Dissemination:** Early feedback from the sessions has been positive. Further reflection will be possible after the remaining sessions have concluded. **Reflective Critique:** The interactive, flipped classroom approach structured around a health system deliverable has been an effective strategy for the DoS to implement a QI program. We anticipate that it will introduce 60+ residents to QI basics. Those desiring deeper involvement can elect to take leadership roles in the curriculum.

Abstract # 51

**The MERI Center for Palliative Care Education at UCSF/Mount Zion: Strategic Education in Primary Palliative Care**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Curricular Innovation, Health Systems, Quality Improvement

**Category:** Curriculum Development

**Abstract:**

**Purpose:** To implement educational interventions to promote "primary" palliative care (PC). **Background:** "Specialty" PC improves clinical outcomes and utilization, but is limited by workforce shortages. One solution is Primary PC (PPC) which entails educating all frontline clinicians in the basics of PC. However, learning may be limited by time pressures, difficulty customizing PPC to particular clinical settings, and clinician burnout. **Methods:** We developed a 4-part intervention for promoting Primary PC at UCSF/Mount Zion clinical practices. (1) Champions from the practices were identified to suggest educational approaches likely to be effective; (2) Champions are supported to pursue serious illness quality improvement (QI) projects; (3) Staff and clinicians receive educational support with communication tips as well as financial support for continuing education; and (4) Faculty, residents, patients, and caregivers are supported with resiliency skills training. **Results:** Champions were identified in 10 of 12 (83.3%) practices, with QI projects now in various stages of development. In DGIM, promotion of advance care planning resulted in an increase in Advance Directive completion from 30 to 42%. Neurology instituted a resident serious illness communication curriculum. Monthly email communication tips are delivered to all Zion faculty and staff. Half of participating practices now are receiving resiliency skills training. **Discussion:** Educating busy clinicians in PPC is challenging. We are implementing a 4-part strategy designed to integrate local Champions between their participating practice and PC, and to support Champions' work on practice QI projects. Avoiding burnout/promoting resiliency is offered as a prerequisite to allow clinicians and staff to care best for seriously ill patients and their families. **Reflective Critique:** Champions offer feedback monthly about what is needed in the practices and how interventions are being received. As a result of early feedback, we realized burnout in the practices was precluding new learning and implemented the resiliency skills training.

## Abstract # 52

**UCSF Latinx Center of Excellence's efforts to review educational interventions focused on underserved populations.**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Competencies, Cultural Competence, Curricular Innovation, Diversity, Equity and Inclusion, Patient Care, Professionalism, Reflection

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Abstract Format Purpose:** To describe the types of educational interventions and curriculum, and resulting evaluation outcomes focused on the care of underserved populations particularly Latinx communities  
**Background:** While the upcoming 2020 census projects a more diverse US population, medical schools have slowly adapted their curricula to reflect these changes and appropriately prepare their trainees to address the needs of underserved communities. An important first step in the curriculum development process must involve describing the current state of educational interventions and curriculum and the resulting knowledge, skills, and attitudinal outcomes. **Methods:** We used a scoping review and first determined a list of relevant terms. To be included, articles must address issues faced by underrepresented communities in a healthcare setting, outline an intervention that educates medical students or residents on how to treat these patients, include qualitative or quantitative results, be published between 2009 – 2019, and focus on American based residency programs. Through a multi-step search of the PubMed, Web of Science and Embase databases we produced an initial list of 485 articles. **Results:** We identified two types of educational interventions: curriculum, which focused on cultural competencies, meant to increase attitudes and knowledge about vulnerable populations and Medical Spanish competencies. This curriculum is discussed mainly in the context of undergraduate medical education. **Discussion:** From our initial review, we conclude that there is no consensus on the best intervention method of the timing of educational interventions to better prepare students. This underscores the reality that medical schools have slowly adapted their curricula to reflect population changes and appropriately prepare their trainees to address the needs of underserved. **Reflective Critique:** As we continue the literature review, we will seek feedback from faculty from the Latinx Center of Excellence (LCOE) as well as from ESCape teams.

## Abstract # 53

**The students have spoken: results from a preclinical surgical curriculum pilot**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Communication, Curricular Innovation, Evaluation of Programs, Mentoring, Research

**Category:** Curriculum Development

**Abstract:**

**PURPOSE:** Assess the efficacy of a surgical curriculum developed for the last formal preclinical block for UCSF second-year medical students. **BACKGROUND:** Many institutions have redesigned medical school curricula, shifting away from the traditional format by introducing clinical experiences at earlier timepoints. These models often underrepresent surgical clinical experiences. As such, it is essential for surgical departments to actively engage in medical student preclinical education. The UCSF Department of Surgery implemented a pilot during the last preclinical block for second-year medical students to help prepare them for the surgical clerkship. **METHODS:** Faculty, residents, and medical students developed a curriculum based on needs identified by student feedback, set objectives, and designed 3 sessions comprised of case-based learning, panels, and didactics to help prepare preclinical students for the surgery clerkship. Sessions discussed the key differences between medical and surgical patient presentations, tips for success, and approaches to common surgical problems; they were assessed with a course evaluation survey. **RESULTS:** Fifty-eight students participated. A validated clerkship-readiness survey was administered at the start of the session; 99% felt unprepared to start a surgical clinical rotation, including insecurity in anatomy knowledge. Post-session feedback was unanimously supportive of the formal integration of the sessions into the preclinical curriculum, and 100% of the students felt more prepared for the surgical clerkship. The response rate for the post-session survey was 34%; of these, 44% had never attended a surgically focused course/elective, and 78% believed the current preclinical curriculum provided inadequate exposure to surgical concepts. **DISCUSSION:** Overall, the initial pilot was well received. There is a need to include a formal surgical component to prepare students for surgical rotations in the preclinical years. Further study should assess short- and long-term student attitudes toward surgery after curriculum implementation. **REFLECTIVE CRITIQUE:** ESCape

Abstract # 54

### **3D Printing for Health Science Students**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Computers and Technology, Curricular Innovation, Simulation

**Category:** Curriculum Development

**Abstract:**

**Purpose:** The purpose of this ten- week elective course is to educate first-, second-, or third-year health students about 3D printing from CT scans. **Background:** By combining the multimodal inputs of touch and vision, a higher level of spatial learning can be achieved, consistent with the concept of “touch to comprehend.”<sup>1</sup> Designing through 3D software has also been shown to improve students’ spatial visualization.<sup>2</sup> This elective aimed to be more constructivist in nature to encourage interactive learning of software and for the individual student to develop ideas for potential future applications.<sup>3</sup> **Methods:** The course is composed of six 2-hour sessions. During four working sessions students follow the reader chapter of the corresponding software. As the reader is largely self-directed these sessions serve as active learning sessions to provide students with dedicated time to work on their models and to ask questions. Sessions alternated between workshops and guest lectures from UCSF. Our diverse group of guest speakers provided insight into how they utilize 3D printing in their careers, as well as potential future applications for 3D printing. **Results:** Students completed a pre/post assessment of 3D printing confidence, post-course satisfaction survey, and an individualized anatomical print. All students improved significantly on all 6 assessment questions. **Discussion:** Students reported their surprise at how they could easily learn a new seemingly intimidating skill in a short amount of time. Limiting factors for the elective course were obtaining de-identified, high quality CT scans as well as class size limited by 3D printer availability. Results were shared at the 2019 WGEA conference. Faculty plans to disseminate the curriculum through peer-reviewed, open access journals. **Reflective Critique:** Student feedback was collected using an online evaluation and in-class discussion. To improve student access to 3D printers, two additional 3D printers were made available. Faculty will obtain additional DICOM sets for student practice.

Abstract # 55

### **Education on Financial Capacity in Graduate Medical Education**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Health Care, Primary Care

**Category:** Curriculum Development

#### **Abstract:**

**PURPOSE** 1) Assess the current state of education on financial capacity (FC) in an internal medicine (IM) residency. 2) Develop, implement, and study an educational curriculum on FC for IM trainees. **BACKGROUND** Financial capacity, or the ability to manage one's finances in a manner consistent with self-interest, is fundamental to the ability to live independently. Impaired FC can leave people vulnerable to financial abuse and can have negative impacts. Unfortunately, impaired FC is often only detected after financial problems develop. There is no literature on FC in medical education. **METHODS** A targeted needs assessment on the state of FC education occurred through semi-structured interviews with UCSF IM chief residents. Data were analyzed by thematic analysis and descriptive statistics. A retrospective pre/post-test and survey on practices around FC will be distributed with the educational curriculum, and a six-week follow up survey will be sent to all IM residents to assess for practice change. **RESULTS** Prior to this educational curriculum, none of the 8 chief residents had received formal training on FC. Few chief residents had discussed finances with their patients, and none had a practice to screen for FC or abuse. All chief residents could recall at least one patient they had cared for who likely had impaired FC. All agreed that more education is needed on FC. The needs assessment highlighted gaps in knowledge and skill that informed the creation of the educational curriculum. The curriculum will be implemented during IM noon conference. **DISCUSSION** This study demonstrated a lack of formal education on FC for IM trainees. Early detection of impaired FC hinges on informed providers, yet few resources are dedicated to provider-education. This novel curriculum seeks to address this gap by providing IM trainees with knowledge and resources to address FC with their patients. Next steps include poster presentation at the Annual Geriatrics Society and manuscript submission. **REFLECTION** Geriatricians and FC experts reviewed and provided feedback for this curriculum.

Abstract # 56

**A New Curriculum for the Doctoral Seminar within the UCSF Global Health PhD Program**

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**Area(s) abstract covers:****Domain(s) addressed:** Competencies, Curricular Innovation, Global Health, Research**Category:** Curriculum Development**Abstract:**

**PURPOSE:** The Doctor Seminar serves as a longitudinal opportunity for dissemination of a core curriculum. Our purpose was to revise the curriculum to meet student needs and competencies. **BACKGROUND:** The Doctoral Seminar series is designed to provide professional development and career training in global health research, and enable students to advance their practical skills to conduct high impact research. Doctoral students write 3 publishable papers for their dissertation but rarely are explicitly taught these skills. We developed a new curriculum to address this gap. **METHODS:** We critically reviewed Doctoral Seminar curricula and evaluations from the first two PhD cohorts; redefined learning objectives based on expected outputs and global health competencies(1,2); added skill-based training resources to meet refined learning objectives. **RESULTS:** The new Doctoral Seminar meets 2-hours weekly through the first two years of the program. Year 1 focuses on 1) laying groundwork for students to successfully navigate their PhD (developing academic plans, IDPs, mentoring teams) and 2) professional development training on manuscript preparation. To gain practical skills, students negotiate finding a dataset, conduct secondary data analyses, develop a research question, write a manuscript, peer review, and publish. This “year 1 manuscript” is not a part of their dissertation, rather an applied exercise to navigate the writing and publication process. Year 2, students develop skills in grant writing, IRB applications, and effective communication required for careers in global health. These elements are essential for preparing students to pass their Qualifying Exams and provide practical skills to embark on independent research. **DISSEMINATION:** Findings will be presented to our core global health faculty, and written up for BMC Medical Education journal. **REFLECTIVE CRITIQUE:** We solicit feedback on our curriculum and theoretical approach from AME members, global health core faculty, program directors from other Social/Population Sciences PhD programs, current doctoral students and alumni.

## Abstract # 57

**Development of an Inquiry Curriculum Integrating Statistics and Study Design with Core Sciences in a Doctor of Pharmacy Course**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Inquiry, Quality Improvement

**Category:** Curriculum Development

**Abstract:**

**Purpose:** This study aimed to develop, implement, and evaluate a curriculum that integrated epidemiology, statistics and study design content with core sciences content (e.g., therapeutics) in a Doctor of Pharmacy thematic block. **Background:** Critical appraisal and application of drug therapy literature are key knowledge-based skills in pharmacy practice. Based on student course evaluation and performance, it was not well-integrated into the first iteration of the Cardiovascular Sciences and Therapeutics 10-week block in 2018. **Methods:** We developed and implemented a second iteration inquiry curriculum which integrated epidemiology, statistics and study design with Cardiovascular Sciences and Therapeutics content in a more systematic way, focusing on learning by application and practice. We administered an online survey questionnaire to assess students' perceptions of the second iteration inquiry curriculum at the end of the course in 2019. Since there were 3 questions on summative assessments that were administered to both the 2018 and 2019 cohorts, we compared the pass rate for each question between the two cohorts using a chi-squared test. **Results:** Out of 127 students enrolled, 120 (94%) responded to the survey. Over 80% of respondents agreed or strongly agreed to good integration, effective organization and sequence, and helpful application materials in the 2019 curriculum. The 2019 cohort had a significantly higher pass rate in 2 out of 3 summative exam questions when compared to the 2018 cohort (86.6% vs. 75.8%,  $p=0.037$ ; 70.9% vs. 48.4%,  $p=0.0013$ , respectively). Students identified additional practice opportunities and early communication on a final project as areas for improvement. **Discussion:** The 2019 inquiry curriculum was received favorably by students and appeared to be more effective than the 2018 inquiry curriculum in student learning. Students' feedback will be incorporated into the third iteration of the curriculum, and retention of knowledge will be assessed in the future.

Abstract # 58

### **Impact of Assessing Patient Advocacy Among Internal Medicine Block Clerkship Students**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Clinical Instruction and Performance, Patient Care

**Category:** Curriculum Evaluation/Education Research

#### **Abstract:**

**PURPOSE:** To characterize the skills and behaviors that students and faculty consider patient advocacy and how inclusion of a patient advocacy assessment item in a block clerkship impacted student and faculty behavior. **BACKGROUND:** Advocacy on behalf of patients has been embraced as a core value of the medical profession by professional organizations-; however, medical students' advocacy skills are rarely assessed during the formative clerkship year.- The internal medicine clerkship added a patient advocacy assessment item after a literature review and input from stakeholders. **METHODS:** We conducted five focus groups, three with clerkship students and two with faculty, over two years. Using a grounded theory approach, we analyzed focus group transcripts in an iterative process and developed a codebook. The identified codes were applied back to all transcripts and the results were synthesized. **RESULTS:** Students and faculty identified core patient advocacy behaviors including addressing social determinants of health; addressing patient concerns; care coordination; and, patient and team education. Patient advocacy assessment reflected the values of the institution, allowed prioritization of advocacy, provided an opportunity for feedback, and shaped professional identity formation. Challenges included variability in the team environment, inadequate observation, and lack of clarity in defining advocacy. We propose an initial model for advocacy assessment during the clinical years which considers core behaviors and values, and mitigates challenges. **DISCUSSION:** Students and faculty defined patient advocacy and its core behaviors, and described the impact of assessing patient advocacy, despite challenges, some of which are inherent to block clerkship structure. Students consistently supported continuing to assess patient advocacy, while faculty opinions were mixed. **REFLECTIVE CRITIQUE:** We received feedback on our study design through the ESCape process. We will also examine the ratings and comments from the assessments to delve further into how advocacy was rated and exemplified.

Abstract # 59

**Does a concept-focused biochemistry curriculum effectively prepare learners for clerkships?**Tracy Fulton, PhD, UCSF, [tracy.fulton@ucsf.edu](mailto:tracy.fulton@ucsf.edu); Sally Collins, MA, MSc, UCSF, [sally.collins@ucsf.edu](mailto:sally.collins@ucsf.edu)**Area(s) abstract covers:****Domain(s) addressed:** Basic Science Education, Curricular Innovation**Category:** Curriculum Evaluation/Education Research**Abstract:**

**PURPOSE** This study explores initial findings from a pre-clerkship biochemistry curriculum designed to support deep learning of concepts to enable transfer in clinical decision-making in clerkships. **BACKGROUND** Biochemistry may have the worst reputation of all the basic sciences. Physicians associate it with memorizing minutiae irrelevant to patient care (1) and students rate it lowest on the AAMC Graduation Questionnaire in how well it prepares them for clerkships (6). Yet, basic science may be beneficial in clinical reasoning when encapsulated within cognitive knowledge structures (2). Curricula that supports cognitive integration are hypothesized to improve transfer through emphasis on deep conceptual understanding (3,4). Such principles were drawn on to design a biochemistry curricula to support students' deep learning and transfer of concepts by reducing reliance on memorization. **METHODS** We conducted a thematic analysis of interviews with 10 4th-year students about their longitudinal biochemistry experience and use of biochemistry concepts during core clerkships. **RESULTS** Students endorsed a de-emphasis on memorization in the preclerkship curriculum, but rarely reported using biochemistry concepts in clerkships. Biochemistry was considered either absent from clerkships or used in response to preceptor questions. In studying for Step 1 after clerkships, students then relied on fact memorization rather than conceptual review. **DISCUSSION** Students' perceptions of not using biochemistry in clerkships may be due to contextual factors (e.g. time constraints or preceptor interest) or because encapsulation of preclerkship knowledge resulted in using conceptual understanding without realizing. Perceptions may also have been influenced by reliance on memorization for Step 1 after clerkships. These factors should be considered in designing preclerkship curricula to better enable transfer of biochemistry concepts to the workplace. **REFLECTIVE CRITIQUE** TF's doctoral work in medical education will build on this study; posters at WGEA and AAMC will precede this presentation.

Abstract # 60

**Dissemination of Live-Online Caregivers Resilience Course to Caregivers of Patients with Parkinson's Disease, Parkinsonisms, and Alzheimer's Disease**

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**Area(s) abstract covers:****Domain(s) addressed:** Curricular Innovation, Patient Care**Category:** Curriculum Development**Abstract:**

**Background:** The number of patients with neurodegenerative illnesses are expected to increase dramatically over time. Family caregivers often provide prolonged care of loved ones whose symptoms may include loss of personhood, loss of identity, unawareness of illness, hallucinations, dementias, impairment of mobility, communication, cognition, shame, impulse control disorders, loss of autonomy, loss of relationships. Although family caregivers may receive limited training, they are rarely, if ever, trained in how to strengthen their own resilience and cultivate an adaptive mindset. This course offers such training to help make caregiving possible and sustainable, and to reduce burnout. **Methods:** This live-online course was provided to family caregivers of study patients with Parkinson's Disease, Parkinsonisms, and Alzheimer's Disease, as part of a study to train community neurologists in California, Colorado, and Wyoming, in primary palliative care. **Evaluation Plan:** Qualitative evaluations will be collected to assess the acceptability and suitability of this intervention with this population. Evaluation using mixed methods and a crossover design will be developed for further assessment and refinement. **Dissemination:** This course will be offered next through the MERI Center for Education in Palliative Care at Mt Zion/UCSF to family caregivers of patients served by the Mt Zion clinical services. It will also be offered to the broader community through the San Francisco Family Caregivers Alliance, which serves six neighboring counties. **Reflective Critique:** In thinking about this and getting feedback, I expanded the participant reflective practices shift to a growth mindset, and I increased the frequency of participant breakout sessions to counter isolation and strengthen the experience of community.

Abstract # 62

### **Use of Modified Delphi Technique to Identify Core Trainee Competencies in Transfusion Medicine**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Competencies, Curricular Innovation, Other: please describe in text field below

**Category:** Curriculum Development

**Abstract:**

Background - Skilled and judicious practices in use of blood products decrease inappropriate transfusions, reduce risk to patients, and lower costs to hospitals. Presently there exists no universal competencies in transfusion medicine [TM] for resident trainees. Purpose - Our study aims to identify core TM topics relevant to trainees as identified by TM experts and residency program leadership across multiple departments at UCSF. Methods - We utilized a modified Delphi method to achieve expert consensus regarding core competencies in TM relevant to trainee tasks and responsibilities. Delphi consensus rounds involve sequential completion of questionnaires in which experts rank importance of curricular topics. Our expert panel includes nineteen clinical faculty in UCSF Departments of Internal Medicine, Emergency Medicine, OBGYN, General Surgery, Laboratory Medicine and Anesthesiology. Per published Delphi protocols, topics achieved consensus if identified as important by minimum content validity ratio (CVR) of 0.7 or agreement among at least 70% of panelists. Results of this aggregate ranking were shared with panelists in subsequent rounds of review to re-rank topics and come to consensus. Results - Initial rankings by expert panelists led to identification of the twenty-two core transfusion topics as relevant to trainees whose responsibilities include prescription and transfusion of blood products via minimum CVR 0.7. Topics include specific blood product indications, transfusion reactions, and alternatives. Dissemination - Results of Delphi consensus rounds and expert-identified competencies will be available to panelists and training program leadership via email and disseminated via Education Showcase. Topics will inform subsequent development and validation of a vignette-based trainee assessment tool in TM. Reflective Critique - We presented our methods to the ESCape forum in October and modified our Delphi methods to ensure feasibility. We additionally received feedback via online OpenForum and expanded our panel to include program leadership in Emergency Medicine.

Abstract # 63

**Implementation of a Pilot Video Reflection Program to Improve Oral Communication Skills**

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**Area(s) abstract covers:****Domain(s) addressed:** Communication, Curricular Innovation, Evaluation of Programs, Reflection**Category:** Curriculum Evaluation/Education Research**Abstract:**

**PURPOSE** The purpose of this study was to implement a pilot video reflection program and to assess the program by comparing communication scores in OSCEs and students' self-confidence level in communication between those assigned to video reflections and to written reflections. **BACKGROUND** Written self-reflection is a common way of reflection assignments in pharmacy education. Since oral communication skills are distinct from written communication skills, video recording self-reflection may improve oral communication skills better than written self-reflection. **METHODS** We assigned the class of 2021T to either a video (n=48) or a written reflection assignment group (n=48) in the 2018-2019 year. For weekly reflection assignments, the video reflection group recorded their self-reflection using electronic devices while the written reflection group wrote their self-reflection. During the 2018-2019 academic year we administered 2-6 OSCE stations 3 times to assess oral communication skills and identical surveys using Qualtrics 3 times to measure students' self-confidence level in communication skills over time. We combined oral communication scores in different stations on each OSCE. Then we compared the combined OSCE scores on self-confidence level in oral communications skills between the two groups by using the Wilcoxon rank sum test. **RESULTS** The video self-reflection was successfully implemented: all students completed weekly self-reflections according to their group assignments. The median combined OSCE oral percent communication scores ranged from 75-81% and was not significantly different between the groups at each time point. In addition, the median self-confidence level was 7 (IQR 6-8) and not significantly different between the groups at each time point. **DISCUSSION** Although the video self-reflection was successfully implemented, it did not significantly increase OSCE scores and students' self-confidence level in oral communications skills compared with the written reflection group. Given the favorable reception by students, we will continue to explore the video reflection.

Abstract # 64

### **The Future is Interprofessional: Introducing Clinical Students to Practicum Rotations in Interprofessional Teams**

Portia Morris, MPH, UCSF, portia.morris@ucsf.edu; Tom Donahoe, MBA, UCLA, ; Sandra Cuevas, , UCLA, ; JaDawn Wright, MA, UCSF, ; Prescott Chow, MUP, UCSF

**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Interprofessional Education

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

The Pacific AIDS Education & Training Center in conjunction with partners in Los Angeles has developed and implemented the HIV Interprofessional Education project as part of its HRSA/HAB cooperative agreement on HIV training and workforce development. The project includes Charles R Drew University School of Nursing, David Geffen School of Medicine at UCLA and USC School of Pharmacy. The overall goals of the program are to increase the quality and quantity of HIV content in each institution's IPE curriculum through mentoring of key faculty and to increase the number of competent, diverse HIV providers through team based clinical rotation practicums at 6 Ryan White HIV/AIDS clinics in LA County. Another goal is to evaluate the process and impact of the project to help determine how to sustain these HIV IPE efforts in the future. Finally, we have worked with our graduates who are motivated to specialize in HIV care to successfully find employment with understaffed Ryan White clinics in the region. Between 2016-2017 a total of 15 students participated in the IPE program practicum rotations. The students were in clinical programs to become nurse practitioners (35%), MDs (18%), and pharmacists (41%). Students were surveyed before and after their rotation about their attitudes and knowledge towards working interprofessionally to treat patients with HIV. After the rotations students were more likely to agree with statements such as "To be effective, team members should understand the roles and responsibilities of their fellow interprofessional team members" and "Learning with students from other professions will help me become a more effective health care professional". Students also reported an increase in knowledge and skills in areas such as screening for behavioral health issues, providing care to HIV-infected women of childbearing age, and discussing the effectiveness of PrEP at preventing HIV transmission with their patients. Analysis of 2017-2018 cohort of 15 students is currently being conducted, as well as analysis of faculty that participated in the project.

Abstract # 65

## **Profession and Gender Representation in Medical Emergency Training Videos: Disparities as a Cause for Bias**

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### **Area(s) abstract covers:**

**Domain(s) addressed:** Diversity, Equity and Inclusion, Health Systems, Interprofessional Education, Leadership

**Category:** Curriculum Evaluation/Education Research

### **Abstract:**

**PURPOSE:** The purpose of this study was to determine how commonly used medical emergency training videos portray healthcare professionals' roles and genders. **BACKGROUND:** Despite recognition of the benefits of interprofessional collaboration, biases and stereotypes against professionals from different backgrounds persist. This is compounded by gender bias, given the fact that certain professions are predominated by one gender over another. Commonly used educational tools may perpetuate bias by representing healthcare professionals according to stereotypes. **METHODS:** We reviewed videos from two sources (Advanced Cardiac Life Support, 2015; TeamSTEPPS 2.0, 2013). Two authors (CA and MR) performed analysis to identify an actor's gender and role. Badges, on-screen identification, or verbal cues defined roles. We calculated  $\chi^2$  to compare proportions and used IBM SPSS Statistics for Windows (v24, IBM Corp Armonk, NY) for statistical analysis. **RESULTS:** We counted 50 female and 35 male actors in the role of a health professional. We found a statistically significant difference between the proportion of women versus the proportion of men who portrayed physicians: 10% women versus 37% men ( $\chi^2 = 9.087$   $P = .003$ ). We found a statistically significant difference between the proportion of women versus the proportion of men who portrayed nurses: 32% of women compared to 9% of men ( $\chi^2 = 4.316$   $P = .04$ ). **DISCUSSION:** Our findings confirm the presence of stereotypical representation in training videos. This difference may reinforce the belief that male physicians are best positioned to be the leaders of healthcare teams, thereby perpetuating implicit biases about professional background, gender, and leadership. **REFLECTIVE CRITIQUE:** We obtained feedback by presenting at the Pediatric Medical Education Works in Progress group and modified our research question through several iterations, broadening the scope from female physicians to a broader investigation of biases in healthcare professions.

Abstract # 66

### **Design and Implementation of an Integrated, Longitudinal, and Developmental Wellness Curriculum in an Anesthesiology Residency Program**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation

**Category:** Curriculum Evaluation/Education Research

#### **Abstract:**

**Purpose:** To develop and implement a longitudinal three-year wellness curriculum including topics focused on systems change. **Background:** A recent survey of anesthesiology residents found the prevalence of burnout to be 51% with as many as 12% demonstrating signs of depression. In addition to enhancing individual wellness, experts are advocating for broader organizational change within the healthcare system to address this problem. To catalyze this change, we developed a curriculum focusing on foundational knowledge about the science of well-being as well as skills development in systems change. **Methods:** Following Kern's six-step approach to curriculum development, we identified goals and objectives for the curriculum that included establishing strategies to enhance individual well-being, and skills to prepare residents to facilitate organizational change through change management. Instructional strategies included didactics, simulation, peer-peer mentorship and small groups which were incorporated into each existing monthly sessions within Anesthesia Education Day. We administered pre and post evaluation surveys using a 4-point Likert type items on the confidence level and self-efficacy around wellness strategies. **Results:** 73 out of 76 residents participated in the curriculum and 41% completed the surveys. Our preliminary analysis showed statistically significant ( $p = .01$ ) increase in all seven items related to confidence and self-efficacy in employing wellness strategies including "undertaking a program of activities to improve your self-care" on a scale 4-point scale. Additionally, analysis of narrative feedback in the survey revealed that residents appreciated the exposure to the 'fundamentals' of wellness and valued small group discussions as a means to both share and normalize their experiences. **Discussion:** The implementation of an integrated, developmental wellness curriculum in a large residency program is feasible and contribute to positive impact. **Reflective Critique:** Based on the resident feedback, we are planning to modify the curriculum.

Abstract # 67

**Self-regulated Learning and EPA-based assessments – Initial Lessons from the UCSF Pediatric Residency Program**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Clinical Instruction and Performance, Evaluation of Programs, Feedback

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** To investigate whether an assessment system for pediatric residents based on Entrustable Professional Activities (EPAs) facilitates self-regulated learning (SRL). **Background:** The Accreditation Council for Graduate Medical Education (ACGME) mandates that programs regularly assess trainee competency. In response to this mandate, EPAs have been proposed as a more holistic and authentic workplace assessment with a focus on entrustment and autonomy. In light of this, we developed an EPA-based assessment system for the UCSF pediatric residency program. We hypothesized that EPAs provide contextualized information to trainees allowing them to engage in self-regulated learning behaviors including goal setting, self-monitoring and feedback seeking all catalyzed by desire for more independence. **Methods:** We conducted semi-structured interviews with current and recent past pediatric residents. Questions focused on how they use the EPA-based assessment system and the information it provides to them. We conducted a thematic analysis of the interview data using a constant comparison approach to identify and verify themes and sub-themes. **Results:** We conducted 10 interviews and are planning additional interviews. We coded and analyzed 8 of those interviews. While preliminary, initial themes that emerge from the data suggest that residents employ a variety of learning strategies and engage in goal setting and progress tracking behaviors, however, the relationship with EPA-based assessments is not necessarily a catalyst for this. **Discussion:** Trainees report EPA-based assessments to be useful in framing the context and content of feedback. However, this system does not appear to be a robust driver of self-regulated learning, and trainees identify more value in ongoing dialogue with invested supervisors. **Reflective Critique:** We will solicit feedback through a Pediatric Education Scholarship Works in Progress session and an ESCape session regarding our initial interpretations of the data.

Abstract # 68

**Supporting students' wellness through a longitudinal, skills-based wellness program in ARCH Weeks**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Longitudinal Educational Activities, Professionalism, Other: please describe in text field below

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE:** To describe preliminary outcomes of a wellness program addressing students' burnout, resilience, and satisfaction. **BACKGROUND** To address high rates of medical student burnout<sup>1</sup> and mental illness,<sup>1,2</sup> we developed and implemented a skills-based wellness program within ARCH Weeks (Assessment, Reflection, Coaching, Health). **METHODS** Eight longitudinal ARCH Weeks scaffold this four-year wellness program. During ARCH Week 1, students attend a didactic on preventing burnout and reflect on how to address their own wellness. Students then choose one mandatory wellness skill selective to explore during each subsequent ARCH Week. Led by local experts, examples of evidence-based selectives include mindfulness, mind-body medicine, and reflective writing. We assessed student burnout via the Maslach Burnout Inventory, resilience via the Connor Davidson Resilience Scale, and satisfaction through voluntary course evaluations (1=poor to 5=excellent). We reviewed de-identified SMART goals for content related to wellness. **RESULTS** 20/57 (35%) of students who voluntarily completed the Maslach Burnout Inventory during ARCH 1 indicated burnout in at least one domain. 19/46 (41%) students scored in the lowest quartile of resilience. 51/159 (32%) students completed course evaluations, rating selectives as helpful in understanding the importance of incorporating wellness strategies throughout their career (3.55, SD=1.17). 86/159 (54%) of students constructed a time-bound wellness goal after engaging with the program. **DISCUSSION** Numerous students surveyed early in medical school exhibited burnout symptoms and low resilience scores. With this data in mind, the ARCH week well-being program gives students opportunities to develop wellness skills soon after matriculating. That a majority of students created wellness SMART goals suggests that students appreciate the need for early and intentional engagement with wellness. **DISSEMINATION** We are presenting at WGEA and submitted to national education conferences. **REFLECTIVE CRITIQUE** We received feedback at ESCape and from the UCSF assessment team

Abstract # 69

**AUGMENTED-REALITY ENHANCED ANATOMY LEARNING (A-REAL)**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Basic Science Education, Computers and Technology, Curricular Innovation

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE** To assess Augmented Reality (AR) holograms as an educational intervention for anatomy learning. **BACKGROUND** As anatomy lab hours are being decreased across medical school curricula<sup>1</sup>, students seek resources such as the Peer Teaching Program (PTP) led by senior students to review high yield anatomy on cadaveric specimens. AR has the potential to be an effective, more accessible learning tool that engages visual-spatial skills<sup>2</sup>. **METHODS** We designed a quasi-experimental study to determine the efficacy of AR compared to PTP. There were two trials, each using one AR hologram (celiac trunk or cardiac vasculature) during a 2-hour evening PTP session with multiple stations (30min each). During PTP, students self-selected station order and were asked to participate (5-7min) at the AR station. At the AR station, students completed a pretest, interacted with AR holograms as either the 1st (AR1) or 2nd (AR2) intervention, then completed a posttest. Students were assigned to AR2 if they completed the PTP anatomy station prior to AR. We used AR2 group pretest scores to evaluate PTP1 posttest scores. Pre/Post tests were identical; one point was assigned to each correctly labeled structure. A paired-t test was used on AR1 scores to determine AR efficacy. A one-sided MannWhitney-U test was used on post-intervention scores of AR1 vs PTP1. **RESULTS** Celiac Trunk: 10 of 70 (14%) students participated. The AR1 (n=3) group yielded  $M_{pre}=2.67$  and  $M_{post}=6.33$ . Cardiac Vasculature: 17 of 70 (24%) students opted in. AR1 group (n=12) achieved a significant improvement [ $M_{pre}=6.83\pm1.27$  vs  $M_{post}=7.92\pm0.29$ ;  $p<0.01$ ]. There was no significant difference in post-intervention scores [AR1 (n=12)  $M_{post}=7.92$  vs AR2 (n=5)  $M_{pre}=7.8$ ;  $p=0.375$ ]. **DISCUSSION** AR is as effective as PTP and may be used as a substitute for anatomy education, requiring less time and resources. Knowledge retention over time will need to be evaluated by a future study. **REFLECTIVE CRITIQUE** Feedback was gathered at ESCape and consultations; we expanded methods section to illustrate design and modified results section to state data concisely.

Abstract # 70

**A pilot study to evaluate a virtual reality-based trauma curriculum for medical trainees**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Computers and Technology, Curricular Innovation, Other: please describe in text field below

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose** This pilot study aims to evaluate the acceptability and effectiveness of an adjunct virtual reality (VR) trauma curriculum for medical trainees. **Background** Providing high-quality trauma care not only requires mastery of clinical surgical techniques, but also soft skills such as communication, empathy and teamwork in order to effectively coordinate high stakes patient care. VR is a promising tool to address this gap in surgical education by allowing trainees to learn and practice these soft skills in a low-stakes environment. **Methods** 24 medical students completing emergency medicine, surgery, and anesthesia clerkships will voluntarily participate in the study. They will use HTC Vive Pro headsets to view two versions of a 360-degree VR video depicting a simulated trauma resuscitation— one version 'as-is' and the other with narration and visual augmentation explaining the roles and responsibilities of team members. Participants will be randomized into two groups that will determine the order in which the videos are viewed. **Evaluation plan** Semi-structured interviews will be evaluated using a human-centered design approach based on thematic analysis to determine acceptability of content, VR modality and viewing order. Preliminary efficacy will be evaluated via content-based online quiz administered immediately pre- and post-viewing, in addition to a 3 week follow-up quiz post-participation. **Dissemination** Preliminary analysis of 8 interviews suggest that a VR trauma curriculum would be a welcome and acceptable adjunct to current training. Initial assessment data suggests an improvement in knowledge of team roles immediately following viewing (84% v 98%, n=8), though this improvement is not maintained at follow-up (84% vs 83%, n=6). While we intend to publish these pilot results, our primary objective is to use this evidence to support a larger study examining the integration of VR curriculum into traditional training. **Reflective Critique** Study design support from Patricia O'Sullivan, Director R&D in Medical Education at UCSF. Abstract feedback from Dr. Madhavi Dandu.

## Abstract # 71

**Using human-centered design to identify opportunities for education in the trauma bay**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Curricular Innovation, Interprofessional Education

**Category:** Curriculum Development

**Abstract:**

**PURPOSE** The purpose of this study was to use human-centered design (HCD) to identify educational opportunities to help trainees develop and practice soft skills in a trauma resuscitation environment. **BACKGROUND** Trauma resuscitations require swift response and coordination in a chaotic environment. Given the number and diversity of team members involved, it is critical for medical trainees to develop and refine soft skills such as communication, empathy and teamwork. **METHODS** We conducted 35 semi-structured interviews with trauma providers and learners, and 50 hours of observation to understand unmet needs. We used an HCD approach to thematic analysis to extract themes and opportunities from the interviews, and brainstormed with stakeholders to generate ideas for teaching modalities. **RESULTS** HCD synthesis revealed two major categories of themes and opportunities for learners: Roles and Responsibilities. Learners had an unclear understanding of their colleagues' roles and responsibilities, creating interpersonal challenges. Opportunity: Learners must understand their teammates' roles in order to build empathy and facilitate teamwork. Team Management. Some residents feel underprepared to manage a multidisciplinary trauma team, leading to poor coordination and suboptimal workflow. Opportunity: Learners must be given the opportunity to practice 'running a room' in a low-stakes environment. Brainstorming identified the use of virtual reality (VR) and 360-video technology to meet these needs and opportunities. **DISCUSSION** Human-centered design revealed an opportunity to use VR technology to help learners build empathy and practice room management during a trauma resuscitation. We are developing VR videos of trauma resuscitations from different perspectives in order to educate learners around roles, responsibilities, and room management. Next steps involve piloting this curriculum with students and residents as an adjunct to traditional training. **REFLECTIVE CRITIQUE** Study design support from Patricia O'Sullivan, Director, R&D in Med Ed. Abstract feedback from Dr. Madhavi Dandu.

Abstract # 72

**Improving Acute Coronary Syndrome Diagnosis and Management Education with a Flipped Classroom Curriculum**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Curricular Innovation, Health Care

**Category:** Curriculum Development

**Abstract:**

**PURPOSE** To describe the development of a flipped classroom curriculum to teach acute coronary syndrome (ACS) diagnosis and management to internal medicine interns. **BACKGROUND** ACS is common and associated with significant morbidity and mortality. We previously completed a needs assessment in which internal medicine interns performed poorly in diagnosing and managing ACS. Completion of a cardiology rotation was not associated with differences in these abilities. This suggested a need for improved educational methods for teaching these concepts. We designed a flipped classroom curriculum with video lectures (which learners could re-watch) and an in-class case-based discussion to optimize experiential learning. **METHODS** We first determined learning objectives for the curriculum. We created video lectures on ACS diagnosis and management accompanied by cases. Expert cardiologists guided development of these materials. Before an in-class session, internal medicine interns completed a pre-test and watched the videos. We used the cases during the in-class session to facilitate learners' application of concepts from the video lectures. The learners completed a survey evaluating the curriculum's quality and its strengths and weaknesses. We plan to perform a delayed post-test six months after the in-class session. **EVALUATION PLAN** Learners performed poorly on the pre-test, especially in providing complete medical therapy for ACS. Improved scores between the pre-test and delayed post-test will demonstrate knowledge retention. The post-curriculum survey shows high video viewership (82% of respondents) and preference for a video lecture followed by a case-based session to learn this material (>85%) over in-class or video-only methods. Further qualitative survey results will inform on the most and least effective aspects of the curriculum. **DISSEMINATION** We plan to present at national cardiology conferences and publish the curriculum on MedEdPortal. **REFLECTIVE CRITIQUE** Cardiology and education experts aided with development of these materials. Their feedback will continue to guide this project.

Abstract # 73

**Implementation of a Faculty-Led Pediatric Hospital Medicine Resident Curriculum**

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**Area(s) abstract covers:****Domain(s) addressed:** Competencies, Curricular Innovation, Evaluation of Programs, Quality Improvement**Category:** Curriculum Development**Abstract:**

**PURPOSE:** To develop, implement and evaluate a one year, attending-led curriculum in Pediatric Hospital Medicine (PHM) for residents during their inpatient rotation. **BACKGROUND:** PHM has recently become a pediatric subspecialty, and there is a growing body of educational content under the umbrella of PHM, such as Core Competencies. Hospitalists' involvement in resident education has been increasing as the field develops. Resident learning during inpatient rotations varies based on the diagnoses of admitted patients, and resident feedback indicated an overwhelming desire for both standardized PHM content and direct faculty teaching. A small scale educational series has proven to increase medical knowledge, however, to our knowledge, this is the first faculty-led PHM curriculum this size. **METHODS:** We used a curriculum development framework. A needs assessment was conducted via resident survey. A taskforce with faculty and resident members was convened and developed curricular goals based on PHM Core Competencies and entrustable professional activities. An attending-led lecture series was implemented to deliver the content consisting of 32 total lectures delivered multiple times over 1 year Monday and Wednesday mornings, coinciding with rotation blocks. When appropriate, specialists were invited to contribute. We surveyed residents throughout the curriculum to evaluate knowledge and satisfaction. **RESULTS:** On post-rotation surveys residents agree (4.3/5 on a 5-point Likert scale; n=16) the curriculum improved their knowledge of common pediatric illnesses and the average satisfaction with the curriculum was 4.2/5. **DISCUSSION:** We developed and implemented a PHM curriculum and demonstrated satisfaction and self-reported learning. We plan to continue collecting evaluation data, make iterative changes to the content, and publish the curriculum. **REFLECTIVE CRITIQUE:** Based on learner and faculty feedback from a pilot year, we made changes to the content and format and recognize ongoing need to update clinical content as evidence evolves

## Abstract # 74

**Pharmacology Exam Flashcards: Friend or Foe? Exam performance & student opinions.**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Basic Science Education, Curricular Innovation

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE** To evaluate the impact of flashcards on students' open-ended question (OEQ) exam performance and to explore attitudes around resource-enhanced exams. **BACKGROUND** Students in the UCSF Bridges curriculum will practice medicine in "clinics of the future" where they will have facts at their fingertips and will be expected to apply these facts to diagnose and treat their patients. In line with this, summative assessments are OEQ and favor knowledge application over recall. To explore how to best prepare our learners for their futures, we evaluated the different modalities used to teach pharmacology and compared OEQ performance on assessments with and without resources. Here we report on the impact of flashcards on students' OEQ exam performance and student attitudes towards these resources. **METHODS** Pharmacology flashcards were provided to study from in F1 and were only available on OEQ exams in the last two blocks of year 1 (REGN & PHD). We collected pharmacology OEQ scores and survey data from medical students in the 2017-2018 academic years. OEQs were scored by trained faculty on a scale of 1-6 using a holistic rubric: "meets expectations" (5,6), "borderline" (3,4) or "does not meet expectations". OEQ results were analyzed using repeated measures analysis of variance in SPSS software. An 18-question survey was offered via Qualtrics at the end of F1 and descriptive statistics were calculated. **RESULTS** Mean performance on pharmacology OEQs was significantly different across blocks (GS: 5.56+/-0.03; ABC: 5.21+/-0.03; REGN: 5.07+/-0.03; PHD: 4.99+/-0.03; BMB: 5.45+/-0.03; +/- SEM, n=149). 43.4% of responses indicated a preference for flashcards on exams in all F1 blocks (n=28). **DISCUSSION** Flashcards did not enhance pharmacology exam performance, indicating that the exams test application. Survey comments reveal the following: Pros- exam flashcards allow increased focus on understanding content and reduce stress; Cons- fear of not learning enough for clerkships or Step1. **REFLECTIVE CRITIQUE** We met with Patricia O'Sullivan for feedback on initial study design.

Abstract # 75

**Aligning hearts and minds: creation of an integrated cardiovascular pharmacy course**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Basic Science Education, Curricular Innovation, Evaluation of Programs

**Category:** Curriculum Development

**Abstract:**

**PURPOSE** To report on the design and early outcomes of a new, integrated Cardiovascular (CV) course in the School of Pharmacy curriculum. **BACKGROUND** The UCSF School of Pharmacy launched a new, three-year curriculum using strategies that facilitate integrative learning such as ability-based outcomes to define learning expectations, case- and problem-based learning, capstone courses, experiential learning, and comprehensive authentic assessment (1). Here we report on the design of and pharmacology outcomes from the newly integrated CV block. **METHODS** The CV course objectives, anchor cases and session objectives were selected and modified in collaborative, multidisciplinary team meetings. Summative exams included both open-ended and multiple-choice questions. Bloom's level and learner performance on pharmacology items between the Legacy curriculum and the New curriculum were compared, and average Bloom's level per exam was calculated. Student evaluations were collected using Evaluate and comments analyzed for emerging themes. **RESULTS** Students listed integration, clinical cases and formative assessments as key strengths, and high workload and integration of inquiry as improvement opportunities. Mean Bloom's level per exam was significantly different between the Legacy and New curricula: Legacy:  $2.2 \pm 0.06$ ; New:  $3.45 \pm 0.14$ . Passing rate on exams in the new curriculum ranged from 91-97%, and performance on PCOL questions ranged from 79-99% (lower performance was associated with multidisciplinary questions). **DISCUSSION** Integration requires a collaborative iterative process driven by objectives that specify essential knowledge and skills. Lower student performance on multidisciplinary questions may indicate that the curriculum needs to improve to better support learners' integration & application of knowledge to clinical scenarios. **REFLECTIVE CRITIQUE:** We intend to present this work at ESCape for feedback.

Abstract # 76

**Diversity, Equity and Inclusion Curriculum for Pulmonary and Critical Care Medicine Fellows**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Diversity, Equity and Inclusion

**Category:** Curriculum Development

**Abstract:**

Purpose: GME learners can lack training in skills relevant to advancing diversity, equity and inclusion (DEI) in a healthcare setting. We predict that a small-group-format curriculum will improve fellows' understanding of core concepts, while increasing allyship in a healthcare setting. Background: UCSF provides opportunities for students and faculty to develop knowledge and skills for promoting a diverse and inclusive workplace, but fewer offerings are available for fellows. Barriers to training include time, small program size and available faculty. Methods: We developed a DEI curriculum for fellow-level learners. Content experts and training sessions informed a 4-session course for a group of 7 fellows. The goals were to improve 1) understanding of core concepts important to inclusion, 2) confidence in skills of allyship, and 3) recognition of the role of DEI in health disparities. Topics included were identity, bias, stereotype threat, privilege, oppression, microaggression, allyship and healthcare disparities. Program assessment included course evaluation data. Evaluation Plan: Context/Condition: Variable training in core concepts, Lack of training in addressing microaggression, Limited ability to relate issues of DEI with health disparities Mechanisms: Group activity on identity, bias, privilege, Role play exercises with facilitators in a healthcare setting, Small group discussion of issues impacting health equity Outcomes: Self-reported competency, comfort communicating about DEI, Comfort in acting as an ally, Development of specialty-specific health disparities priorities Results: Learners reported improved concept understanding and comfort with allyship on Likert scale. Comments included support of the topic, appreciation of dedicated time, and comments about the limited time frame. Discussion: A curriculum of 4 1h sessions improved self-reported understanding of DEI concepts and comfort in acting as an ally. Reflective Technique: Additional input and feedback will be obtained from UCSF faculty and a national specialty-specific program directors association.

Abstract # 77

## **Addressing Vaccine Hesitancy in the Bridges Curriculum: A Practical, Evidence-Based Approach to Curriculum Review**

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### **Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Evaluation of Programs, Health Care, Quality Improvement

**Category:** Curriculum Development

### **Abstract:**

**PURPOSE** To review, improve, and create curricular content on the clinical and social aspects of vaccination for the UCSF School of Medicine. **BACKGROUND** Vaccine hesitancy has been named a top ten threat to global health by the WHO. However, medical schools do not uniformly teach the clinical aspects of vaccination. This includes the UCSF School of Medicine, where vaccination content had not been reviewed since transitioning in 2016 to the “Bridges” preclinical curriculum. **METHODS** We conducted a literature search in 5 databases to find vaccination curricula for medical students, and we held a semi-structured focus group with UCSF medical students to identify gaps in vaccine knowledge. We also reviewed all vaccine content in Bridges and solicited feedback from the Bridges course directors. **RESULTS** Review of materials and feedback from the Bridges course directors found that vaccine content was scarce and not coordinated. These findings were used to create a “road map” of all vaccine content presently in Bridges and highlight areas where it could be expanded. Our literature search found 4 vaccination curricula that could be integrated with Bridges. The focus group identified a lack of knowledge to answer common patient questions on vaccination. With these findings, we wrote a new syllabus and small group on the clinical and social aspects of vaccination for 2nd year medical students. **DISSEMINATION** This project was presented as an oral and poster presentation at the 2019 Summer Explore Symposium. The road map of existing content has already led to the development of more vaccine small groups in other courses in Bridges. Our approach is a means of rapid and effective curriculum development for professional schools to improve content on emergent social and medical issues. **REFLECTIVE CRITIQUE** This project received monthly feedback from faculty and students in a medical education summer internship. We also contacted the authors from our literature search for feedback on implementing their curricula. In the future, feedback will come from course evaluations by medical students.

## Abstract # 78

**REMAP: A novel resident curriculum and communication framework for advance care planning in the outpatient setting**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Competencies, Patient Care, Primary Care

**Category:** Curriculum Development

**Abstract:**

**Purpose:** This project introduces REMAP, a communication framework for Advance Care Planning (ACP), which has not been widely used in a primary care setting among residents. We hypothesize that increased comfort and confidence with REMAP increases rates of ACP discussions. **Background:** Residents are expected to conduct goals of care discussions early in training, often without formal introduction to a communication framework specific to ACP. A needs assessment revealed that barriers to conducting ACP in primary care clinic included uncertainty around a structured approach to discussions. REMAP is a well-described teaching tool developed by VitalTalk® and is specifically aimed to assist clinicians in ACP discussions. **Methods:** Participants include internal medicine primary care and categorical residents at UCSF. The curriculum consists of a 1-hour presentation of the REMAP framework and case-based discussion, followed by a 1-hr session to identify and contact panel patients eligible for ACP. Data is collected from a pre/post-intervention survey, as well as clinic performance data around ACP completion rates. **Results:** Preliminary data indicates increased confidence in eliciting patient goals and values, knowledge of concrete language or phrases to use, and making a concrete recommendation to patients. ACP completion rates are higher in residents who received the intervention versus residents who did not. **Discussion:** REMAP is one effective communication tool that can be used in primary care settings to aid trainees in a step-wise approach to ACP discussions. Residents exposed to the REMAP framework are more likely to express confidence in ACP discussions and have higher ACP completion rates than their peers. The results of this intervention can be used by residency programs to inform future curricular efforts. **Reflective Critique:** Limitations include opportunities to apply the REMAP framework. Future iterations of the curriculum will include a 1-hr simulation workshop with real-time feedback from faculty trained in the VitalTalk and REMAP methodology.

Abstract # 79

### **UCSF Surgery Symposium: Early Structured Exposure to the Operating Room and Implementation of a Surgical Skills Curriculum for Pre-Clerkship Medical Students**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Career Choice, Clinical Instruction and Performance, Curricular Innovation, Mentoring, Simulation

**Category:** Curriculum Development

**Abstract:**

Purpose To provide pre-clerkship medical students (MS) a structured orientation to the operating room (OR) environment as well as hands-on OR etiquette and surgical skills curriculum through the UCSF Surgery Symposium (SS). Background Many students feel underprepared to enter the unique OR environment on their surgical clerkship, leading to decreased self-confidence and a negative impact on the learning experience. The SS was developed by a group of MS and surgery residents in the Surgery Interest Group (SIG) to begin to demystify the field of surgery, giving MS an early, structured exposure to this learning environment as well as instruction on skills needed for success on the core surgical clerkship. Methods 1st and 2nd year MS were invited to attend the SS which comprised rotating through three stations: 1) sterile scrubbing, gowning, and gloving; 2) OR etiquette; and 3) basic suturing skills. Students completed a mandatory pre-event survey and will be surveyed again at the end of their clerkship year. Evaluation Plan Seven residents and 71 students attended the SS. Preliminary pre-event survey results show most students felt 'very uncomfortable' or 'somewhat uncomfortable' with the OR environment. We will send a post-survey to all 3rd year MS at the end of their clerkship year (Dec 2020) to assess the SS's success in preparing MSs for their surgical clerkships. We will compare the responses among those who attended the SS and those that did not, in addition to the pre-survey responses. Dissemination We hope this intervention will increase student comfort with the OR environment and confidence on surgical clerkships. We plan to disseminate our results to leadership in the Department of Surgery, the curriculum committee in the SOM, and at educational conferences in hopes of creating a robust surgical curriculum which will benefit all MS. Reflective Critique We will survey students to get their feedback on the SS and also involve SIG leadership, surgical residents, and faculty within the Department of Surgery for feedback on this curriculum and its implementation.

## Abstract # 80

**Leveraging the electronic medical record to deliver a clinical curriculum at the point of care**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Computers and Technology, Curricular Innovation

**Category:** Curriculum Development

**Abstract:**

**Purpose:** We aim to pilot and evaluate a clinical curriculum for medical students and internal medicine (IM) interns that leverages standard features of a commonly used electronic medical record (EMR) (Epic; Epic Systems Corporation) to deliver curricular content at the point of care. **Background:** Internal medicine housestaff on inpatient rotations spend greater than half their time on the computer (Mamykina, Vawdrey, & Hripcsak, 2016), providing an opportunity for learner engagement via the EMR. We developed EMR-embedded curricula informed by sociomateriality theory, which describes knowledge and learning in a system as embedded in material action and intra-actions (Fenwick, Nerland, & Jensen, 2012), and andragogical theory, which underscores the necessity of authentic experience, salience, and problem-centricity in adult learning (Knowles, Holton, & Swanson, 2015). **Methods:** We selected from a professional society's published framework for curricular development five diagnoses for inclusion in our pilot curriculum (Nichani, Fitterman, Lukela, & Crocker, 2017). Informed by the published competencies, resident-faculty dyads developed diagnosis-specific objectives and material "dot phrases" (i.e., phrases that can be summoned by users directly into notes), which included a template assessment/plan and supplemental material aimed at teaching clinical content. Our pilot targets are third- and fourth-year medical students and interns on IM rotations. **Evaluation plan:** We plan to use a non-equivalent control group pre-post test study design, with testing at the beginning and end of IM rotations. In addition, we will collect satisfaction data and feedback from users by electronic survey. **Dissemination:** We anticipate submitting our work to a regional medical education conference (WGEA 2021) and to the innovations section of a medical education journal ("Really Good Stuff," Medical Education). **Reflective critique:** We have collected informal user data for greater than 12 months, which has been used to modify our "dot phrase" design.

## Abstract # 81

**Back to the Basics: Pilot Module on Clinical Anatomy of the Shoulder for Rheumatology Fellows**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Health Care, Patient Care

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE:** This study was designed to assess fellows' confidence in their ability to perform a shoulder exam and procedures to this region and determine whether a brief, anatomy-based module could improve confidence in their skills. **BACKGROUND:** Musculoskeletal diseases are a leading cause of disability worldwide. Despite this, studies have demonstrated that knowledge of how to diagnose musculoskeletal diseases is low amongst all levels of medical providers, including musculoskeletal specialists. **METHODS:** A brief teaching session utilizing both lecture and review of anatomic specimens was designed. All rheumatology fellows at UCSF were invited to attend. A questionnaire including self-assessment of fellow confidence with shoulder exam and procedures was administered to all attendees prior to the session. Confidence was scored on a 5pt Likert scale (1 = strongly disagree, 5 = strongly agree). A similar questionnaire was administered to attendees immediately afterwards. **RESULTS:** Of 9 total fellows, 5 attended and 4 completed both questionnaires. Pre-test responses suggested low confidence – mean score of 2.75/5 to the prompt "I feel confident in my knowledge of musculoskeletal anatomy," 2.25/5 for "I feel confident in my ability to perform a targeted exam of the shoulder," 2/5 for "I feel confident performing a shoulder joint injection" and 2/5 for "I feel confident performing a shoulder joint aspiration." Post-test scores for all these prompts increased to 4/5, 4/5, 4/5 and 3.25/5 respectively. Fellow enthusiasm for anatomy teaching was high both before 4.75/5 and after this session 5/5. Due to low sample size, no statistical analysis was performed. **DISCUSSION:** Echoing published literature, our study suggests low confidence amongst rheumatology fellows in musculoskeletal anatomy/procedures. Fellow confidence with these skills increases after a brief, anatomy-focused didactic. **REFLECTIVE CRITIQUE:** This study was presented in HPE and at a WIP session. Given small sample size, our findings cannot be generalized but are likely to be useful to our rheumatology program leadership.

## Abstract # 82

**Illuminating the Health Effects of Climate Change through PBL Case Enrichment**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation

**Category:** Curriculum Development

**Abstract:**

**PURPOSE:** We sought to address the lack of content about climate change in our curriculum, in response to the 2019 AMA policy recommending education for physicians-in-training about climate change science and associated health risks.<sup>1</sup> **BACKGROUND:** Climate change is affecting health and health care in diverse ways captured by various fields of study, via disease processes, geographic forces and socioeconomic systems.<sup>2</sup> In problem based learning (PBL) students identify learning issues (LIs) in many disciplines within the context of a single patient case; LIs drive an inquiry process drawing from multiple sources and resulting in a summary document, a learning object (LO). Longitudinal themes emerge in the sets of learning objects prompted by a series of case narratives. PBL is well suited to illuminating the health effects of climate change, as has been similarly postulated for sustainability.<sup>3</sup> **METHODS:** To prompt trans-disciplinary inquiry about climate change, all six cases of an integrated foundational and clinical sciences block were enriched with one of the following topics: emerging infectious diseases, air quality and respiratory disease, population displacement, power instability, heat-related illness, medical supply chain interruption, and climate anxiety. Sixteen students worked through cases in two groups. LOs and exams were reviewed by JMP faculty. **RESULTS:** Students' LOs covered a range of climate change-related content cutting across competency domains. Students performed well on exam items about climate change. Case infusions with climate change-related content created a longitudinal thread in a PBL block and resulted in relevant learning. **DISCUSSION:** To our knowledge, PBL has not yet been reported as an effective method to cover climate change. In a series of medical cases related to climate change in various ways, we develop a multidimensional competency strand intersecting multiple areas of medical science and practice. Students' chosen foci reveal their interest in addressing root causes of climate change, not just learning about impacts on health.

Abstract # 83

### **Evaluation of a longitudinal subspecialty clinic for internal medicine residents**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Career Choice, Evaluation of Programs, Longitudinal Educational Activities, Mentoring

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE:** To evaluate the effectiveness of a Longitudinal Subspecialty Clinic (LSC) during internal medicine (IM) residency. **BACKGROUND:** Exposure to subspecialty medicine is a key element of IM residency training. The traditional model for subspecialty education for residents is a 2-4 week rotation on an inpatient consult service. These electives frequently do not include significant time in the ambulatory environment--an important component of most subspecialty careers--and they rarely offer continuity with faculty. Our IM residency program developed a novel LSC experience which pairs a resident with a longitudinal subspecialty preceptor in the outpatient setting. Our study reports the experiences of the learners and preceptors of this program. **METHODS:** Participating categorical PGY2s are paired with a faculty preceptor in their subspecialty of interest. Residents work in their preceptor's clinic 1 half-day per week during ambulatory blocks (every other month during the PGY2 year). We surveyed preceptors and current and past residents who participated in an LSC in the last 5 years. **RESULTS:** Response rates were 66% (N=93/140) for residents and 58% (N=15/26) for preceptors. The majority of residents and preceptors reported that the LSC experience was very or extremely effective in enabling residents to explore their subspecialty of interest (76% and 87%, respectively), gain exposure to outpatient subspecialty practice (90%, 73%), form a mentoring relationship with their preceptor (71%, 80%), obtain a letter of recommendation (76%, 64%), gain medical knowledge (85%, 80%), prepare for fellowship (76%, 67%), and build confidence in managing outpatient subspecialty conditions (78%, 67%). **DISCUSSION:** Our experience suggests that a longitudinal subspecialty clinic is effective in facilitating subspecialty career exploration, mentorship, and education for categorical IM residents and could be adopted at other residency programs. **REFLECTIVE CRITIQUE:** Our study design and data analysis were informed by consultation with Drs. Christy Boscardin, Bridget O'Brien, and Pat O'Sullivan.

## Abstract # 84

**UCSF's first shot at the BBOT, a tool that promotes formative feedback on the spot**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Assessment and Testing, Clinical Instruction and Performance, Communication, Competencies, Computers and Technology

**Category:** Curriculum Development

**Abstract:**

During the Foundations 2 and Career Launch phases of the Bridges Curriculum, students are primarily in clinical environments. These clinical training environments build students' competencies and abilities to perform entrustable professional activities (EPA's) and achieve milestones toward graduation and residency programs. Assessment practices in the Bridge Curriculum are built on the philosophy of Assessment for learning. Assessment for learning provides frequent, formative data and feedback about performance to help individualize pathways to graduation. One formative assessment approach that aligns competencies, EPA's, and assessment philosophies in the Bridges Curriculum is the Brief Bridges Observation Tool (BBOT). The Bridges Brief Observation Tool (BBOT) is used for a short observation of student performance in one of five activity classifications with the option to write-in a description of another type of activity: (1) gathering history from a patient, (2) conducting physical examination, (3) delivering an oral presentation, (4) writing a note for chart, or (5) communication with a patient or family. These 5 activities are mapped to competencies. The student is responsible for requesting observation and feedback with the BBOT from an attending, resident or intern supervisor. Alternatively, as observer can also offer to initiate the BBOT. After the supervisor observes the student, the supervisor gives feedback in person to the student. This feedback is recorded through a short form that also includes a supervision rating to assess EPA's. We will provide an overview of the tools used and an analysis of the formative feedback provided through the BBOT assessment during the pilot year. In addition, we will summarize the redesign of the BBOT tool, and preliminary data from the implementation of this redesign we call "BBOT 2.0". During 2019, the BBOT was primarily administered and utilized through MedHub. Over 7,000 BBOTs were completed in MedHub across 8 Core Clerkship disciplines and 1 Longitudinal Integrated Clerkship (LIC) Program. Two additional LIC programs utilized Qualtrics

Abstract # 85

**A starting point to bridge the gap: connecting students to clinical informatics through a quality improvement project using Electronic Health Record data.**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Competencies, Computers and Technology, Curricular Innovation, Health Care, Health Systems, Patient Care, Quality Improvement

**Category:** Curriculum Development

**Abstract:**

**PURPOSE:** This is a pilot educational project for physical therapy (PT) students to learn clinical informatics concepts and applied knowledge by conducting a retrospective clinical review using electronic health records (EHR) data for a quality improvement (QI) initiative project. There are two objectives: 1) learn introductory informatics concepts and how it applies to EHR data; and 2) compare PT clinical practice patterns with current literature using EHR data. **BACKGROUND:** A significant gap remains in learning opportunities to integrate clinical informatics for physical therapy (PT) students<sup>1–3</sup>. With limited opportunities to work with ‘real’ data projects, learners miss out on important skillsets<sup>4,5</sup>. **METHODS:** Hybrid learning approach is used to introduce informatics concepts to a cohort of third-year PT students. Concepts such as data types (i.e. unstructured vs. structured) and data curation were offered both as online modules and in didactic formats. Hands-on learning approach was through a QI project using available technologies (i.e. Tableau, Apex, Clarity). The learners evaluated subacromial impingement syndrome (SAID) population by comparing actual clinical practice patterns from PT Faculty Practice to evidence-based practice guidelines. **RESULTS:** Learners analyzed structured data in Tableau and applied their clinical knowledge to organize unstructured treatment interventions into appropriate categories using Natural Language Process application for further analysis. 130+ patients were analyzed and identified 70+ unique interventions. Recommended interventions were utilized less frequently in patients with higher number of visits (i.e. 6+ visits). **DISCUSSION:** Learners completed the retrospective review of SAID population from periods of 2016-2018. Clinical practice patterns appear to be mostly consistent with recommended guidelines yet variations exist. Results were shared among clinical faculty and to second year DPT students yet further analysis is needed to identify contributing factors for the variations. **REFLECTIVE CRITIQUE:** To evaluate contribution factors to variations.

Abstract # 86

**Embracing Genetics and Genomics: Assessing Education Needs for Faculty and Trainees Across UCSF**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Health Care, Patient Care, Research, Other: please describe in text field below

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE:** Describe current genetics and genomics utilization across clinical subspecialties and research domains, and identify educational needs and training barriers for clinicians and researchers. **BACKGROUND:** Advances in genomic technologies and precision medicine are transforming research and healthcare. Genetic risk assessment and testing are critical for preventative care and diagnostics, and clinical genomic tests are increasingly available. In order to ensure UCSF healthcare providers and trainees are prepared for clinical implementation of genetics and genomics, the Institute for Human Genetics (IHG) Education Committee initiated a project to examine utilization and educational needs across UCSF. **METHODS:** Surveys were developed to assess genetics and genomics utilization and training needs for research and clinical faculty/trainees. A 12-item researcher survey was sent to 15 graduate program directors and disseminated to faculty, students and postdocs; 128 responses were received. Key informant interviews of 12 clinical division chiefs/departments chairs in the Schools of Medicine, Nursing, and Pharmacy were conducted and quantitatively analyzed. Upon IRB approval, a clinician survey of 28 items informed by the interviews will be widely distributed to clinical divisions and departments. **RESULTS:** Preliminary results from the researcher survey indicate a need for courses on human genetics and genomics fundamentals, genomic technologies, and sequence analysis. Preliminary results from the key informant interviews identified unifying themes regarding educational and resource needs that will be explored more extensively with the clinician survey. **DISSEMINATION:** Survey results will be presented to UCSF leadership, graduate program directors, clinical department leadership, and at national meetings. A manuscript will be submitted for publication. **REFLECTIVE CRITIQUE:** The surveys and interview questions were modified based on feedback from the IHG Education Committee and other faculty members. A UCSF education research expert was consulted for the qualitative analysis.

Abstract # 87

**The UCSF Human Rights Cooperative: Advancing Medical Student Training Through Forensic Asylum Evaluations**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Community Medicine, Curricular Innovation, Diversity, Equity and Inclusion, Longitudinal Educational Activities

**Category:** Curriculum Development

**Abstract:**

**Purpose:** Describe a unique asylum evaluation model. **Background:** At the UCSF Human Rights Cooperative (HRC), physical and psychological evaluations for asylum seekers are conducted by medical students and faculty. Research has shown that medical evaluations increase asylum grants by three-fold. **Methods:** The UCSF HRC developed a unique model to benefit asylum seekers, health professionals, and medical students. Medical and psychological evaluations are performed with a focus on trauma-informed care and mentorship to ensure high quality evaluations and to mitigate vicarious traumatization. Our design promotes safety and wellness among clients, interpreters, and evaluators by engaging in structured pre- and post-clinic briefings. Feedback is gathered through a post-clinic survey. Students participate in 9 separate hour-long educational training sessions on topics ranging from affidavit writing to psychological evaluations. Students co-coordinated a large training for faculty, surveying clinicians to gauge their understanding of and commitment to conducting evaluations. **Results:** Of providers and students surveyed in clinic (immediately after conducting an evaluation), 100% (n=39) felt fully supported during their evaluations. Among these individuals, 52% felt their training was sufficient to provide these complex evaluations, and qualitative responses emphasized the importance of support, debriefing, and additional training opportunities. To date, 71 medical students have completed all required education to participate in forensic asylum evaluations. **Conclusions:** The UCSF HRC documented the importance of mentorship, wellness, and training to provide sustainable, trauma-informed, high-quality evaluations. We are developing models to engage medical students in longitudinal learning focused on trauma-informed care to ensure high quality evaluations. We feel confident in the ability of our model to attract and retain students and clinicians. **Reflective Critique:** Based on feedback, we are pursuing educational models to longitudinally provide medical students with advocacy opportunities.

Abstract # 88

### **Surgeons as Mentors: Can “Speed-Mentoring” Help Bridge the Gap?**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Inquiry, Mentoring, Research

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** To provide structured interaction between medical students and surgeons to foster mentoring relationships, research opportunities, and improve students' perceptions of surgeons. **Background:** Surgeons are sometimes perceived as unapproachable or uninterested in teaching or mentoring. This perception limits students' ability to build relationships with surgeons and can stifle any desire to explore a career in surgery. Studies show a concern among students, particularly women, about work-life balance in a surgical career. **Methods:** We developed a “speed-mentoring” event in which students completed four 15-minute interactions with surgeons from specialties in which they expressed interest. We administered a pre- and post-intervention web-based survey using Qualtrics, measuring students' perceptions of surgeons and knowledge about a surgical career. **Results:** A total of 41 students and 30 faculty participated. The students were 49% women and 69% first years. We found that 22% of students had no prior interactions with surgeons, while an additional 31% had interacted with only 1-2 surgeons prior to our event. Using a Likert scale response, we found a statistically significantly proportion of students had improved perceptions of the following statements after our event: “I understand what it is like to be a surgical resident” ( $p<0.05$ ); “Surgeons are approachable” ( $p<0.01$ ); and “Surgeons have interests outside the operating room” ( $p<0.05$ ). **Discussion:** Speed-mentoring greatly improved medical student perceptions of surgeons, the field as a whole, and their understanding of residency and attending life. We plan to study the impact of these early, structured interactions on student engagement in surgical research, satisfaction on the core surgery clerkship, and, ultimately, interest in a career in surgery. **Reflective Critique:** We sought feedback on experimental design from education experts in the Departments of Medicine and Surgery. We will continue to study the impact of this and other new surgical curriculum on students' perceptions of and interest in surgery.

## Abstract # 89

**Inspired and humbled: Patients and families teach students in home visits**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Communication, Community Medicine, Patient Care, Reflection

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**PURPOSE:** We sought to explore students' awareness of patients and families as teachers in their medical education. We hypothesized that a brief intervention prior to a geriatric home visit would promote students' recognition of this important role. **BACKGROUND:** In 1913 Osler described patients as students' best teachers. More recently, the educational theory of co-production recognizes the importance of "stakeholders," including patients and families, in teaching of future physicians. **METHODS:** We conducted home visits with 60 third-year FCM clerkship students. Before the visit, students worked with a geriatrician to briefly discuss potential roles of patients and families as teachers. During the visit, students participated in patient care and spoke with everyone at home. After the visit, students reflected in structured debrief sessions and written notes. We analyzed results using qualitative methods. **RESULTS:** All sixty students consented and participated. In debriefs and written notes, students expressed gratitude that: 1) patients shared their lives and bodies with them, 2) families coached them how to communicate effectively with older patients, 3) patients disclosed how they confronted multiple challenges that students had not appreciated, and 4) families demonstrated both their commitment to one another and the toll of daily caregiving. **DISCUSSION:** Students reported feeling inspired and humbled in learning from patients in ways that surpassed textbooks or lectures; they were grateful for this teaching. Real time education and acknowledgement can be very powerful for both students and patients. The inclusion and recognition of patients as teachers is essential in promoting educational design to ensure that future physicians meet the needs of their patients and communities. **REFLECTIVE CRITIQUE:** Based on feedback from UCSF colleagues and nationally (STFM and WGEA), we are working to 1) capture more quantitative data 2) consider patient as teacher recognition in other settings 3) explore roles for patient/family giving feedback to students.

Abstract # 90

**Development of an Operative Assessment Tool Using Item-Response Theory**

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**Area(s) abstract covers:****Domain(s) addressed:** Assessment and Testing**Category:** Curriculum Evaluation/Education Research**Abstract:**

**PURPOSE:** To describe the development and evaluation of an operative assessment tool using item-response theory (IRT) analysis. **BACKGROUND:** Operative feedback is essential for surgical trainees, but current assessments provide little actionable information to learners. Recently, our group developed TAASE (Technician, Anatomist, Anticipator, Strategist, Executive), a descriptive model of surgical development to help guide operative feedback. The goal of this project was to develop and evaluate items for an assessment tool based on this descriptive framework. **METHODS:** 28 items were developed based on the TAASE framework. The instrument was piloted November-December 2019 with otolaryngology residents and surgeons. The results were calibrated using the Berkeley Assessment System Software (BASS) using item-response theory analysis. **RESULTS:** 53 assessments were completed during the month-long pilot. These consisted of 28 self-assessments completed by 17 unique surgeons and 25 observed assessments completed by 10 unique surgeons. The level of surgeon being assessed ranged from post-graduate year (PGY)-1 to independent surgeon. The initial set of items exhibited good internal consistency reliability (coefficient alpha = 0.94). Item-level internal structure was well-fit by the model for 21 of the 28 items based on weighted mean square fit statistics. Two items exhibited differential item function (DIF) between residents and attendings. The scores for the respondents tended to increase with PGY year, but the trend was not statistically significant. **DISCUSSION:** These results provide evidence that there are meaningful distinctions between levels of operative proficiency as proposed by the TAASE framework. Next steps include repeating a pilot with a larger group after revising and narrowing down the items based on these results as well as simplifying the rating scale. **REFLECTIVE CRITIQUE:** We have solicited both internal and external feedback, including from an IRT expert at UC Berkeley, all have which informed the presentation of this work.

## Abstract # 91

**Effective Interprofessional Collaboration in the Inpatient Setting: Promoting Safe Discharges**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Interprofessional Education, Patient Care

**Category:** Curriculum Development

**Abstract:**

**Purpose:** To provide medical students with an approach to interprofessional collaboration in the context of inpatient multidisciplinary rounds (MDR) and discharge planning. **Background:** Effective interprofessional collaboration is critical to the care of hospitalized patients, and learners need guidance to develop these skills. Upon completion of their third year, medical students requested training on collaborating with health professionals in the hospital, specifically around MDR and discharge planning. A curricular scan revealed that this content was only briefly covered. **Methods:** To address this gap, we developed and implemented a three-hour session for fourth-year medical students. The session begins with a panel discussion, during which providers of different professions discuss their roles in the hospital and share tips for effective collaboration. This is followed by a 2-hour small group session in which the students work through a patient case, practicing a structured approach to MDR and discharge planning. Each student is assigned a role (medical student, bedside nurse, case manager, pharmacist, physical therapist) and receives unique information about the patient's hospital course, which they use to collaborate on a safe discharge plan. **Results:** 168 medical students and 20 facilitators participated in the 2019 session. Students' (n=114) overall rating of the session was 3.98/5; facilitators' (n=14) mean rating was 4.80/5. Strengths cited included the opportunity to explore perspectives of different health professions and the incorporation of concrete, practical tips for discharge planning and MDR. In spring 2020, we will survey students on their confidence in performing safe discharge planning and presenting in MDR. **Dissemination:** This year, we plan to collect additional data and submit to MedEdPORTAL. **Reflective Critique:** Based on pilot feedback, we will explore the feasibility of including students of other professions in the small groups and ask panelists to comment on how to incorporate interprofessional communication into the busy inpatient workflow.

Abstract # 92

### **Designing a tutor curriculum for the Clinical Skills Tutoring Program (CSTP) at UCSF School of Medicine**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Clinical Instruction and Performance, Curricular Innovation, Mentoring, Remediation

**Category:** Curriculum Development

**Abstract:**

**PURPOSE:** The Clinical Skills Tutoring Program (CSTP) is designed for students needing extra support to achieve competence in one or more clinical skills domains. A tutor curriculum addressing learning and teaching strategies around clinical skills is needed to provide tutors with the knowledge, skills, and confidence needed to be successful in this role. **BACKGROUND:** Peer tutor programs improve student performance (1,2) and learning experience (3,4). They also benefit the tutor in developing teaching skills, reflective learning, and confidence (5,6). In some programs, tutors themselves show the greatest improvement in outcomes (7). However, formal training is not always provided for a tutor to be an effective teacher. We created a tutor curriculum with clear learning objectives to train tutors in teaching students. **METHODS:** To design the curriculum, we conducted a needs assessment of key stakeholders and a literature review that assessed other peer tutoring programs, explored clinical skills learning models, and identified core learning objectives. Our curriculum teaches six learning objectives to tutors through in-person interactive sessions and written materials: 1) Define learning theories that support peer tutoring; 2) Analyze clinical skills performance reports; 3) Formulate an individualized learning plan and schedule with students; 4) Deliver feedback on performance using principles of the self-regulated learner (8); 5) Model proficiency in history taking, physical exam, clinical reasoning, and communication; 6) Communicate effectively with CSTP program directors and the student's coach. **EVALUATION PLAN:** Tutors will receive two surveys to evaluate the in-person training, written curricular materials, online resources, and support from directors. **DISSEMINATION:** We will disseminate the curriculum at medical education meetings and submit the curriculum to Med Ed Portal. **REFLECTIVE CRITIQUE:** We revised the pilot curriculum based on feedback from the Associate Dean for Assessment. We will solicit longitudinal feedback from tutors to improve the curriculum iteratively.

Abstract # 93

### **A Narrative Medicine Approach to Mental Health, Identity, and Trauma-Informed Care**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Curricular Innovation, Medical Humanities, Reflection

**Category:** Curriculum Development

#### **Abstract:**

**PURPOSE** This project involved redesigning one seminar using a narrative medicine approach as a pilot for addressing low learner satisfaction and enhancing learning about identity, mental health, and disparities. **BACKGROUND** Student feedback in interviews and online evaluations demonstrated that the traditional case-based format of seminars is inadequate for discussing the intersection of patient and clinician identities with health and healthcare. In light of a recent systematic review paper (Milota, 2019) concluding that narrative medicine approaches (close reading, creative reflection, and group discussion) can positively impact modification of attitudes, knowledge, and skills, we used these principles to redesign a course seminar on mental health, identity, and trauma-informed care. **METHODS** Literary first-person narratives were selected for relevance to the seminar topic. We then created tailored discussion questions, a supplemental reader chapter about trends in mental healthcare and associated disparities, and a session facilitator guide. The MS1 class participated in this pilot and received pre- and post-session surveys that included both Likert scale and free response questions. **RESULTS** Student pre/post-seminar surveys were analyzed via paired t-test (n=13). Post-session surveys showed statistically significant increases in student confidence in avoiding biased language (p=0.009) and applying trauma-informed care (p=0.015). Students felt that the narrative-based format helped them meet the session's learning objectives. **DISCUSSION** Statistically significant changes in surveyed criteria combined with positive qualitative comments demonstrate the potential benefit of incorporating more narratives in curricula about identity, mental health, and disparities. Project results will be disseminated through talks and poster presentations. **REFLECTIVE CRITIQUE** Once available, formal course evaluations from students will be used to modify seminar content and possibly expand the integration of narrative into other course seminars.

Abstract # 94

**How Leaders at UCSF Think about Investing in Educators: Identifying Value Factor**

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**Area(s) abstract covers:**

**Domain(s) addressed:** Evaluation of Programs, Financing Medical Education

**Category:** Curriculum Evaluation/Education Research

**Abstract:**

**Purpose:** We sought to identify value factors that UCSF leaders deem important regarding intramural programs that invest in health professions educators and education innovations. **Background:** An understanding of the value factors that are meaningful to university and health systems leaders is essential when designing and evaluating innovative education programs. We explored institutional leaders' perspectives on meaningful value factors in relation to the Academy of Medical Educators (AME) education endowed chair program, and the AME education innovations grant program. **Methods:** We conducted a thematic analysis interviewing a purposive sample of UCSF leaders. Interview questions were framed with Value Measuring Methodology (VMM) domains: operational, financial, political/strategic, social/societal, and individual. Interviews were recorded, transcribed, and coded by two investigators. Themes were identified using an iterative consensus-building approach. **Results:** We interviewed 31 leaders including chancellors, deans, department chairs, and health system executives. Leaders expressed interest in value factors from each VMM domain: Operational – recruitment, retention, education scholarship, new or improved education programs; Financial – education funding; Political/strategic – symbolic support for the education mission, future institutional success, innovation, connecting across organization; Social/societal - improved patient care, healthcare workforce development, external and internal community engagement; Individual – career development, stature of individuals. **Discussion:** UCSF leaders described a broad range of value factors that are important to them when considering the impact of programs that invest in educators/education. This information can be used to guide future program development and evaluation in alignment with our leaders' priorities. Our findings may also help inform the development of similar programs in other settings. RC Based on ESCape feedback, we switched from a return on investment framework to VMM. VMM supports the identification of a broad range of metrics beyond quantitative or financial.

Abstract # 95

**Rounding Out Surgical Residency: Developing Basic Research Skills in Junior Residents**

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**Area(s) abstract covers:****Domain(s) addressed:** Curricular Innovation, Inquiry, Mentoring, Research**Category:** Curriculum Development**Abstract:**

**Purpose:** To promote development of scholarship skills early in surgical training and improve clinical residents' participation in research endeavors in the Department of Surgery (DoS). **Background:** The configuration of general surgery residency is unique. Residents complete three clinical years (junior), two non-clinical professional development (PD) years, and two final clinical years (senior). A gap was identified in resident preparedness for PD as well as ongoing participation in research during all clinical years. **Methods:** Through interviews and focus groups with PD and senior residents, we identified knowledge gaps around successful academic scholarship, including identifying mentors, mentee expectations, basic data analysis, scientific writing, and exposure to research opportunities in the DoS and the UCSF community. A month long "Research Curriculum" will be piloted in April 2020. The five-session curriculum revolves around the Annual Surgery Research Symposium. In addition to the Symposium, four 1-hour interactive sessions have been designed based on the gaps identified. Faculty and trainees from the Departments of Surgery, Medicine, and Biostatistics have been recruited to ensure diverse views on each topic are represented. Each session has dedicated pre-work and deliverables. **Evaluation Plan:** Session will be evaluated according to their topics. Where appropriate, specific deliverables from each session will be evaluated by the session leader (scientific writing: draft specific aims; mentorship: plan to enhance current mentorship relationship or identify new mentor). The long-term goal is to evaluate the academic productivity, extramural funding, and satisfaction with scholarship in surgical residency. **Dissemination:** The curriculum will be disseminated to the surgical community through presentation at the Association of Program Directors in Surgery Meeting. **Reflective Critique:** The curriculum has been developed with DoS Education and Research Leadership. Further feedback and iterations will occur based on real time and longitudinal feedback from learners.