UCSF School of Medicine
Presents
The 11th Annual
Curriculum Ambassador Showcase
Monday, September 26th, 2011

The Curriculum Ambassador Program is a unique program in UCSF’s School of Medicine in which students collaborate with faculty project advisers, curricular leaders, and experts in media, technology, information retrieval, evaluation and educational scholarship to develop enhancements to our curriculum. These students become more informed about the curriculum and the School of Medicine can draw upon them as true “ambassadors,” liaisons between curricular leaders in disparate departments and fields, who can explain our curriculum and advocate for change. While the School of Medicine benefits from the focused efforts of these students, the program also is designed to help the students develop educational skills that can be applied in this setting and throughout their medical careers. The hallmark of the program is a completed scholarly project.
Curriculum Ambassador Leadership Team

Program Oversight
Tracy Fulton, Co-Director
Chandler Mayfield, Co-Director
Helen Loeser, Founding Director
David Rachleff, Program Coordinator

Educational Technology
Christian Burke
Valentina Bettencourt

Educational Research, Scholarship & Evaluation
Christy Boscardin
Patricia O’Sullivan
Arianne Teherani

Educational Informatics
Josephine Tan
UCSF Library

We gratefully acknowledge the support of the following Curriculum Ambassador advisors, faculty, and staff.

2011 Curriculum Ambassador Projects

**Anatomy Lab: Institution of Interactive iPad Lab Manual**
Carly Andler, Jensara Clay

**BMB: Movement Disorders Independent Learning Module**
Kaitlin Hollander

**FPC: Three Pillars of Clinical Skills Development in Foundations of Patient Care:**
*A Move Towards Competency- Based Education, Assessment, and Longitudinal Advising*
Lauren Smith, Stephen Villa, Tina Yu

**Global Health: Creation of on-line Global Health introductory Pathways curriculum**
Jessica Harris

**I-3: Longitudinal Mapping of Infectious Diseases in the Medical School Curriculum and Enhancement Of Self-Directed Learning**
Jeff Doyon, Emily Watkins

**Inter-Professional Health Education: Improving interdisciplinary collaboration through the IPHE curriculum**
Jennifer Cai, Peter Colley, Asya Ofshteyn, Maura Purcell

**M&N: Development of Integrated Essential Core Practical Examinations**
Atoosa Firouzian, Brandon Schneider, Catherine Tsai

**Musculoskeletal: An Analysis of the Musculoskeletal Curriculum at UCSF**
Musa Zaid

**Nutrition Education in the Clinical Years: An Observational study assessing curricular standards and student self-efficacy**
Peter Zaki

**Ophthalmology: Eyes on UCSF: Building the Pre-clerkship Ophthalmology Curriculum**
Evan Shannon, Elizabeth Shen, Stephanie Lynch

**Otolaryngology** *Anatomy Integration across the Curriculum*
Annick Aubin-Pouliot, Divya Thapar

**MD Portfolio Integration**
Marc Parris
Abstract:

With the advent of mobile technology, and the need to streamline gross anatomy instruction materials, UCSF anatomy directors felt the need to keep up with new technology-enabled learning approaches while at the same time, maximize faculty resources by making learning in the anatomy lab more self-directed. In the spring of 2011, the UCSF anatomy faculty piloted an ipad-based presentation for an Anatomy Laboratory session in the Pulmonary Block. The results of this pilot study were positive, and the faculty decided to move forward by creating similar iPad-based anatomy lab manuals for an entire teaching block for first medical students.

Carly Andler and Jensara Clay, two second-year medical students, were chosen to compile the available resources and generate multiple power-point presentations, from which the IT department created an online tool to be accessed during the anatomy laboratory learning session and to be reviewed outside of lab. The resources were gathered from multiple types of media, including gross anatomy atlases, dissected cadaveric images, cadaver dissection videos, and current versions of the UCSF lab manual for first year students.

The effectiveness of this tool will be measured through the use of pre and post surveys completed by both faculty and students. This data will then be used to fine-tune the current version of this tool, and hopefully in the future, direct the creation of iPad-based anatomy lab manuals for other teaching blocks in the preclinical years of medical education.
Purpose: This project seeks to enhance student understanding of movement disorders and the challenges faced by patients with movement disorders through audio/visual explanations of abnormal movements and videos of patients experiencing these disorders. Students who complete the module should be able to describe a patient’s movements, identify which movements are abnormal and be able to offer therapeutic options.

Background: The current curriculum for first year medical students at UCSF on movement disorders as part of the Brain, Mind, and Behavior (BMB) block of the Essential Core (EC) is being revised. This independent learning module (ILM) will serve as background for students, allowing lecture time to be spent focusing on neural anatomy and the art of diagnosis. There is also scant (6 lectures or small groups in the EC) curriculum on disabilities at UCSF as seen in Heather Fel’s Curricular Map from 2009. This ILM hopes to address both of these issues by presenting students with an opportunity to learn about movement disorders at the student’s own pace with access to videos of real patients that can be watched multiple times. The module also references ways in which these disorders can be disabling and how physicians can work with patients to enhance their quality of life. Lastly, there is a section on referrals to other health care professionals (Physical, Occupational and Speech Therapies), which helps enhance the student’s interprofessional learning. The module was also designed to be shared with other health professions schools.

Methods: After a search of shared curricular resources (HEAL and MedEd) it was determined that there are no shared online learning modules on movement disorders from other institutions. Dr. Chad Christine, a movement disorders specialist at UCSF, previously developed an online ILM that is available to medical students, but it is not required for students and it lacks consent for wide use and interactivity. After the literature review, a day of observation in the Movement Disorders Clinic at UCSF was used to obtain first hand knowledge of an assessment of a new patient. Various textbooks and resources on movement disorders were acquired and reviewed for content. Then, the new movement disorders ILM was developed on Articulate Software as a completely interactive experience that requires the student to actively participate in the progression of the module and combines audio as well as visual input and a quiz. Patient videos were acquired from the UCSF Movement Disorders clinic and then edited for use in this module using Quicktime and iMovie. The content was reviewed by the project’s advisors as well as by Dr. Chad Christine. The ease of use of the module was consistently addressed by peer evaluators throughout its development.

Evaluation: The module has been tested by medical student peers and (without videos) by laypeople without medical experience. When the ILM is available to the students, there will be an anonymous optional evaluation that is standard for these modules on the CLE. There will also be a link to Portfolio, which will invite students to discuss their experience working with patients with disabilities now and then in the future after their neurology clerkship.
**Dissemination:** The module was designed to be shared with other medical and health professional schools. The consents for the videos are such that they can be viewed in educational settings, and there is a section on professionalism and proper usage in the module. More immediately, the ILM will be required of students in BMB this spring.

**Reflective Critique:** The feedback received during the module’s development was instrumental in its creation. Articulate has limitations that were unknown before the beginning of the project; limitations which had to be addressed and worked around. A variety of opinions from users helped focus the module and pare down the information presented to the essentials. It was also helpful to gain feedback and confidence in recording audio. Finally, working with a movement disorders specialist on how assessments are actually done in the clinic, not just how the textbooks say they are done, was incredibly powerful and informed the module’s creation greatly.
THREE PILLARS OF CLINICAL SKILLS DEVELOPMENT IN FOUNDATIONS OF PATIENT CARE (FPC): A MOVE TOWARD COMPETENCY-BASED EDUCATION, ASSESSMENT AND LONGITUDINAL ADVISING

Lauren Smith, Stephen Villa, Tina Yu,
Advisors: Anna Chang, MD, FPC Co-Directors Meg McNamara, MD; Heather Nye, MD; Jessica Mullar, PhD; Christina Cicoletti; Azzam, Amin, MD; Daniel Ciccarone, MD

PURPOSE:
To further develop the FPC curriculum and assessment of clinical skills in the competency-based education framework by focusing on a three pillar approach—Physical Examination Skills, Clinical Reasoning skills, and Medical History/Patient Interviewing skills—with the ultimate goal of preparing students for clerkship years.

BACKGROUND:
Traditionally, clinical skills assessment in the pre-clerkship years has been informal and has varied between evaluators. There is a need for uniform assessment guidelines that will decrease inter-observer variation and provide a more standardized approach to the process. The Accreditation Council for Graduate Medical Education (ACGME) Competency Domains Model (Epstein) is designed to help guide assessment through the acquisition of specific milestones in core competency domains. UCSF adopted these identical competencies for Undergraduate Medical Education approximately 4 years ago. However, students and faculty currently lack a clear or consistent definition of what “at competency” truly means. There is a paucity of necessary resources as well, e.g. faculty observers, that proves to be an impediment to frequent observation, and hinders the ability to provide the consistent, formalized, and structured feedback essential to the acquisition of clinical skills. The “Three Pillars Approach to Clinical Skills Development” is our attempt to address the current shortcomings outlined above. Our main goal was to provide a formalized and uniform method of assessment, which includes both direct observation and the use of rubrics to assess performance and record feedback. Also, in an attempt to buttress faculty assessment, we developed tools to facilitate student self-assessment and critical reflection on their clinical skills development.

METHODS:
Each Curriculum Ambassador:

1. Created a longitudinal ideal curriculum for each respective pillar
2. Performed three independent literature searches on each respective pillar
3. Worked with FPC-Co-Directors to develop tangible products to incorporate into FPC curriculum to further the goals of clinical skills acquisition and individualized competency-based assessment. The tools created addressed skills-development in the following areas:
4. Participated in biweekly meetings with FPC Core Co-Directors to obtain feedback on ideas
5. Attended individual weekly sub-committee meetings with advisors for review and feedback on progress of products
6. Conducted a weekly three-point review (Check-in) among team members to review ideas and progress
7. Presented project progress during Curriculum Ambassador consultation meetings to garner specific feedback from peers to refine final product

Physical Exam Skills:
- Consultations
  - University of Washington and Stanford University; Guiding development of benchmarks
  - Rachel Yudkowsky, MD, MHPE Director, Associate Professor Department of Medical Education, University of Illinois; Hypothesis Driven Physical Exam Curriculum; aided in creation of ideal curriculum
  - Conor Ramsden, MD Queens Hospital, Rom Valley Way Romford, Essex; Physical Exam Self Assessment Tool

- Audit of Physical Exam curriculum and curricular mapping
  - Attempt to standardize instruction
  - Highlight potential areas for additional practice with structured feedback

- Audit of Physical Exam Resources
  - Choosing the best resource for students

Clinical Reasoning Skills:
- Clinical Reasoning Assessment
  - Rubric for Integrated Exercise during M&N Block
  - Created a longitudinal assessment tool for both faculty and student use

- I3 Integrated Exercise
  - Highlighted additional ways in which clinical reasoning can be demonstrated during Integrated Exercise
  - Outlined more opportunities for student self-assessment of clinical reasoning during exercise

Medical History/Patient Interviewing Skills:
- Medical Note Writing
  - Development of Medical Note Writing Module (online)
  - Development of Medical Note Writing Workshop
  - Development of facilitator guide for Medical Note Writing Workshop
  - Development of medical note writing self-assessment tool for students and advisors

- Patient Interviewing Skills
  - Development of on-line portfolio-based “Preceptorship Tracker” for critical self-reflection and plan for improvement

EVALUATION PLAN:
Physical Exam Skills:
The products created for this pillar include:
Faculty Development Handbook for the Physical Exam Skills Sessions
Oral Case Presentation Evaluation Form
Preceptorship PE Skills Evaluation Form
Student-driven PE Skills Self-Assessment.

As of now, we have made minimal changes to the existing curriculum. We plan to work within the current evaluation framework to fine-tune the products created, which will guide how to best proceed with additional changes in the future.

Clinical Reasoning Skills:
The template/rubric will be assessed using student surveys looking to determine usefulness and find areas of improvement.

**Medical History/Patient Interviewing Skills:**
Students are asked to complete a short survey following completion of the Medical Note Writing online module on the UCSF-CLE webpage. We want to collect feedback on perceived usefulness of the module and the relevance of material covered in the module. We will also create an online survey for first year medical students to complete after participating in the Medical Note Writing Workshop. We want to collect feedback on the perceived usefulness of the new active learning session, the students’ ability to meet session objectives and the how we can improve the session in the future.

**DISSEMINATION:**
All faculty working in FPC will be given a faculty handbook, facilitator’s guide and student rubrics to guide assessment and advising for students. Within introductory lectures to physical exam, preceptorship and small group sessions, student assessment tools will be highlighted to students for self-assessment throughout the year. Student self-assessment tools will be available through Portfolio.

We also plan to explore the possibility of submitting our material to MedEdPORTAL and will consider a post-evaluation submission to Medical Education’s Really Good Stuff.

**REFLECTIVE CRITIQUE:**
The need for formalized, consistent, and structured assessment and feedback is essential to the achievement of competency-based education. Our project culminated in the development of numerous tools that students can utilize to assess their progress toward achieving clinical competencies as well as use as evidence to document their progress in these domains.
OBJECTIVE-BASED LEARNING ASSESSMENTS FOR GLOBAL HEALTH 101 COURSE

Jessica Harris, University of California San Francisco, Jessica.harris@ucsf.edu
Christopher Stewart, University of California San Francisco, CStewart@sfghpeds.ucsf.edu

PURPOSE:
The objective of this project was to create an on-line quiz for each session of the UCSF Global Health 101 course, to enhance a move to web-based curriculum. The goal was to develop quiz questions that: 1) incorporated best practices 2) matched the course learning objectives and 3) stimulated review and learning when students selected incorrect answers.

BACKGROUND:
Global Health 101: Introduction to Global Health is a required introductory course for students from across all UCSF schools interested in the Global Health Pathways. The course focuses on basic vocabulary and concepts in global health. The curriculum includes on-line modules, classroom-based seminars with discussions, interactive case studies, and weekly quizzes. Prior to this project, existing quizzes were paper-based and written to only to ensure that students completed assigned reading. As the course moves to an on-line asynchronous option to accommodate the diversity of UCSF trainees’ schedules, the new quizzes are an important tool to ensure that students have reviewed and understood key topics within the required material.

METHODS:
Weekly assigned on-line modules, learning objectives, class notes, and existing quizzes were reviewed prior to question-writing. Multiple choice, matching, and true/false quiz questions were then written based on course learning objectives, following question-writing best practices by Dr. Susan Masters. Explanations were written to accompany the different answer choices, and students will be encouraged to click on multiple answer choices to view the different explanations for their own learning purposes. However, students will be graded only on their first answer choice submitted, so that quizzes will still be used for student evaluation purposes. Quizzes were posted to the CLE Global Health 101 course for review and future iteration.

EVALUATION PLAN:
Quiz questions were submitted to the course instructor, Pathways graduate students and other global health education professionals for review and feedback. Five questions were added for evaluation purposes to the online quizzes, asking for feedback on content, difficulty-level, question clarity, and more. This data is still being collected from current Pathways students taking the quizzes.

DISSEMINATION:
Quiz questions, once refined, will be available on the CLE course. They will also be shared with the Global Health Education Consortium, where the entire course will be offered as a model for an introductory Global Health course to institutions without resources to create their own.

REFLECTIVE CRITIQUE:
It was challenging to construct questions at the appropriate difficulty level, and to evaluate the use of the quizzes as a learning tool. Feedback was gathered through a presentation to Curriculum Ambassadors in July and from Pathways students in September. This information will be used to edit and refine quizzes prior to the 2012 Global Health 101 course in the winter.
(1) LONGITUDINAL MAPPING OF MICROBIOLOGY/INFECTIOUS DISEASE IN THE MEDICAL SCHOOL CURRICULUM and (2) SELF-DIRECTED LEARNING DURING THE SECOND-YEAR MEDICAL STUDENT MICROBIOLOGY COURSE

(1) Jeffrey Doyon (Jeffrey.Doyon@ucsf.edu), (2) Emily Watkins (Emily.Watkins@ucsf.edu), Brian Schwartz, and Peter Chin-Hong

School of Medicine and Division of Infectious Diseases, UCSF

PURPOSE: (1) To improve the integration of microbiology/infectious diseases (ID) content across the medical curriculum. (2) To improve students’ ability to organize complex microbiology material and integrate with clinical infectious diseases practice.

BACKGROUND: (1) ID is a multisystem discipline that spans all of medicine taught in the Essential Core (EC) and Clinical Core (CC) curricula. Unlike other multidisciplinary subjects such as Social and Behavioral Sciences, which are explicitly taught longitudinally, the ID curriculum is concentrated in the second-year medical student (MS2) microbiology course and then distributed throughout the rest of the curriculum in an unstructured format. Until now, there has not been an effort to explicitly link ID objectives and content throughout the medical school curriculum. This has led to inconsistencies in content presented and confusion among learners. (2) The MS2 microbiology course has been organized from the viewpoint of the microbiologist, (organism-based) and not from the viewpoint of the physician (syndrome-based). This has made it challenging for MS2s to conceptualize the applications of ID content to patient care.

METHODS: (1) We analyzed syllabi and online materials from EC and CC curricula for microbiology content. We reviewed course objectives and lecture slides, and interviewed and corresponded with clerkship directors. We mapped this data to specific ID lectures from the curriculum and created a searchable database of curricular material which contained a summary of lecture content, the physical location of the material in the syllabi, and the specific course objective. Each topic was linked to subject headings that map to major ID subjects. As a quality control measure, all syllabi were then searched with key microbiology words. Using this map, we developed recommendations for curricular changes. (2) We reviewed syllabus objectives and associated textbook chapters, and developed organizational tools to assist students in their study of these topics. These were storyboarded as worksheets and then digitized using Adobe InDesign and Adobe Illustrator. Course directors and students reviewed worksheets for relevance to course goals and clarity. The feedback gained from these reviews was utilized to restructure and refine each worksheet. We compiled finished worksheets into one writeable PDF document for easy distribution, printing, and computer-based completion.

EVALUATION PLAN: (1) At the end of the MS2 microbiology course we will query students about the integration of ID topics between MS1 year and the MS2 microbiology course. We will collect data for 2011 and 2012, before the interventions are put in place, and then in 2013 and 2014 after the interventions to determine their effectiveness. We will also evaluate the effect of the integration between MS2 microbiology course and the CC by sending out an evaluation to the graduating classes for 2012-2014 to get a baseline from before the interventions. We will continue the evaluations in subsequent years, after the interventions to determine their effectiveness. (2)
We will request that students who use the worksheets fill out an anonymous survey regarding their usefulness and we will also create a message board for students to suggest topics for future worksheets and submit feedback on those currently available.

**DISSEMINATION:** (1) The curriculum map and final report will be made available electronically to the course directors. These documents will also be posted to Portfolio, where they can be accessed by interested stakeholders. (2) Worksheets will be distributed to the class of 2014 via the CLE, to be used as study aids for the I-3 exam and USMLE Step I, and as references for the MS3 and MS4 clinical years.

**REFLECTIVE CRITIQUE:** (1) In the short term, we will receive feedback on the recommendations for curriculum changes from the block directors, which will ultimately affect the changes that we enact. In the long term, we will use the student evaluations to guide further changes. (2) For the worksheets, we will use the feedback from the student evaluations to guide revisions of the worksheets and to determine areas for the development of new curricular materials.
Improving Interdisciplinary Collaboration through IPHE Curriculum

Medical errors arise from lack of collaboration and miscommunication among health professionals (Fewster-Thuente & Velsor-Friedrich, 2008). In 2010, the World Health Organization concluded that “interprofessional education enables effective collaborative practice which in turn optimizes health-services, strengthens health systems and improves health outcomes” Six years ago, UCSF implemented an interprofessional health education (IPHE) curriculum for all first year learners. The 2010-11 student feedback and current IPHE literature underscore the importance of engagement in group-based, authentic interprofessional work (Reeves, Goldman, Oandasan, 2007 and 2011). Discussions with 2010 developers (Fitzsimmons et al., 2010; Samore et al, 2011) highlighted the failure of standard IPHE assessment tools to measure achievement of learning objectives or significant changes in attitude toward IPHE or teamwork. In response, we enhanced the 2010 curriculum in four ways:

1) more extensive small group, longitudinal interaction, including creation of a new problem-based learning case appropriate to first-year learners from all UCSF professional schools
2) longitudinal group projects addressing authentic UCSF clinic and San Francisco community needs
3) a new competency-based pre- and post-curriculum assessment tool
4) expanded recognition for participant learning, including academic credit, presentation of group achievements at a UCSF symposium, and awards

All online discussion will advance project work creating optimal conditions for use of blended learning. The newly enlisted clinics and community partners launches the campus mission to identify sites for IPHE learning and the new assessment tool will contribute to efforts at and beyond campus to identify metrics linking education to interprofessional teamwork competencies.
Curriculum Ambassadors: Atoosa Firouzian, Brandon Schneider, Catherine Tsai
Primary Advisers: Drs. Tracy Fulton, Leslie Zimmerman
Departmental Advisers: Drs. Rageshree Ramachandran, Pathology; Emily Webb, Radiology; Douglas Schmucker, Histology; Margaret McNamara, FPC; Christy Boscardin, Content Evaluation

TITLE: “Development of Integrated Essential Core Practical Examinations”

PURPOSE: To develop an integrated, computer-based practical examination for the Metabolism and Nutrition (M&N) block that assesses students’ knowledge of anatomy, radiology, pathology and histology through interactive case scenarios, which can serve as a model for exams in other blocks.

BACKGROUND: Due to time constraints and complex exam day logistics, practical exams in M&N have traditionally contained a small number of questions, which has tended to drive emphasis on either factual recall or isolated extremely difficult concepts from each individual discipline. The new Teaching and Learning Center (TLC) offers a wealth of resources that can be utilized to overcome the limitations of the current paper-based practical exams. Our project aims to create a clinically-oriented on-line exam that tests students’ abilities to integrate case presentations with lab data and images, allowing for higher-level reasoning and critical thinking.

METHODS: The content of the exam was developed and verified through extensive meetings with our primary advisers and discipline representatives. Each of the three ambassadors wrote a single case, which we individually stewarded to completion. Each question was drafted to specifically test one or more of the stated laboratory or lecture objectives. Advisers from radiology, histology, pathology and FPC all provided specific input on each question, as well as on the flow of the cases as a whole. We also received feedback from fellow ambassadors at our project consultation sessions. After all the cases had been drafted, we worked together to film physical exam videos, computerize the exam, and write the post-exam survey. In addition, we developed an “exam blueprint” designed to track objectives, cognitive skills, and disciplines addressed in each question and in the exam as a whole. Finally, we designed a practice exam to allow students to gain familiarity with the new exam style.

EVALUATION PLAN: To address student satisfaction, a 10 question survey will be administered after the exam that inquires about the difficulty of the exam, how effectively media was integrated into the test, and students’ general satisfaction. This survey has already been approved by Arianne Teherani

DISSEMINATION: We have already begun dissemination of our best practices and findings locally, to EC course directors at ECCC, and will continue to promote the advantages of on-line testing and an integrative format.

REFLECTIVE CRITIQUE: There were multiple components to our project, and we set ambitious goals to create an exam that was comprehensive and integrative. The strongest elements of our exam are the case-based format and the integration of images and videos that walks students through a clinical scenario. During drafting of the cases, we met some obstacles such as limitations to the exam writing software, delayed responses from key people, and difficulty gaining consent to film or photograph real patients. We did our best to collaborate with one another and with the faculty to overcome these obstacles. From this experience, we have learned...
a great deal about exam writing and working with the educational system. Presenting our project to peers and faculty and receiving feedback has greatly improved the quality of our product, which we hope will improve students’ satisfaction with and learning from their practical exam in M&N.
An Analysis of the Musculoskeletal Curriculum at UCSF
Musa Zaid, UCSF School of Medicine, Class of 2014
Faculty Advisor: Dr. Coleen Sabatini

Numerous studies have demonstrated inadequacies in musculoskeletal education in American medical schools. Unfortunately, UCSF students are not exempt from this reality. UCSF medical students score at the national mean on musculoskeletal related questions on the USMLE Step 1, while scoring well above the national mean in all other subjects. Furthermore, UCSF students score below the national mean on the musculoskeletal section of the USMLE Step 2CK. Additionally, exit surveys have demonstrated that graduating UCSF medical students have identified their musculoskeletal education as inadequate relative to the national average. This evidence highlights that there are gaps in the musculoskeletal curriculum at UCSF that are preventing students from scoring higher on the USMLE Boards as well as feeling competent when evaluating musculoskeletal complaints of their patients. The purpose of this curriculum ambassador project was to catalyze the creation of a musculoskeletal curriculum for 1st year students at UCSF. To this end, this program included many ground-laying components. Initially, we conducted a literature review on medical school musculoskeletal education and examined the general inadequacies across US medical schools. Subsequently, multiple comparable medical schools were contacted to learn more about their musculoskeletal curriculums for medical students. Of ten comparable institutes contacted regarding musculoskeletal curriculum, eight had a formal MSK block within the first or second year. To increase student confidence in performing a focused musculoskeletal exam, we created interactive independent learning modules which highlight the knee and shoulder physical exams until more formal MSK exam sessions can be added to the curriculum. Additionally, we are planning a musculoskeletal focused physical exam session that will be offered to second year medical students before starting clinical rotations. We are hoping to utilize student surveys and feedback to evaluate student confidence levels with performing an exam, as well as satisfaction with the modules. Overall, the work of this Curriculum Ambassador Project has has helped to establish a foundation for the ongoing development of a musculoskeletal curriculum module here at UCSF, while at the same time providing important tools now that students can use to improve their musculoskeletal knowledge.
**Nutrition Education in the Clinical Years:**

**An observational study assessing curricular standards and student self-efficacy.**

Peter Zaki MSII, Christy Boscardin PhD & Andrea Garber RD, PhD

**PURPOSE:** To evaluate 3rd and 4th year UCSF medical students’ self-confidence to perform Nutrition-Related Skills (NRS).

**BACKGROUND:** Physicians must be competent in nutrition knowledge and skills to effectively deliver patient care today, when poor nutrition and physical inactivity is the second leading cause of death in the U.S. (1). Most opportunities to apply nutrition knowledge and practice related skills occur during clerkship years (3 and 4). Lack of skills-based training is a recognized barrier to physician practice in many areas (2).

**METHODS:** We searched the UCSF online Community Learning Environment to identify nutrition-related learning objectives in core clerkships. These were cross-referenced with the NIH Nutrition Academic Award guidelines to yield a list of 8 key NRS: 1.) take a diet and physical activity history; 2.) utilize medical history to evaluate nutritional status and risk; 3.) use labs, vital signs and anthropometrics to evaluate nutritional status and risk; 4.) evaluate growth and development; 5.) employ effective counseling; 6.) consult with or refer to a registered dietitian (RD); 7.) utilize educational materials and resources; and 8.) communicate in a culturally competent manner. Questionnaires were created asking students to rate their level of confidence to perform these NRS on a 0-10 scale. 335 questionnaires were disseminated via Checkbox at the beginning of year 3, pertaining to the first clerkship completed (family and community medicine, pediatrics, surgery, neurology/psychiatry, anesthesia, medicine and obstetrics/gynecology) or beginning of year 4, referring to all 3rd year clerkships in general. Unpaired t-tests compared confidence between 3rd year and 4th year students.

**EVALUATION:** Forty-six 3rd year students and fifty-two 4th year students (29% of total sample) self-administered the questionnaire. Mean (SD) confidence was 6.20 (1.26) across all skills. Confidence was highest for NRS 6 (7.06 (2.13)) and the lowest for NRS 2 (5.32 (1.93)). 4th year students had significantly higher confidence than 3rd years in NRS 3 (7.54 vs 5.82, p<0.001), NRS 5 (6.65 vs 5.77, p<0.05), and NRS 8 (6.54 vs 5.68, p<0.05). We found that medical students’ confidence to perform nutrition-related skills was not low overall. However, higher self-efficacy in the 4th year as compared with the 3rd year, consistent with sufficient practice to master skills, was only seen in 3 areas. These findings point to 5 areas where additional skills-based training is needed during clerkship.

**DISSEMINATION:** A comprehensive report describing the NRS and training gaps identified here will be presented to the clinical clerkships operational committee (CCOC). The Nutrition Theme leader will work with clerkship directors to identify additional skills-based training opportunities and methods of evaluation.

**Reflective Critique:** The creation of tailored surveys for online self-administration allowed us to target a large study sample anonymously. On the other hand, this process was labor intensive and yielded a relatively low response rate. However, these surveys are now available for use in other venues and could be administered in person on paper. Future investigations using these study tools should address the limitations of the current study, including the cross-sectional design and insufficient data to compare individual clerkships.
Eyes on UCSF: Building the Preclerkship Ophthalmology Curriculum
Stephanie Lynch, Evan Shannon, Elizabeth Shen, UCSF School of Medicine, Class of 2014
Faculty Advisor: Dr. Jacque Duncan

ABSTRACT

Purpose: To evaluate the UCSF Essential Core ophthalmology curriculum, to identify deficits in core clinical skills and medical knowledge, and to address these gaps by contributing new material to the curriculum.

Background: Ophthalmic skills are crucial for recognizing ocular complications of systemic disease in conditions as common as diabetes or as rare as Wilson’s disease. Ocular conditions are also common in the primary care setting. Although all physicians should have the necessary skills to identify ocular diagnostic signs, undergraduate medical rotations in clinical ophthalmology are not required at most medical schools, including UCSF. Because curricular content in ophthalmology has been steadily declining, the Association of University Professors of Ophthalmology (AUPO) commissioned a medical education task force to delineate skills integral to the core curriculum of medical students. Currently, it is unknown which recommendations for ophthalmic teaching are being taught at the UCSF School of Medicine.

Methods: We completed a comprehensive evaluation of ophthalmology material in the first- and second-year curricula. Our findings demonstrated that UCSF’s curriculum did not meet many AUPO recommendations. The comprehensive overview revealed that the UCSF curriculum addressed 15 of the 33 (45%) items recommended for inclusion by the AUPO. Our team created additions to the Essential Core Curriculum to address 11 teaching points recommended by the AUPO. The new curricular material include a revised Foundations of Patient Care (FPC) Ophthalmoscope session; an online module/website devoted to Clinical Ophthalmology; a pharmacology-based, graded assignment for Prologue; additions to lectures in Brain, Mind & Behavior (BMB); additions to a small group case in Metabolism & Nutrition (M&N); and an addition of a Life Cycle Independent Learning Module (ILM) on eye conditions in the aging population. With the new material created by the current project, the revised curriculum fulfills 26 of 33 (79%) of the AUPO guidelines.

Evaluation Plan: Evaluations of the project will include comparing the number of syllabus materials relating to ophthalmology before and after our project, tracking the number of hits on the Clinical Ophthalmology website and reviewing evaluations of the online modules, comparing student performance during the FPC SCOPES session before and after our project, and analyzing student performance on and evaluations of the Prologue assignment.

Dissemination: Project materials will be available to all UCSF medical students.

Reflective Critique: We received survey data from students in the Class of 2014 regarding their opinions on the current state of ophthalmology curriculum. Our faculty adviser Dr. Jacque Duncan provided us with invaluable feedback throughout the process. The ECCC and CCOC identified several opportunities for expanding our project to the clerkship years. Feedback from the other curriculum ambassadors at project consultation sessions was incorporate.
OTOLARYNGOLOGY ANATOMY INTEGRATION ACROSS THE CURRICULUM

Annick Aubin-Pouliot, MS2, Divya Thapar, MS2
Faculty Advisor: Anna Meyer

PURPOSE: To develop a comprehensive online ear Independent Learning Module (ILM) for medical students of all levels, as well as, a worksheet on otoscopy for first year medical students. The ILM includes a section on ear anatomy and physiology, a section on how to use the otoscope, and a section on ear disease manifestations commonly seen in third and fourth year clerkships. The ILM integrates otolaryngology topics on the ear across the UCSF School of Medicine Curriculum and is a tool to be used by medical students of all levels. The worksheet is designed to be utilized by first-year medical students during their scopes sessions in order to gain more skill using the otoscope.

BACKGROUND: Considering the frequency with which primary care physicians encounter ear, nose, and throat-related disease, one would expect a solid representation of this material in the core curriculum. However, very little Otolaryngology-Head & Neck Surgery (OHNS)-related material is currently taught as part of the medical school curriculum. The material that is taught is scattered throughout Organs, M&N, and BMB, showing that knowledge of OHNS-related anatomy, physiology, and pathophysiology is important for numerous areas of medicine. A stronger framework in OHNS knowledge would benefit medical students, no matter what field they choose.

METHODS:
-- Performed a curricular review to determine how OHNS-related topics are being taught to medical students both at UCSF, as well as in other US and Canadian medical schools.
-- Examined the American Academy of Otolaryngologists guidelines for graduate medical education to determine which educational topics should be emphasized in undergraduate medical education.
-- Met with the anatomy department to determine what topics they felt were not being adequately covered in the essential core curriculum.
-- Contacted clerkship directors to determine the most common OHNS presentations in each clerkship, as well as the areas they felt students could most benefit from having increased instruction.
-- Worked with the Ophthalmology team and FPC directors to revamp the scopes session during BMB as well as incorporate a scope component in the HEENT physical exam during Prologue.
-- Designed the ear module with the use of Adobe Illustrator, KeyNote, and QuickTime.
-- Used Clinical ENT: an illustrated textbook 2nd edition by O’Donoghue et al. as well as feedback from Dr. Anna Meyer for the ear disease manifestations component of the ILM.
EVALUATION PLAN: A survey was given to entering UCSF MS2s assessing their comfort with the ear curriculum that they learned their first year. The same survey questions will be administered to next year’s entering MS2s to assess whether comfort with ear-related material has improved. We also plan on soliciting feedback from Drs. Lawrence Lustig, Margo Vener, and Dana Rhode, all of whom we consulted during the creation of the ILM. We will also collect feedback from users of the ILM using a feedback link that is on the CLE page where the ILM is housed. We also included a survey with the scopes session handout to assess students’ comfort with the otoscope after that session. The survey also has a space to collect feedback.

DISSEMINATION: Our module will be available on iRocket for access by students of all levels. It will be referenced in appropriate lectures and physical exam sections and available as a link on the calendar page for those lectures, as well as on the appropriate clerkship websites. We also plan on submitting the ILM to MedEdPortal.

REFLECTIVE CRITIQUE:
-- Dr. Margo Vener, the Family and Community Medicine Clerkship Director was solicited and gave us feedback regarding the component of the ILM that is designed for students on that rotation. She asked us to include a section on otitis externa, otitis media, presbycusis, and otoscopy. We were already including those topics in the ILM, but we made sure to include them in the area of the ILM for students on rotations.
-- The content of the ILM was reviewed by Drs. Lawrence Lustig, Anna Meyer and Dana Rohde, and will continue to be updated during the “trial” phase of the module by OHNS residents and faculty, as well as medical students.
-- Feedback was also received from fellow Curriculum Ambassadors during project consultations, as well as from our faculty advisor, Dr. Meyer, throughout the summer.
MD Portfolio Integration
Marc Parris, MS-II
Karen Hauer, MD, Phaedra Bell, PhD
Kristen Fitzhenry, EdM

Background
The MD Portfolio is an online platform used by UCSF medical students to document competency based assessment progress. Students are required to submit materials to this platform and provide critical reflections in an effort to self-direct learning towards achievement of the six core competencies endorsed by UCSF and the Accreditation Council for Graduate Medical Education (ACGME). Students, however, found difficulty understanding the purpose and technical use of MD Portfolio, as well as how it currently relates to the first-year medical school curriculum.

Purpose
The purpose of this project was to redesign the initial student orientation and the introduction activities on MD Portfolio and to create more exercises that reinforce the value of MD Portfolio throughout the first half of the academic year. In addition, this project aimed to facilitate students’ use of MD Portfolio by connecting current curriculum activities to MD Portfolio materials, and integrating all MD Portfolio materials, such as assignments, calendars, and tutorials, into a revamped MD Portfolio Handbook.

Methods
Student evaluation data, along with faculty expert analysis of student evaluation data, was reviewed and used as source to determine the student perception of MD Portfolio. Faculty analysis in the Executive Committee on Assessment and MD Portfolio (ECAMP) Strategic Report was analyzed and informed how project materials could help advance competency based assessment as it relates to the UCSF curriculum. Daily consultations with key stakeholders and student input from former and current curriculum ambassadors guided workflow and assessed project progress.

Evaluation Plan
First year students will be asked to evaluate the Introduction to MD Portfolio lecture given during orientation with an E-value survey for clarity and effectiveness. Students will also be a part of two focus groups in November/December and April/May that will assess student perception, understanding, and use of MD Portfolio in their academic year. Specifically, students will be asked about how well MD Portfolio is integrated into their curricular work, how the MD Portfolio Handbook integrates MD Portfolio resources, and how effective the created resources were for their work. Lastly, students will submit a final E-value survey at the end of the academic year, requesting thoughts on MD Portfolio regarding its use and relevance.

Dissemination
This work will be presented to the Class of 2015 during their orientation week in a series of lectures about competency based assessment and MD Portfolio. Students will also attend an MD Portfolio workshop in their second week of class, where they will be introduced to the Class of 2015 MD Portfolio Group, the main dissemination outlet for the revised MD Portfolio Handbook. Students will also receive updates and access to these materials through this MD Portfolio group and course websites by Undergraduate Medical Education, Essential Core, and Foundations of Patient Care administration.
Reflective Critique

It was challenging to identify the changes that could be directly affected by this project in a large and complex curriculum and to design an appropriate assessment of the project. During project feedback sessions, curriculum ambassadors and faculty helped determine some of the vital changes that this project needed to target, especially regarding the content and format of the various Introduction to MD Portfolio orientation sessions.