Project 1

Title: Independent Learning Resources for Development, Structure & Function (DSF)

PI: Lela Giannaris, PhD, Department of Radiology

Interview required: Please schedule an interview if you are interested in applying. Note: this program is different from the summer prosection program. Please contact PI at EustathiaLela.Giannaris@umasmed.edu

Description:

The goal of this project is to enhance and expand the collection of educational resources for independent student learning in DSF, primarily related to the anatomical sciences. These educational materials would be utilized as online self-assessment and review resources, in hands-on dry lab sessions, and/or functional sessions. Faculty will oversee the design, implementation and evaluation of these resources. The student will collaborate with faculty to develop new and revised educational modules and have the opportunity to shape the design of these materials based on his/her own experiences with the curriculum.

Student’s role:

- Review and evaluate the current inventory of independent learning resources in the DSF course
- Work with faculty to improve current resources and develop a plan for new resources incorporating feedback from faculty and students
- Create new self-study learning modules (e.g. interactive pdfs with an image/case of the day)
- Collaborate with faculty to develop case-based self-assessments for application, review and consolidation of information
- Draft a plan to evaluate the self-directed learning resources by developing questions for future student evaluations
- Meet regularly with faculty to discuss progress and project development

Preferred student skills:

- Interest in anatomy curriculum development
- Ability to work both independently and collaboratively
- Proficiency with PowerPoint and PDF creation

Time required for the project: 8 weeks
Project 2

Title: Using Interactive learning videos and computerized interactive case presentations to enhance medical student learning in the neonatal ICU

Faculty: Sanjay Aurora MD, MPH and Nasim Gorji, DO

Description:
The purpose of this project is to enhance the current FCE course by adding innovative learning tools. We hope to achieve this by integrating learning videos, establishing a reading curriculum, as well as building computerized interactive case presentations into the curriculum. The learning videos will be short videos on the following topics: normal newborn exam, comprehensive neurologic exam, signs of neonatal abstinence syndrome, and basic neonatal resuscitation program skills. We believe that interactive learning is important to retention of knowledge. As part of this project, we will design and build a number of computerized, interactive cases for students to participate in during their FCE rotation. Case topics will include: respiratory distress syndrome, sepsis, basics of delivery room management, common dermatologic issues, ethics and end-of-life issues, and necrotizing enterocolitis. This will integrate and enhance their knowledge of disease pathophysiology into real life cases in the NICU. Subsequent students that rotate through our NICU will be able to use these interactive online NICU cases to build upon their knowledge from rounds. A pertinent article will be linked to the end of the case for the student to read further upon.

Student's role:
The student will help build these interactive cases using PowerPoint and will help film and edit the various learning videos that will all be stored in a learning library.

Estimated time: 4 weeks


**Project 3**

**Title:** Needs Assessment, Feasibility, and Plan for Advocacy Skills in the PURCH DCS Curriculum

**PI:** Rebecca Blanchard, PhD, Assistant Dean of Education, UMMS-Baystate & Raquel Belforti, DO, Curriculum Chair, PURCH Track & Sarah McAdoo MD, MPH, Capstone Advisor, PURCH Track

**Description:**
This project explores the feasibility, scope and design of an advocacy component into the 1st and 2nd year UMMS-Baystate DCS Course. The augmented curriculum will create a pathway to action in which students gain skills to advocate for changes to health programs, policies and the practice of community health that supports and enhances the learning objectives and content of the DCS material. This curriculum could include; developing advocacy skills, designing advocacy strategies, and/or the application of those skills through an experiential opportunity to address a community health need. The process to develop the curriculum will include the following components:

- Develop a needs assessment of target learners
- Create goals and objectives
- Identify educational strategies
- Design an evaluation and feedback plan

**Student’s role**
The student’s primary role will be to create and implement the needs assessment of targeted learners to help identify the goals and objectives of the advocacy curriculum. This process includes a review of relevant literature and existing models and the development and implementation of a survey to UMMS-Baystate students. In addition, the student will participate in a design thinking process with PURCH faculty to identify educational strategies to increase the application of advocacy skills to health equity.

**Outline**
- Background research
- Create needs assessment of learners
- Summarize findings from the needs assessment
- Identify curriculum course objectives and goals
- Participate in design thinking process to identify educational strategies

**Preferred student skills:**
Interest in education, curriculum design, and/or advocacy would likely improve the student’s experience

**Estimated time required for student’s work to complete the project (in weeks, up to 8)**
Project 4

Title: Community programs to prevent the top injuries that come into the Hospital

PI: Michael Hirsh, MD

Description:
The injury prevention department runs programs year-round regarding firearms safety, fall prevention, teen driving safety and car passenger safety (car seats). All of these programs are curriculum driven. The program that a medical student could help the most with is our Mobile Safety Street program. Mobile Safety Street is one of our long-standing programs that is currently not running. We need assistance to update the curriculum so that this program will serve several populations:
Elementary age- pedestrian and basic home safety
New parents- “baby proofing”
Geriatric- fall prevention


Student’s role:
• Student will work directly with the Injury Prevention Coordinator to create new curriculum for the Mobile Safety Street program using the 10 steps to effective advocacy approach.
• Student will research best practices and advise accordingly.
• Student will partner with local agencies to help advise for best practices in new curriculum.

Preferred student skills:
• Interest in Injury Prevention.
• Experience or interest in creating age appropriate interactive curriculum.
• Self-starter, self-motivated.
• Organized.
• Creative.

Estimated time required for student’s work to complete the project in 6 weeks
Project 5

Course: Cancer Concepts

Faculty: TJ Fitzgerald, Professor/Chair Department of Radiation Oncology

Description:
Under the supervision of Dr. Moni, Ms. Bishop-Jodoin, and colleagues of the University oncology community, cancer concepts has been a highly successful course in our medical school. Both the didactic and small group format have been well perceived by both faculty and students and, in completion assessment, the course receives strong grades from students. The text for the course is unique and was developed in an online format written by University oncology faculty from all oncology disciplines. The text needs to be updated and modernized in multiple areas including disease based chapters as well as additional chapters in genetics, proteomics/genomics, palliative care, and global oncology. Our students are well positioned to make a strong impact in the quality of the text and their participation can serve a dual purpose in career development for those with a potential interest in oncology as a career choice. Since the text targets students and early oncology professionals including allied health, our medical students will succeed in this effort and help further promote the success already enjoyed by this course. Student participation will also serve to bring more student perspective into course development.

Student Role:
Each student will be paired with faculty responsible for the successful completion of each chapter. The chapters will be written for both disease based interdisciplinary management (CNS, H/N, Lung, etc) and well as discipline topics (genetics/principles of radiation oncology, etc). The student s will be assigned to faculty based on their interest/goals. The chapters are generally 6-8 pages (references excluded), therefore achievable for our student population.

Student Skills:
Basic writing and computer skills will be sufficient to complete tasks

Time:
Each student will be assigned two charters with the goal of completing one chapter per month of work.
Project 6

**Title:** Hand-off & Sign-out Curriculum and Expectations in the Fourth Year

**Courses:** Internal Medicine Sub-Internship, Family Medicine Sub-Internship, Pediatrics Sub-Internship, and Surgery Sub-Internship

**Co-facilitators:** Trish Seymour, MD (Family Medicine Sub-Internship Director), Majid Yazdani, MD (Internal Medicine Sub-Internship Director), Eric Mick, PhD (Advanced Studies Curriculum Committee Chair)

**Description:**
Because of an increasing body of evidence documenting a performance gap between medical school and residency training, the AAMC published guidelines in May 2014 to provide expectations for all medical students and schools regarding activities that they should be able to perform upon entering residency (https://www.aamc.org/initiatives/coreepas/). These entrustable professional activities (EPAs) are addressed progressively over the full range of clinical experiences and years. In the fourth year of medical school, during their acting internships/sub-internships, students are often expected to participate in hand-offs for patients for whom they are primarily responsible. This is an essential skill in any residency program. This correlates to EPA 8 (Give or Receive a Patient Handover to Transition Care Responsibility) but, like many medical schools, the University of Massachusetts Medical School (UMMS) has no standardized curriculum regarding this activity.

UMMS offers diverse opportunities for sub-internship experiences in four fields of medicine at numerous sites but the need for safe transitions of care for patients between providers or teams is universal. In order to consider standardization of our hand-off curriculum we believe it is necessary to survey current practices and expectations. The student would meet with all sub-internship site directors to ask standard questions about hand-off/sign-out expectations for sub-interns at their site, collect any written or electronic hand off curricular materials, and then will observe both AM and PM sign-out at each site at least once to observe the sub-intern in practice. Both qualitative and quantitative information will be gathered during these visits. In terms of an assessment tool, we will consider using the AAMC EPA #8 toolkit, particularly the graphic with Key functions/related competencies (behaviors requiring correction, developing behaviors, expected behaviors for entrustability) for hand-offs. The student would meet weekly with one of the co-facilitators (listed above) and would compile a report and present to the UMMS Advanced Studies Curriculum Committee at the conclusion of their work.

There is a potential for future work developing the standardized hand-off curriculum and potential publication.

**Student Requirements:**

- Confidence to meet with faculty and insert self into clinical situations (sign-out)
- Transportation must be provided by the student
- Self-initiation to set and maintain a site visit schedule and analyze data

We estimate that this work will require 6-8 weeks of time.
Project 7

**Title:** Oral Health Curriculum at UMMS - Review and Enhancement Project

**PI:** Hugh Silk, MD, MPH  
(hugh.silk@umassmed.edu)

**Description:**
A few years ago, oral health was expanded within the UMMS curriculum to include some oral health within anatomy, physiology and infectious disease lectures and lesson. There is an oral health interstitial day and oral health is included in the PD 1 course. However, many courses still do not have oral health content even where it is relevant. With dental caries being the most prevalent chronic disease of childhood and the Institute of Medicine publishing two papers about the role of medical providers in oral health, we have more work to do at UMMS.

This project will include taking a full inventory of every course at UMMS over the first three weeks of the eight-week project. This will include an email, phone call or in person meeting with course leaders and/or a review of course content. The next five weeks will include offering course leaders a “tweak” of their curriculum to include slides in a lecture or a case study for a course. Dr. Silk has examples from around the country that can be used. As the plan evolves, the student will help create a “map” of the oral health curriculum at UMMS so that it can be presented as a best practice. The student might also have the opportunity to present this work to the Longitudinal Curriculum Committee which is identifying topical areas that would enhance the curriculum if content could be woven in over the full four-year curriculum. Dr. Silk and some of the research faculty/staff within the Department of Family Medicine and Community Health are also working on a 5-year HRSA training grant to integrate oral health into primary care among residency and fellowship training sites (e.g., Family Medicine, Pediatrics, Geriatrics, etc), mid-level training programs (e.g., nurse practitioner, PA, and midwifery), as well as dental schools, medical schools, and DO schools. The student will have the opportunity to work on various components of this training grant helping to assess current curricular offerings nationwide and identify strategies to incorporate more oral health teaching within a variety of primary care training programs.

**Student’s role:**
- Meeting twice weekly with faculty lead Dr Silk.
- Reviewing courses at UMMS to see what oral health is covered.
- Emailing, calling, and meeting with faculty.
- Reviewing course plans and lectures.
- Creating curriculum with Dr Silk’s help including slides, cases, videos, and flipped classroom materials with prepared modules that be watched online.
- Mapping the oral health curriculum at UMMS as a powerful visual for the UMMS website and for presentations as a “best practice” curriculum for other schools to utilize.

**Preferred student skills:**
Confidence to meet with faculty and review curriculum.

**Estimated time required for student’s work to complete the project:**
8 weeks (however, some of the work can be done virtually and therefore the student will not need to be on campus Monday through Friday).