

## **Project 1**

### **Oral Health Curriculum at UMMS - Review and Enhancement Project**

**Faculty Advisor:** Hugh Silk, MD MPH, Professor - Dept. of Family Medicine & Community Health

**Contact:** Hugh Silk, MD, MPH – email [hugh.silk@umassmed.edu](mailto: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 on line.
- 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 Skills:**

Confidence to meet with faculty and review curriculum.

## **Project 2**

### **Curriculum Development Project for the Cardiovascular Block of the OSD Course**

**Faculty Advisor:** Matthew McGuiness, MD, MEd

**Contact information:** [mcguinem@ummhc.org](mailto:mcguinem@ummhc.org) or (617) 584-5328

#### **Description:**

In recent years, the OSD Cardiovascular faculty have committed to using a much larger portion of allocated class time for case-based, small group activities with the second year students. This change has been very well received, but has made it increasingly difficult to find adequate teaching time for all topics traditionally covered in the curriculum. I propose to work with a student who would develop short online videos teaching one or two topics that are important to the block and may lend themselves well to this format (i.e., dyslipidemia or syncope). With appropriate guidance, the student would review the relevant material and then design a basic video or short video series that would include narration, useful visuals and viewer self-assessment. OSD students would then be required to watch these videos at their convenience during the cardiovascular block and, after being given opportunities to clarify any areas of uncertainty, be responsible for the content presented.

#### **Student's role:**

Developing a video or short series for a single topic would likely take about four weeks, thus either 4 or 8 weeks could be committed to the project if one or two topics were to be completed.

#### **Preferred Skills:**

The ideal student would have an interest in education and teaching, as well as some minimal familiarity with digital video editing (such as can be performed on most computers).

## **Project 3**

### **Principle of Human Genetics**

**Faculty Advisors:** Helen Lyon and Patricia Miron co-course leaders

**Contact information:** Helen Lyon, MD SM, Associate Professor of Pediatrics, UMass Medical School, Department of Pediatrics, Division of Genetics, UMass Memorial Children's Medical Center Benedict A3-103, 774-441-6586 or [helen.lyon@umassmemorial.org](mailto:helen.lyon@umassmemorial.org)

#### **Description:**

The project involves the creation of a case incorporating concepts from the course to help students synthesize the concepts into working terminology in a clinical setting. In the past we tried to do this with a case write up called our 'Cancer Paper'. It would also serve to link concepts from DCS and BWCT courses being taught simultaneously. The case would ideally have components that a small group with a faculty leader could discuss, giving students the chance to fully understand the concepts and then break into teams for about 30 minutes and then continue with the vignette based on the questions and lab tests. This would incorporate disease inheritance, cancer syndromes, genetic anticipation, prenatal genetics, genetic counseling, ethics of testing minors, variable expressivity, reduced penetrance, and gene therapy.

We would start the session with a prerecorded video vignette showing an interview of patient, discuss some of the points of the interview and then break into smaller teams for part of the 2-hour session.

#### **Student responsibilities in small group:**

- Write history of present illness
- Write social history
- Write family history in pedigree format
- Analyze pedigree for inheritance patterns
- Differential diagnoses
- Request physical findings
- Make recommendations
- Ask for testing
- Test results interpretation

With the entire group united, each sub-group would report on their goal. Then we would role play return of results and recommendations.

#### **Summer Project role:**

- Creation of case with Drs. Miron and Lyon.
- Filming of vignette.
- Creation of written materials.
- 2-3 cross-course meetings with DCS BWCT and possibly ICE.

#### **Preferred skills:**

Writing skills necessary. Video editing a plus.

## Project 4

### Global health curriculum development

**Contact person:** Michael Chin, MD. Email: [Michael.Chin@umassmed.edu](mailto:Michael.Chin@umassmed.edu)

#### Description:

- **Background:** In 2013, the Global Health Pathway began the phased-in process of redesigning its curriculum. This redesign included new curricular components including the following:
  - a) Global health case presentations
  - b) Journal club
  - c) 3<sup>rd</sup> year Flexible Clinical Experiences (FCEs) on various global health topics
  - d) Advance Studies electives
- In addition, the Global Health Pathway also began efforts to improve in the following areas: opportunities for student leadership, networking and career development, resources for students interested in global health
- Progress has been made in each of these areas described above, but there is opportunity and strong need for student involvement for both:
  - a) expanding and improving the existing curriculum for UMMS medical students, including the Global Health Pathway, FCEs and/or electives related to global health
  - b) developing new curricular components. Possibilities include (but are not limited to):
    - A new curricular component of the Global Health Pathway where students make audio recordings where they discuss things they learned from their global health experiences, and how it has impacted their career plans
    - A new elective focusing on refugee and asylee health in Worcester and Boston

Additional examples of global health curriculum that could be developed to help educate and train UMMS medical students can be found on this web page, within the website for the Global Health Pathway: Capstone and Longitudinal Projects in Global Health

#### Student's role:

- The student would work closely with the Director of the Global Health Pathway (i.e., Michael Chin, MD), including regular meetings (at least weekly) to review progress, refine objectives, and tailor the student's work to match the areas within global health and medical education that most interest the student.
- Prior to the start of the Summer Curriculum Development Program, the student will work with Dr. Chin to identify both:
  - a) at least one of the existing global health curricular components the student will work on improving, and
  - b) at least one new global health curricular component to work on developing and implementing.

#### Background:

Below is information about what previous UMMS medical students did as part of the UMMS Summer Curriculum Development Program with a focus on global health curriculum development:

- Summer 2017:
  - Poster completed by Hannah Duehren at the end of the summer program
  - Activities included:
    - improved the UMMS International Health Opportunities Clearinghouse (IHOC)

- volunteered with the Worcester Refugee Assistant Program (WRAP)
- developed a proposal for a new refugee health student interest group at UMMS
- developed a case-of-the-month for the Global Health Pathway

**Preferred Skills:**

- Previous interest and experience in global health (which may include working with either:  
(a) underserved populations outside of the U.S., or (b) underserved populations within the U.S. that have an international background, such as immigrant, refugee or asylum populations)
- Previous experience developing educational curriculum
- Excellent communication skills, both verbal and writing
- Highly motivated and works well independently with routine feedback from faculty

## **Project 5**

### **Development of Head & Neck Anatomy Self-Directed Learning Resources**

Faculty Advisor:

Lela Giannaris, PhD

Division of Translational Anatomy

Department of Radiology

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#### **Course for which the project will be completed:**

FOM1 - Development, Structure and Function (DSF)

#### **Description of proposed project:**

The DSF anatomy faculty plan to enhance and expand the anatomical sciences curriculum by developing educational resources for self-directed student learning. These educational materials are planned to be utilized in hands-on dry lab sessions, functional anatomy sessions and/or as online self-assessment and review resources. 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 self-directed learning resources in the DSF Head & Neck anatomy curriculum
- 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 (eg. 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:**

4 weeks