

## **Project 1: Oral Health Curriculum at UMMS Review and Enhancement Project**

### **Faculty Advisors:**

Hugh Silk

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

All courses at UMMS

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

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 an inventory of the current state of the relevant curriculum 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 and considering ways to continue to build interprofessional education regarding this topic. 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.

### **Outline of student’s role:**

Meeting twice weekly with faculty lead Dr Silk

Reviewing courses at UMMS to see what oral health is covered.

Review will include emailing, calling and meeting with faculty.

The review will also involve going through course plans and lectures.

Creating curriculum with Dr Silk’s help including slides, cases, videos, flipped classroom 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 student skills:**

Confidence to meet with faculty and review curriculum

**Project 2: Development of Online training in Medication Assisted Treatment for patients with Opioid Use Disorders**

Center for Integrated Primary Care  
Department of Family Medicine and Community Health

**Head Faculty:**

Daniel Mullin, PsyD MPH  
Director, Center for Integrated Primary Care  
Associate Professor, Department of Family Medicine and Community Health

**Preferred Contact:**

Ellen Endter, MAT  
Administrator, Center for Integrated Primary Care

**Additional Faculty:**

Ricardo Poza, MEd  
Lead Instructional Designer, Center for Integrated Primary Care

**Project Description:**

The Center for Integrated Primary Care (CIPC) develops online courses that focus on the integration of primary care and behavioral health services. In operation since 2011 the CIPC currently offers course in Care Management, Primary Care Behavioral Health, and Motivational Interviewing. The CIPC is currently subcontracted on an \$18 million PCORI funded study to develop training modules for primary care teams and primary care physicians to improve their ability to identify and care for patients with comorbid behavioral and medical conditions.

In 2017 the CIPC will begin development of a new set of online trainings focused on teaching about the treatment of patients with Opioid Use Disorder (OUD). Content will include a focus on harm reduction, buprenorphine prescribing, and treatment of comorbid medical and psychiatric conditions in a primary care setting. We would like to develop this course so that it can be used across the continuum of medical education at UMass, from UGME to GME and CME. Our efforts are in line with the Medical School's initiative to create opioid conscious curriculum.

Students participating in this curriculum development project will develop skills:

- Performing a needs assessment for curriculum development
- Conducting literature searches for curriculum development
- Working on a team of experienced clinician-educators to design educational offerings for adult learners
- Designing and developing online educational content
- Working with relevant software including: Captivate, Articulate Story Line, BlackBoard, and more

**Students should have:**

Moderate (or greater) skills in Mac and/or Windows software  
Interest in developing skills as an educator  
Ability to work collaboratively on a team  
Ability to work independently towards mutually agreed upon goals

## **Project 3: Simulation Technology In A Developmental Anatomy Curriculum**

### **Project Coordinator:**

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Department of Radiology  
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### **Course for which project will be completed:**

FOM 1 - Development, Structure and Function

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

The Anatomage technology has been integrated successfully into the anatomy of the DSF curriculum over the last two years and has been well received by the 1<sup>st</sup> year students. Similar work in the embryology component of the course is now focusing on the creation of innovative resources that will enhance the understanding of fetal growth and development, and contribute to the understanding of developmental anomalies. Currently the Anatomage Table's pre-loaded digital library includes a series of high resolution in-vivo MRIs of human embryos ranging in age from 32-56 days. Through an ongoing study (the Fetal Image Database Project) in the Department of Radiology, we are creating a similar database of fetal MRIs that demonstrate the important goalposts in development through the 2<sup>nd</sup> and 3<sup>rd</sup> trimesters.

This collection of embryo and fetal 3D-images will be a unique and valuable resource for the DSF course. Images of different ages can be used to trace the development of specific body parts such as the brain or heart, and using the Anatomage technology, the images can be examined in several viewing windows that highlight different structures. Most importantly, the images can be rotated along any axis and digitally sectioned in any plane, thus revealing a unique perspective of embryonic and fetal anatomy.

Although the database is an invaluable resource for educators and researchers, it will be most useful in the DSF course when adapted for the self-directed learning, self assessment and clinical integration that characterizes this curriculum. The student will work directly with faculty to create innovative resources (powerpoints, videos, clinical case studies) that will engage and inform 1st year students.

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

The student will help develop teaching resources using the embryo and fetal images in the Anatomage digital library. This will include:

- Examining the full range of images to identify the most useful viewing modes and sectional planes
- Identifying and labelling anatomic structures on select images that highlight significant developmental events
- Creating sets of serial sections that trace the development of specific organs over time
- Coordinating the Anatomage images with clinical cases from the pediatric radiology collection to create a series of clinical case studies that illustrate and amplify the concepts underlying specific developmental anomalies.

**Preferred skills:**

The students will be trained in the use of the Anatomage table at the start of the summer period, so no prior skills are required in that regard. However, a knowledge of, and appreciation for, anatomy and embryology is essential to the success of this project. Students should be self-motivated and able to work independently.

## **Project 4: Development of Anatomy and Imaging Self-Directed Learning Resources**

### **Faculty Advisor:**

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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 and imaging 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 anatomy and imaging 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 which integrate osteology and imaging
- Replace and expand skull and cranial nerve wire models using 3D-printed materials
- 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:**

A rising second year medical student with interest in anatomy and imaging curriculum development is preferred. The student should be able to work both independently and collaboratively. Proficiency with PowerPoint is preferred.

**Project 5: The development and evaluation of a Flexible Clinical Experience (FCE) on current issues in transgender patient health care**

**Faculty Advisor:**

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Department of Radiology  
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**Description of proposed project:**

While recent legislative agendas in the US have called discussions of transgender into the public domain, this remains a misunderstood subject even among healthcare professionals. There is little data nationally to indicate how many Americans identify as transgender; however, there is no denying that this minority is not receiving the healthcare they require. Among transgender individuals 18-44, the suicide attempt rate is as high as 53%, with many citing fear for safety, stigmatism, and lack of familial support.

Currently there is no comprehensive learning experience available at UMass Medical School which addresses the multiple factors, concepts, and issues associated with transgendered health care. This flexible clinical experience (FCE) which will teach and discuss the current key points future doctors should be aware of when dealing with transgendered patients in an open and interactive environment.

The course will consist of lectures from a multidisciplinary team representing the specialists associated with transgender health care. Specifically: surgery teams from Urology and OB/GYN, plastic surgeons, endocrinology, and behavioral health professionals including psychiatrists and counselors. Local stakeholders from transgender interest groups, as well as Worcester support centers “Safe Homes,” and the “AIDS project” both of which work on behalf of local transgender youth, will hopefully, be active participants.

In addition, to lectures and small group discussions, participants will spend time in the Anatomy Laboratory examining prosections of the natal pelvic and perineal anatomy and learning the implications of hormone treatments. Video demonstrations will be used to educate participants on the surgical steps of male-to-female transition, including clitoroplasty and surgical construction of the neovagina, and hysterectomy in preparation for suprapubic phalloplasty in female-to-male transition.

It is our responsibility at UMMS to nurture an environment of scholarly interest without taboo or secrecy, neither of which benefits these patients. The aim of this one-week elective is not to create specialists in the field, but to create primary care doctors who are trans-positive, informed, and comfortable.

**Student's role:**

The student will be engaged with all stages of creating this FCE and will be provided with the necessary training and supervision. Their involvement will include: 1. Meeting with stakeholders in the community to construct appropriate language requirements and to identify key areas to focus the curriculum on; 2. Development of a curriculum focused on current issues in transgender healthcare; 3. Creating testing parameters to determine outcomes and success of the FCE in improving taker knowledge and communication; and 4. Contribution to the preparation of a manuscript.

**Preferred student skills:**

The only skill I ask for here, are an interest in improving the education of new doctors and making the experience for transgender patients more comfortable, appropriate and helpful.

## Project 6: Global health curriculum development

### Faculty Advisor:

Michael Chin, MD.

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- **Course(s) for which the project will be completed:**

The student will have the opportunity to work curriculum for several courses pertaining to global health, including the following courses:

- a) The Global Health Pathway (i.e., OE 154, OE254, OE354, OE454)
- b) FCE 302x. Writing and Publishing in Global Health 
- c) FC 405. International Medicine: Surgical experience serving vulnerable populations in developing countries. 

### Description of proposed project:

- 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 to new curriculum, 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 the Global Health Pathway and for other FCEs and electives on global health topics, and
  - b) developing new curricular components. Examples include:
    - 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 Advance Studies elective regarding non-English language training and the use of medical interpreters
    - 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 Dr., Michael Chin, the Director of the Global Health Pathway, including regular sessions (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 summer 2017, the student will work with Dr. Chin to identify at least one of the existing global health curricular components the student will work on improving, and at least one new global health curricular component to work on developing and implementing.

**Preferred student skills:**

The following student skills are preferred:

- 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