Tentative Syllabus: Biochemistry 4455G Translation in Cancer Biology

Bachelor of Medical Sciences Program
Department of Biochemistry, Schulich School of Medicine and Dentistry, Western University

Course Description: Biochemistry 4455G will be offered as an elective course in January 2018, available for students with the prerequisite Biochemistry 4450A. Biochemistry 4455G will be the capstone course in a BMSC Honors Specialization module in Biochemistry and Cancer Biology.

This course will emphasize the translation of cancer research discoveries into clinical practice, emphasizing critical thinking, research design, evaluation of data from the literature and ethics. A Community-Engaged Learning (CEL) component in the curriculum will integrate students in a small group / team learning context through coordination with relevant community partners associated with cancer research, support and care. Students will engage with community partners associated with cancer research, patient support and care, and will work on a team project relevant to the partners’ needs.

Prerequisite: Biochemistry 4450A
Extra Information: 3 lecture/tutorial hours per week in the WALS classroom; 0.5 course.

Background: In recent years, profound advances across multiple disciplines have lead to an improved understanding of cancer biology and the delivery of advanced multi-disciplinary cancer care. Providing our undergraduate students with state-of-the-art knowledge of the complex field of cancer research requires the delivery of information related to translational aspects of cancer treatment, in which research discovered at the lab bench is translated into treatments that benefit our cancer patients.

A new undergraduate training module and Honors Specialization degree focusing on Biochemistry and Cancer Biology is being developed in which a coordinated approach to the cancer field will be offered to our Western undergraduate students. Until now, there has been no coordinated undergraduate training related to Cancer offered to students at Western, although individual courses including aspects of Cancer Biology are offered by colleagues in multiple faculty departments in Schulich who specialize in cancer research.

Biochemistry 4455G is the capstone course for this module. It will bridge knowledge pertaining to cancer research at the lab bench with the application of this research at the patients’ bedside. A unique aspect of Biochemistry 4455G, in relation to other courses in the BMSC program, is that it will be presented as a Community Engaged Learning (CEL) course. This approach is reflective of Western’s efforts to promoting CEL courses ‘which integrate service to the community with specific course curriculum’ and provide ‘hands-on, practical experience in the community’ allowing students to gain ‘a deeper understanding of course content as it applies to local and international contexts’ (http://bit.ly/2cUfHHX). Partnering organizations will be identified and coordinated through Community Service Learning @ Western at The Student Success Centre.
Learning Outcomes: Individual and group work by students in the Biochemistry 4455G will reflect the provisional learning outcomes listed below. Also provided below are alignments to Western’s Degree Outcomes (WDOs): 1 (Knowledge), 2 (Literacies and Interdisciplinarity), 3 (Communication), 4 (Resilience and Life-long Learning), 5 (Global and Community Engagement), 6 (Critical Inquiry and Creative Thinking) and 7 (Professionalism and Ethical Conduct).

Upon completion of the course students should be able to:
1. Define and describe the theoretical and practical nature of current issues that underscore new cancer treatments under development. (WDOs 1, 2, 3)

2. Engage in project-based CEL with community partners and understand how issues related to cancer affect cancer patients, their families and the healthcare system. (WDOs 4, 5, 7)

3. Work in teams, developing an implementation program in conjunction with the community partner. (WDOs 2, 3, 6)

4. Display the ability to communicate complex information related to Cancer to members of the public, including the community partner (WDOs 3, 5).

5. Identifying, describing & analyzing career opportunities in the field of Cancer Biology. (WDO 4)

Draft Course Outline: A unique aspect of the Biochemistry 4455 will be the use of WALS (the Western Active Learning Space; http://www.uwo.ca/wals/). WALS is a technology-enabled active learning environment combining face-to-face online learning through a variety of active learning strategies. The WALS environment encourages levels of interaction, engagement and knowledge retention by students through hands-on collaborative learning, content-sharing and collaboration enabled through BBC and Western’s OWL LMS backbone.

To permit easier integration with Community Partners, including Oncology colleagues with clinical practices, we are planning to have weekly 3h evening classes scheduled in WALS.

Schedule and Tentative Content:
Week 1 Course Introduction and Orientation I
Week 2 Course Introduction and Orientation II
Week 3 "SPEED DATING" Introductory meetings with Community Partners
Week 4 TOPIC 1: To Be Determined (TBD) in discussions with Community Partners
   (all topics include Class Discussions and Assigned Readings)
Week 5 TOPIC 2: (TBD)
Week 6 TOPIC 3: (TBD)
Week 7 Progress Reports and ‘Ignite’ Presentations
Week 8 TOPIC 4: To Be Determined (TBD) in discussions with Community Partners
Week 9 TOPIC 5: (TBD)
Week 10 TOPIC 6: (TBD)
Week 11 PRESENTATIONS: Teams 1, 2 & 3
Week 12 PRESENTATIONS: Teams 4, 5 & 6
Week 13 Course Overview, Reflections and Feedback
Potential Topics: General Context and Content:
- Emphasis on translation of research discoveries into clinical practice through reading, evaluating and the critique of current oncology research from the basic science and clinical oncology literature.

- Topics that integrate molecular genetic basis of cancer, general concepts of imaging, application of standard and novel treatment modalities, the development, enrollment and outcomes of clinical trials, Cancer biology as a discipline encompassing patient-centered, cross-disciplinary, research-based clinical care.

- Potential Community Partners to mentor small group & team learning will include Clinician and Basic Science colleagues, Cancer Survivors, Patient advocates and Community Partners identified and coordinated through Community Service Learning @ Western at The Student Success Centre.

Instructor:
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Updates to be provided during Fall Semester 2017.