**Rigor and Reproducibility in Cancer Biology (Winter 2018)**

**Course Data**

**Number: CB7800**

**Title:** Rigor and Reproducibility in Cancer Biology

**Credit-hours:** 1

**Meeting Day:** Wednesday

**Meeting Time: 12:30 - 1:20**  pm

**Meeting Place:** Karmanos Cancer Institute Location TBD

**Department:** Cancer Biology Program, Department of Oncology

**School/College:** School of Medicine, Wayne State University

**Type:** Lecture

**Course Description**

This is an advanced level course designed for Cancer Biology graduate students conducting cancer research. The objective of this course is to provide students with the ability to understand and learn how to conduct rigorous and reproducible cancer research. These include experimental design, data interpretation, publishing, animal and human research, and other topics relevant for the conduct of responsible research in Cancer Biology. The course is comprised of 11 lectures, given on Wednesdays. Each lecture will consist of 45 min of teaching and 15 min for discussion.

**Learning Outcomes**

The students will be able to:

- Understand and utilize rigor and reproducibility in managing and recording data in cancer research

- Summarize and present research outcomes in a manner consistent with rigor and reproducibility

- Identify improper ethical practices in cancer research and understand how to initiate awareness of these practices to the mentor, department, and university, as appropriate

- Apply appropriate ethical judgment when conducting cancer research

- Initiate and utilize strategies of mentoring that keep an open line of communication between mentor and mentee, thus fostering productive and responsible student development, and consistent with concepts of responsible conduct of research

- Apply ethical practices specific to the field of cancer biology in line with new scientific trends, technologies, use of human material and translational approaches for potential conduct of clinical trials

**Course Topics and Schedule**

***IMPORTANT NOTE: The schedule and topics may change as the course unfolds. Changes are posted on Blackboard.***

Introduction to Integrity in Science Dr. Mary Zhang

Scientific Misconduct Dr. Mary Zhang

Experimental design, results recording

and objectivity in data analyses Dr. Rafael Fridman

Integrity in reporting and publishing data  Dr. Rafael Fridman

Statistical analysis in Cancer Research Dr. Seongho Kim

Publication and Peer Review Process Dr. Kristen Purrington

Animal Research- animal models and IACUC Dr. Lisa Polin

Human subject research –IRB, clinical trials Dr. Misako Nagasaka

Mentoring/ Conflict Resolution Dr. Mary Zhang

Conflict of Interest Dr. Zeng-Quan Yang

Conclusion-informal review of the course Dr. Mary Zhang

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| **Course Instructor *Name*** | ***Office*** | ***Phone*** | ***Email*** |
| Mary Zhang, Ph.D. | HWCRC 716 | 313-576-8672 | zhangx@karmanos.org |

**Attendance**

Attendance is mandatory, although exceptions can be made for reasons such as illness or family emergency.

**Student Evaluation**

The components of student evaluation are weighted as follows:

Class attendance and participation (70%)

An essay on a reported case of science lack of integrity. Describe the case and address what would have been the ways to prevent it and solve it. (30%)

Grading is on a satisfactory/unsatisfactory basis.