

MEDG521 & PATH531

Course objective:

In the class local cancer researchers review the present status of their cancer research field. In each class two recent publications in these cancer research specialties are presented by students. Through lectures, presentations and discussions students learn current principles of tumorigenesis, the application of basic biology principles to cancer research, the current status of cancer research fields, and modern cancer research techniques and strategies. The students learn how to evaluate, present, critique and discuss cancer research studies, how to design cancer research programs, and how to write cancer research grant proposals. The goal is to help students start down the path to becoming independent cancer researchers and promote the development of skills for self-education in cancer and graduate research.

Format:

13 guest lectures by local cancer scientists. The faculty lecture on their area on cancer research. The faculty picks 1-2 papers for students to present and lead discussions on the meaning and interpretation of the papers.

Location:

- BC Cancer Research Centre Lecture Theatre

Day and Time:

- Wed, 12:30pm – 3:30pm

Instructors:

- Dr. William Lockwood, Ph.D.
604-675-8264
wlockwood@bccrc.ca
- Dr. Cathie Garnis, Ph.D.
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Teaching Assistant:

- Dylan Farnsworth
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Class Format:

- Agenda:
 1. 5 minutes – class introduction and business
 2. 45 minutes – PI presentation
 3. 20 minutes – discussion
 4. 5 minutes – break
 5. 30 minutes – student presentation I
 6. 15 minutes – discussion
 7. 30 minutes – student presentation II
 8. 15 minutes – discussion
 9. 5 minutes – class business (170 min)

Class Communication:

- General announcements by email and/or Connect website
 1. **Please put MEDG521 or PATH531, and the topic in the subject line**
- Specific brief issues: student/instructor email
- Urgent issues for presenting students: email or telephone instructors
- Science issues: please set up meeting time with guest PI or instructors. Instructors will not provide long detailed email replies on science topics.

Instructor meetings:

- If students need clarification on the papers before presentation, they are urged to set up a virtual meeting directly with the guest PI at least a week before the class. If the PI is not available, the instructors or TA can be contacted for this purpose.

Office Hours:

- Available
- Location: Zoom. Can set up time to discuss.

Student Information:

- Send TA the following information
 1. **Name**
 2. **Preferred email address**
 3. **PI lab**
 4. **Graduate program**
 5. **Research project – one sentence**
 6. **Any known conflicts with specific class dates (and justification)**
 7. **This information will be used to match students with guest PIs and presentation dates**

Reading:

- Presentation papers – 2 per week
- Review articles – 1 or 2 per week
 1. Received 1 or 2 weeks in advance as PDF files, via email or the Connect class website
- Book – Weinberg; The Biology of Cancer (Optional)
 1. Primarily for general background, specific background will be the review articles
 2. A good resource all cancer researchers

Grading:

- Paper presentation 35%
- FINAL - Grant proposal 50% (DUE DATE: 27 APRIL 2024)
- Participation 15%

Paper Presentation:

- Assigned by mentor PI
 1. received 1 or 2 weeks in advance
 2. **IF NECESSARY, can meet with PI or instructors to discuss paper – schedule by email.**

- Length: 30 minutes and 5 minutes discussion, 35 minutes total
- Presentation should include:
 1. objective
 2. background – sufficient to understand experiment/topic
 3. relevance to cancer
 4. hypothesis, if any
 5. research plan/strategy
 6. major results
 7. conclusions
 8. critique(s)
 9. alternative methodology/strategy
 10. questions/issues raised
 11. future research direction
- Format:
 1. MS PowerPoint file, or .pdf file
 2. provide on USB key to PI
- Grading: by instructors and visiting PI
 1. 30 points total
 2. 0-2 points for each presentation subtopic (11)
 - 0=inadequate
 - 1=adequate/sufficient
 - 2=excellent
 3. 0-3 points overall qualify/clarity
 4. 0-5 points questions/discussion
 5. grade returned 2 weeks post presentation

Participation:

- 10% questions and contributions to discussion (by TA/instructor)
- 5% presentation feedback
 1. based on presentation evaluation forms; 1% subtracted for each missed

Final:

- Grant proposal – 2-year term – similar to a Cancer Research Society Operating Grant (no preliminary data required)
- Due Date: **27 APRIL 2024**
- Topic – **approved by instructor**
 1. potential topics
 - follow up on paper presentation
 - related to personal research project, but not directly
 - general cancer biology
- Sections:
 1. cover page: project title, name, running title
 2. scientific abstract – 1 page
 3. lay abstract – 1/2 page
 4. research – 5 pages, **includes figures**
 5. references
 6. environment – 1 page
- Format:

1. MS Word document, emailed to instructor
 2. single space, 1 inch margins, normal line spacing
 3. 12 pt Times New Roman or 11 pt Arial
 4. header – name, running title, section title, page number
- Scientific abstract: 1 page
 1. objective
 2. background/relevance
 3. rationale/hypothesis
 4. specific aims
 5. impact/significance
 - Lay abstract: 1/2 page

Summarize the proposal, in **simple, easy-to-understand, every day, non-technical language**, including a brief description of why the proposed line of research is important, the rationale, research objectives, how it relates to the current state of the art and, what impact it will make on cancer research and/or the burden of cancer.
 - Research section: 5 pages, **includes figures**
 1. objective
 2. background
 3. rationale
 4. hypothesis
 5. specific aims
 6. detailed research methods
 - pitfalls/alternative strategies
 7. future research direction
 8. significance/impact
 9. timeline/personnel
 - References:

Standard format, include title and all (within reason) authors
 - Environment: 1 page

List and brief description or justification of key equipment and facilities needed to accomplish specific aims.