COURSE GOALS: There are several goals for this course. One is to introduce students to basic fundamental principles and emerging concepts in cancer biology. Another is to challenge students to think with considerable depth about how these principles and concepts were shaped through experiment, as well as their implications, limits and caveats. A third is that the lectures, readings, and exams will hone your ability to think clearly and critically about the testing of hypothesis through experimental design and data interpretation. The course aims to provide students with a foundation that will enable them to keep abreast of cancer biology topics through critical appraisal of the literature and seminars.

COURSE DESCRIPTION: The course is divided into 4 thematic blocks of cancer biology, which are: Intro To Cancer Biology And Signal Transduction, Intrinsic and Extrinsic Drivers, Genome regulation and in Primary and Metastatic Tumors, Evading Cell Death. Each block will involve faculty members lecturing from an experimental standpoint of the literature that assumes basic knowledge of the subject. There are four course directors and one of them will attend every session. During each 1.5 hour class faculty will lecture for 45 minutes followed by a 45 minute breakout discussion. During the breakout session students will be separated into two pre-assigned groups and each group will have a student leader/presenter. Each group will discuss the primary research paper and answer the assigned question using any and all available resources. Each group leader will have 10 minutes to present their question and answer.

READING ASSIGNMENTS: Two weeks prior to their lecture, faculty will assign a review that provides relevant background and two primary research papers, one for each group. The faculty will also provide a discussion question on each paper to guide student reading and discussion. Each group is responsible for reading these materials before each lecture. Immediately before each lecture, student presenters are required to deliver printed copies of their 1-2 page written answer to the pre-assigned question to the attending course director. Should a student have to miss a lecture, the student needs to notify the course directors in advance.

COURSE GRADE: The course grade will be based on 40% participation, 40% presentations, and 20% 1-2 page write-up summarizing key points of the presentations (group leaders only).

CANVAS: The assigned review, primary paper, and questions should be posted two weeks prior to each class.

COURSE DIRECTORS:
Kate Hamilton, hamiltonk1@email.chop.edu
Kathrin Bernt, berntk@email.chop.edu
Karin Eisinger, karineis@pennmedicine.upenn.edu
Todd Ridky, ridky@pennmedicine.upenn.edu
# CAMB 512 Concepts in Cancer Biology Fall 2018

**12:15-1:45PM Wednesdays in BRB 801**

## THEME I: INTRO TO CANCER BIOLOGY and SIGNAL TRANSDUCTION

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Presenter</th>
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</thead>
<tbody>
<tr>
<td>Wed, Aug 29</td>
<td>Course Introduction/Stepwise tumorigenesis</td>
<td>Kathryn Hamilton</td>
</tr>
<tr>
<td>Wed, Sep  5</td>
<td>Oncogenes and Tumor Suppressors</td>
<td>David Feldser</td>
</tr>
<tr>
<td>Wed, Sep 12</td>
<td>Kinases and Cancer</td>
<td>Donita Brady</td>
</tr>
<tr>
<td>Wed, Sep 19</td>
<td>Immune Regulation and Cancer</td>
<td>Greg Beatty</td>
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## THEME II: INTRINSIC AND EXTRINSIC DRIVERS

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Presenter</th>
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</thead>
<tbody>
<tr>
<td>Wed, Sep 26</td>
<td>Transcriptional Control in Cancer</td>
<td>Tom De Raedt</td>
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<tr>
<td>Wed, Oct 3</td>
<td>Integrated Stress Response and Cancer</td>
<td>Costas Koumenis</td>
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<tr>
<td>Wed, Oct 10</td>
<td>Telomeres and Cancer</td>
<td>Brad Johnson</td>
</tr>
<tr>
<td>Wed, Oct 17</td>
<td>Guardians of the Genome</td>
<td>Craig Bassing</td>
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## THEME III: GENOME REGULATION IN PRIMARY AND METASTATIC TUMORS

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Wed, Oct 24</td>
<td>Graduate Student Networking Lunch</td>
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<tr>
<td>Wed, Oct 31</td>
<td>Epigenetics of Cancer</td>
<td>Kathrin Bernt</td>
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<tr>
<td>Wed, Nov 7</td>
<td>Migration, Invasion, Metastasis</td>
<td>Andy Minn</td>
</tr>
<tr>
<td>Wed, Nov 14</td>
<td>Viruses and Cancer</td>
<td>Elizabeth White</td>
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## THEME IV: EVADING CELL DEATH

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>Nov 21-Nov 23</td>
<td>No Class (Thanksgiving Break)</td>
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</tr>
<tr>
<td>Wed, Nov 28</td>
<td>Oxygen in Cancer</td>
<td>Celeste Simon</td>
</tr>
<tr>
<td>Wed, Dec 5</td>
<td>Targeting Apoptosis</td>
<td>Mike Hogarty</td>
</tr>
<tr>
<td>Wed, Dec 12</td>
<td>Targeting Autophagy</td>
<td>Ravi Amravadi</td>
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