Present

Translational Cancer Research

(GS21 1613)

SPRING 2021
GS21 1613 Translational Cancer Research

Tuesdays, 3:00 PM – 5:00 PM
Spring 2021 – class will be held via Zoom

This course will provide a primer for translational cancer research and will review concisely the current understanding of human cancer biology that is driving interest in targeted therapy and personalized management for prevention, detection and treatment of cancer. Techniques used to characterize human cancers at a cellular and molecular level will be described. Concepts, examples and alternative strategies to achieve individualized targeted therapy will be presented. Processes for developing drugs and biomarkers will be reviewed. Translation from bench to bedside and back will be outlined for surgical oncology, radiation oncology, medical oncology and cancer imaging. Challenges for translation in cancer prevention will be considered. Infrastructure required for translational research will be reviewed, including tissue banks, biopsies, interventional radiology, molecular pathology, molecular imaging, bioinformatics, biostatistics, novel trial design and interactive databases. Objectives and paths for training and career development will be outlined as well as the sociology of team science. Interactions between Academe, Pharma, the NCI, FDA and Foundations will be explored. Finally, the course will analyze barriers to more rapid translation of cancer research to the clinic and community. This course consists of a two hour lecture and one hour seminar, weekly.

Requirements
1) There are no prerequisites for this course.
2) Students may enroll in this class for audit or for credit.
3) Formal registration through GSBS for credit.
   a) Credit requires meeting 85% attendance of classes.
   b) Reading articles and reviewing handouts.
   c) Article presentation in class
   d) Completion and passing grade on final examination.

Grades: Letter Grades (A, B, C, F, I)

Credit: 3 credit hours

Resources: Lecture slides will be provided to students. References to articles and chapters will also be provided.

Course Director:
Robert C. Bast, Jr., MD
Vice President for Translational Research
Professor
Department of Experimental Therapeutics
Harry Carrothers Weiss Distinguished University Chair
MD Anderson Cancer Center

JCR
Revised: 11/17/2020
ALPHABETICAL LIST OF INVITED LECTURERS

Robert C. Bast, Jr., MD
Vice President for Translational Research
Professor
Department of Experimental Therapeutics
Harry Carrothers Weiss Distinguished University Chair
MD Anderson Cancer Center

Dave Fuller, MD
Assistant Professor
Radiation Oncology
MD Anderson Cancer Center

Ernest Hawk, MD, MPH
Vice President and Division Head
T. Boone Pickens Distinguished Chair for Early Prevention of Cancer
MD Anderson Cancer Center

Vikas Kundra, MD, PhD
Associate Professor
Department of Diagnostic Radiology
MD Anderson Cancer Center

Andy Livingston, MD
Assistant Professor
Department of Sarcoma and Pediatrics
MD Anderson Cancer Center

Maurie Markman, MD
Vice President of Patient Oncology Services
National Director of Medical Oncology
Cancer Treatment Centers of America

Christina Roland, MD
Assistant Professor
Department of Surgical Oncology
MD Anderson Cancer Center
Course Schedule
Introduction to Translational Cancer Research

Introduction to Translational Cancer Research
GSBS Course #GS21 1613
2021 Spring Schedule

Tuesday afternoon class 3:00 – 5:00 PM
Location: 2021 Virtual – Zoom
GSBS Spring Semester 2021: January 11 – April 30, 2021
Spring Break: March 15-19, 2021
GSBS Last day of classes: April 30, 2021
GSBS Final Exams: week of May 3 – 7, 2021
Our final exam will be distributed on or before April 27, 2021

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Lecturer(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>January 12, 2021</td>
<td>The Challenge of Translational Cancer Research</td>
<td>Bast</td>
</tr>
<tr>
<td>2</td>
<td>January 19, 2021</td>
<td>The Heterogeneity of Human Cancer</td>
<td>Bast</td>
</tr>
<tr>
<td>3</td>
<td>January 26, 2021</td>
<td>Development of Molecular Diagnostics</td>
<td>Bast</td>
</tr>
<tr>
<td>4</td>
<td>February 2, 2021</td>
<td>Development of Molecular Therapeutics</td>
<td>Bast</td>
</tr>
<tr>
<td>5</td>
<td>February 9, 2021</td>
<td>Drug and Biological Development</td>
<td>Bast</td>
</tr>
<tr>
<td>6</td>
<td>February 16, 2021</td>
<td>Personalization of Care</td>
<td>Bast</td>
</tr>
<tr>
<td>7</td>
<td>February 23, 2021</td>
<td>Cancer Prevention</td>
<td>Hawk</td>
</tr>
<tr>
<td>8</td>
<td>March 2, 2021</td>
<td>Multidisciplinary Cancer Care: Pediatrics, Surgery, Radiation</td>
<td>Livingston, Roland, Fuller</td>
</tr>
<tr>
<td>9</td>
<td>March 9, 2021</td>
<td>Imaging</td>
<td>Kundra</td>
</tr>
</tbody>
</table>

GSBS Spring Break March 15 -19, 2021 – No class

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Lecturer(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>March 23, 2021</td>
<td>The Role of Government: The NCI</td>
<td>Hawk</td>
</tr>
<tr>
<td>11</td>
<td>March 30, 2021</td>
<td>Infrastructure</td>
<td>Bast</td>
</tr>
<tr>
<td>12</td>
<td>April 6, 2021</td>
<td>The Role of Government: The FDA</td>
<td>Markman</td>
</tr>
<tr>
<td>13</td>
<td>April 13, 2021</td>
<td>Training and Career Development</td>
<td>Bast</td>
</tr>
<tr>
<td>14</td>
<td>April 20, 2021</td>
<td>Pharmaceutical/Biotech Industry/The Role of Foundations</td>
<td>Bast</td>
</tr>
<tr>
<td>15</td>
<td>April 27, 2021</td>
<td>The Impact of Translational Research on Cancer Care</td>
<td>Bast</td>
</tr>
</tbody>
</table>

**Final Exam is a take home test (multiple choice and True/False) that will be distributed on or before April 27**

**FINAL EXAM DUE to Jene’ Reinartz via email by 5:00 PM on May 4th**

Final Exam due by 5:00 PM on May 4th

** Final Exam is a take home test (multiple choice and True/False) that will be distributed on or before April 27.

FINAL EXAM DUE to Jene’ Reinartz via email by 5:00 PM on May 4th.
CONTACT INFORMATION
The University of Texas M. D. Anderson Cancer Center

Course Director
Robert C. Bast, Jr., MD
Vice President for Translational Research
Professor
Department of Experimental Therapeutics
Harry Carrothers Weiss Distinguished University chair
MD Anderson Cancer Center

Course Coordinator:
Jeneʻ Reinartz (713) 792-8613 reinartz@mdanderson.org

Contact Information - The Graduate School of Biomedical Sciences

Bill Mattox, PhD
Senior Associate Dean of Graduate Education
william.mattox@uth.tmc.edu
(713) 500-8802

Lourdes (Bunny) Perez
Chief of Student Records
Dean’s Office
Lourdes.V.Perez@uth.tmc.edu
713-500-9871