



**Graduate School of Biomedical Sciences**

**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

## 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*

Week	Date	Topic	Lecturer(s)
1	January 12, 2021	The Challenge of Translational Cancer Research	Bast
2	January 19, 2021	The Heterogeneity of Human Cancer	Bast
3	January 26, 2021	Development of Molecular Diagnostics	Bast
4	February 2, 2021	Development of Molecular Therapeutics	Bast
5	February 9, 2021	Drug and Biological Development	Bast
6	February 16, 2021	Personalization of Care	Bast
7	February 23, 2021	Cancer Prevention	Hawk
8	March 2, 2021	Multidisciplinary Cancer Care: Pediatrics, Surgery, Radiation	Livingston, Roland, Fuller
9	March 9, 2021	Imaging	Kundra
GSBS Spring Break March 15 -19, 2021 – No class			
10	March 23, 2021	The Role of Government: The NCI	Hawk
11	March 30, 2021	Infrastructure	Bast
12	April 6, 2021	The Role of Government: The FDA	Markman
13	April 13, 2021	Training and Career Development	Bast
14	April 20, 2021	Pharmaceutical/Biotech Industry/The Role of Foundations	Bast
15	April 27, 2021	The Impact of Translational Research on Cancer Care	Bast
FINAL EXAM WEEK May 3 – 7, 2021 - No class			

**\*\* 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 4<sup>th</sup>**

**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:**

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**Contact Information - The Graduate School of Biomedical Sciences**

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