

**The Rockefeller University**  
**Fall 2026**

Course name: Molecular Basis of Cancer

Instructor(s): Sohail Tavazoie, MD PhD

Brief overview and topic(s) covered:

This course is designed to teach concepts pertaining to the molecular regulation of cancer formation and progression. Topics include tumor suppressors and oncogenes, cell cycle control, senescence, mutagenesis, DNA damage response, tumor immunology, cancer metabolism, molecular and cellular biology of metastasis, translational control in cancer, the role of chromatin in cancer, and inherited cancer predisposition syndromes. Application of these insights to the development of novel therapeutics will also be discussed. The format consists of a weekly three-hour session. In the first hour, speakers will provide a broad overview of individual cancer topics, while the second hour will be a research seminar by the lecturer on his/her own work as it pertains to the given topic. Each lecture will be accompanied by an assigned research article to be discussed over lunch in journal club format and sometimes by a review.

**Mondays from October 5 - December 14, 2026**

**LECTURES**

**9:30-11:30 am - Carson Family Auditorium**

**DISCUSSIONS**

**11:30 am - 1:30 pm - Hess Academic Center South Conference Room 351**

Credit value: 2 units

Prerequisite(s):

Undergraduate level courses in biology & chemistry. Past coursework in undergraduate biochemistry and molecular biology encouraged. Given the substantial demand for the course, students will need to send a paragraph describing their interest in the course for student selection. A maximum of two students will be allowed per lab so that the class size can be optimal for journal club discussions.

Required reading:

*The Biology of Cancer*, by Robert A. Weinberg, 3<sup>rd</sup> edition, Taylor and Francis (chapters 1-13)

Method of evaluation: class attendance, active participation in the discussions, take home assignment and final exam.

| <u>Lecture #</u> | <u>Date</u> | <u>Lecturer</u>           | <u>Subject</u>                        |
|------------------|-------------|---------------------------|---------------------------------------|
| 1                | 10/5/26     | Sohail Tavazoie           | Introduction to Course                |
| 2                | 10/19/26    | Andy Koff (MSKCC)         | Transformation, cell cycle CDKs       |
| 3                | 10/26/26    | Kivanc Birsoy             | Tumor Metabolism                      |
| 4                | 11/2/26     | Titia De Lange            | DNA damage, repair and telomeres I    |
| 5                | 11/9/26     | Titia De Lange            | DNA damage, repair and telomeres II   |
| 6                | 11/16/26    | Andy Minn (MSKCC)         | Tumor immunology & Immunotherapy      |
| 7                | 11/23/26    | Davide Ruggero (UCSF)     | Translational control in cancer & MYC |
| 8                | 11/30/26    | Sohail Tavazoie           | Cancer progression & Metastasis I     |
| 9                | 12/7/26     | Sohail Tavazoie           | Cancer progression & Metastasis I     |
| 10               | 12/14/26    | Siavash Kurdastani (UCLA) | Chromatin biology & Cancer            |
| 11               | 12/14/26    | Ozge Birsoy (MSKCC)       | Hereditary Cancer syndromes           |