

## **19. From the World's Deadliest Bacteria to Cancer Therapy: Lessons from TB and BCG**

1 unit, Yaprak Ozakman, February 26, 2026

**Lecture Format:** Integrated lecture with interactive discussion and group activity

**Lecture Overview:** This lecture begins with the historical impact of tuberculosis on human health, moves through the development of the BCG vaccine, and culminates in its use as a cancer immunotherapy. Students will explore how discoveries from infectious disease research translate into cancer treatment and reveal the essential role of basic science in driving medical innovation.

### **Topic Outline**

1. The History and Global Impact of Tuberculosis
2. Development of the BCG Vaccine
3. Host Immunity to TB
4. BCG as a Cancer Immunotherapy
5. What Infectious Diseases Teach Us About Cancer
6. Importance of Basic and Translational Research

**Learning Objectives:** By the end of this session, students will be able to:

- Describe the historical and global significance of tuberculosis and its impact on immune research.
- Explain how BCG arose from TB research and how it reshapes immune function.
- Evaluate how infection biology guides cancer immunotherapy.
- Recognize the critical role of basic and translational research in advancing medical treatments.