

# MEDI 501: Principles of Preclinical Translational Science

Translation is the process of turning observations in the laboratory, clinic and community into interventions that improve the health of individuals and the public — from diagnostics and therapeutics to medical procedures and behavioral changes.

Translational Science is an emerging field that seeks to identify broadly generalizable scientific and operational principles for translational research. Translational science examines translational research from a systems perspective to develop approaches that can improve the efficiency and effectiveness of translational research endeavors, broadly.

In this course, students will learn key principles of translational science, taught by way of a case study of a highly successful translational research partnership involving the National Center for Advancing Translational Sciences (NCATS), the National Cancer Institute (NCI), Northwestern University and the University of Kansas. The partnership produced a promising potential drug shown to inhibit metastasis in animal models, which is being examined in a first-in-human clinical trial in 2020.

## Learning Objectives

- Understand the definitions and goals of translational research and translational science and how they differ.
- Identify a range of scientific and operational principles that can be applied to enhance preclinical translational research projects.
- Learn about the research process necessary to enable a scientific discovery to produce an effective compound that can be used in humans.
- Learn about the varied roles of different disciplines, as well as agencies — including industry, government agencies, and academic faculty and institutions — in advancing translational research and how to facilitate effective interagency and team-based partnerships.

Sample syllabus is subject to change.

**Credits:** 1

**Class Type:** Graduate Course

**Program:** Biology, Genetics, and Medicine

**Availability:** Spring 2022

**Session:** Session B