Abbreviated Draft Syllabus

MEDI 502: Translational Science in the COVID-19 Pandemic — Accelerating and Enhancing Our Response Across Preclinical, Clinical and Population Health Research

Fall 2021 (Oct. 25–Dec. 10, 2021)

Course Learning Objectives

- Identify key translational science challenges in responding to the COVID-19 pandemic.
- Identify effective translational science approaches NCATS has used to address multiple aspects of the COVID-19 pandemic that span preclinical, clinical and public health translational research.
- Explain how the translational science approaches NCATS used in the context of a variety of projects related to COVID-19 could be applied broadly to research focused on other diseases and conditions.
- Reflect on the translational science principles highlighted throughout the course and how these relate to one’s own (current or future) work and career sector.
- Learn about the partnerships and collaborations needed to advance translational research, as well as legal approaches that help establish effective partnerships.

Week 1 (Oct. 25): Overview of course design, translational science overview and translational science challenges addressed during the response to COVID-19, as illustrated by initiatives highlighted during the course


See email for an invitation to complete the pre-course survey.

Lecture 1a: Translational Science: Maximizing the Success of Translational Research (Joni Rutter)

Lecture 1b: Translational Science Challenges Addressed During the Biomedical Response to the COVID-19 Pandemic (Joni Rutter)

Additional Recommended Resources: NIH videocast lectures focused on SARS-CoV-2 and the response to the COVID-19 pandemic

- The Biomedical Research Response to COVID-19: A view from NIAID (Hillary Marston)
- Demystifying Medicine: COVID-19, NIH and the Year That Was (Francis Collins)
- Lessons Learned from COVID-19: A “Fireside Chat” with Dr. Anthony Fauci (Anthony Fauci)

Assignments: Introduction assignment, discussion board assignment, assigned reading and submitting questions for office hours.
Week 2 (Nov. 1): Translational Science in the COVID-19 Pandemic — Preclinical Research and Drug Repurposing

Lecture 2a: Leveraging NCATS’ Intramural Resources in the Early Translation Branch to Advance COVID-19 Research (Matthew Hall)
Lecture 2b: Overview of the NCATS OpenData Portal (Kyle Brimacombe)
Lecture 2c: Overview of CURE ID (Timothy Sheils)

Assignments: 2-minute paper, assigned reading and submitting questions for office hours.

Week 3 (Nov. 8): Translational Science in the COVID-19 Pandemic — Clinical Research Examples

Lecture 3a: Overview of NCATS’ Clinical and Translational Science Awards (CTSA) Program, Trial Innovation Network and Recruitment Innovation Network (Michael Kurilla)
Lecture 3b: Overview of the NIH Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) Program (Stacey Adam)
Lecture 3c: NCATS’ Involvement in Convalescent Plasma Clinical Trials, ACTIV-1 and ACTIV-6 (Sarah Dunsmore)

Assignments: Discussion board assignment, assigned reading and submitting questions for office hours.


Lecture 4a: Overview of the National COVID Cohort Collaborative (N3C) (NCATS Staff TBD)
Lecture 4b: Research on COVID-19: Is there an app for that? (Emphasis on telehealth and long COVID/post-acute sequelae SARS-CoV-2 infection [PASC]) (Audie Atienza)
Lecture 4c: LIVE Q&A with speakers at the end of this week

LIVE office hours: Lecturers will answer questions submitted in advance and reserve time for a few live questions. More information will be forthcoming, including information on how to join live or view the recording.

Assignments: Mini-quiz, 2-minute paper, assigned reading and submitting questions for speakers/office hours.

Week 5 (Nov. 22): Translational Science in the COVID-19 Pandemic – Collaborations and Health Disparities

Lecture 5a: Developing COVID-19 Collaborations (Ami Gadhia)
Lecture 5b: Examination into the Impact of the COVID-19 Pandemic on Non-COVID-Related Research and Patient Care. (Tiina Urv)

Additional Recommended Resources: NIH Videocast Lecture — Vivek Murthy Distinguished Lecture: Addressing COVID-19 Health Disparities, Root Causes, Mental Health Impacts, Lessons Learned and Future Opportunities (Vivek Murthy)
Assignments: Discussion board assignment, assigned reading and submitting questions for office hours.

Week 6 (Nov. 29): Translational Science in the COVID-19 Pandemic — Population Health

Lecture 6a: Serosurvey: Intramural and Extramural Collaborations and Sharing of Data (Carlene Klumpp-Thomas)

Lecture 6b: Overview of the NIH Rapid Acceleration of Diagnostics Radical (RADx-rad) Initiative (Danilo Tagle)

Lecture 6c: NIH Community Engagement Alliance (CEAL): Overview of NCATS’ Involvement in COVID-19 Community Engagement Efforts (Sanae ElShourbagy Ferreira)

Assignments: 2-minute paper, assigned reading and submitting questions for office hours.

Week 7 (Dec. 6): Regulated Clinical Trials and Course Wrap-Up

See email for an invitation to complete the post-course survey.

Lecture 7a: Future Directions — Antiviral Program for Pandemics (Matthew Hall)

Lecture 7b: LIVE Q&A with speakers at the end of this week

Assignments: Discussion board, mini-quiz and assigned reading.