Abbreviated Draft Syllabus

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

Summer 2022 (June 15–Aug. 2, 2022)

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: 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


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: Translational Science in the COVID-19 Pandemic — Preclinical Research and Drug Repurposing

Lecture 2a: Collaborative Discovery at the NCATS Early Translation Branch (ETB) (The Story Before COVID) (Matthew Hall)

Lecture 2b: COVID-19: The ETB Response (Pivoting to COVID) (Matthew Hall)

Lecture 2c: NCATS OpenData Portal (Kyle Brimacombe)

Lecture 2d: CURE ID — A Mobile Application to Capture Novel Uses of Existing Drugs in the Era of COVID-19 (Timothy Sheils)

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

Week 3: Translational Science in the COVID-19 Pandemic — Clinical Research Examples

Lecture 3a: Clinical Science and COVID-19 (NCATS Clinical and Translational Science Awards Program/Trial Innovation Network/Recruitment Innovation Network) (Michael Kurilla)

Lecture 3b: The NIH Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) Public–Private Partnership (Stacey Adam)

Lecture 3c: NCATS’ Involvement in COVID-19 Clinical Trials (ACTIV-1, ACTIV-6 and Convalescent Plasma) (Sarah Dunsmore)

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

Week 4: Translational Science in the COVID-19 Pandemic — Leveraging and Coordinating Preexisting Research Resources for Rapid Development and Implementation of Large-Scale, National Research Studies

Lecture 4a: The National COVID Cohort Collaborative (N3C) (Kenneth Gersing and Penny Burgoon)

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

Week 5: Translational Science in the COVID-19 Pandemic — Collaborations and Health Disparities

Lecture 5a: NCATS Office of Strategic Alliances and Partnerships in the Time of COVID-19 (Ami Gadhia)
Lecture 5b: Rare Diseases Clinical Research Network (RDCRN) — Rare Diseases Patient COVID Survey (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

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

Week 6: Translational Science in the COVID-19 Pandemic — Population Health

Lecture 6a: The Trans-NIH COVID-19 Serosurvey (TBD)
Lecture 6b: Overview of the NIH Rapid Acceleration of Diagnostics Radical (RADx-rad) Initiative (Danilo Tagle)
Lecture 6c: Community Engagement: Collaborative Translational Science Approaches Essential to an Effective COVID Response (Sanae ElShourbagy Ferreira)

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

Week 7: Future Directions 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: Course Wrap-Up (Jessica Faupel-Badge)
Lecture 7c: LIVE Q&A with speakers at the end of this week

Assignments: Discussion board assignment and assigned reading.