TRANSLATIONAL SCIENCE (TS) RESOURCES

NCATS

What is 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 the field that generates scientific and operational innovations that overcome longstanding challenges along the translational research pipeline. These include scientific, operational, financial and administrative innovations that transform the way that research is done, making it faster, more efficient, and more impactful.

View the **NCATS Translational Science Principles** that characterize effective translational science approaches.

View the **NCATS Translational Science Spectrum** that shows the stages of translational research.

Sample TS Roadblocks / Barriers / Challenges

Recruitment and Retention
- Failure/inability to recruit & retain the number of participants required for studies

Clinical Trial Operational Efficiency
- Clinical trials not completed on time or budget
- Clinical trial design (e.g. patient-centric considerations)

Patient and Community Engagement
- Lack of involvement for ongoing patient/community engagement in the development and implementation of new health interventions

Data Management and Utilization
- Using Electronic Health Record data for research
- Challenges to data acquisition, integrity, and analysis

Articles

Austin CP. Opportunities and challenges in translational science. Clin Transl Sci. 2021 Sep;14(5):1629-1647. doi: 10.1111/cts.13055. Epub 2021 Jul 8. PMID: 33982407; PMCID: PMC8504824.

Gilliland CT, White J, Gee B, Kreeftmeijer-Vegter R, Bietrix F, Ussi AE, Hajduch M, Kocis P, Chiba N, Hirasawa R, Suematsu M, Bryans J, Newman S, Hall MD, Austin CP. The Fundamental Characteristics of a Translational

Scientist. ACS Pharmacol Transl Sci. 2019 May 2;2(3):213-216. doi: 10.1021/acsptsci.9b00022. PMID: 32259057; PMCID: PMC7088880

Austin, CP. Translating translation. Nature Reviews Drug Discovery. 2018 Apr;17(455-456). doi.org/10.1038/nrd.2018.27.

Examples of Translational Science Projects

1. An investigator wishes to test whether a particular drug improves outcomes in diabetes; this is a translational research (TR) problem to be addressed using established recruitment methods. By contrast, an investigator wishes to test a particular diabetes drug, while also examining the underlying barriers to recruit participants and aims to test if new recruitment methods are more effective and generalizable to various drug trials; this is a translational science (TS) problem.

2. TS only: An investigator may wish to understand barriers to participation in clinical research among people in a specific population. They propose to interview individuals in this population to identify barriers to participation in clinical research that would apply across clinical research studies. They conduct qualitative analyses and prepare and disseminate preliminary guidelines for increasing participation among people in this population.

Videos

Translational Science Explained: Easy as Pie! | University of Rochester Clinical and Translational Science Institute (UR CTSI) | 10 comments

U-M MICHR What is Translational Science?
https://www.youtube.com/watch?v=bcN4ZWL1Ojw