Translational Science Overview and Pilot Program

Irving Institute for Clinical and Translational Research

February 2024

COLUMBIA | IRVING INSTITUTE FOR CLINICAL AND TRANSLATIONAL RESEARCH

CTSA Clinical & Translational Science Awards Program

Topics

- What is Translational Science?
- Translational Science Pilot Award

What is Translational Science?

Translating "Translation“

as defined by NCATS

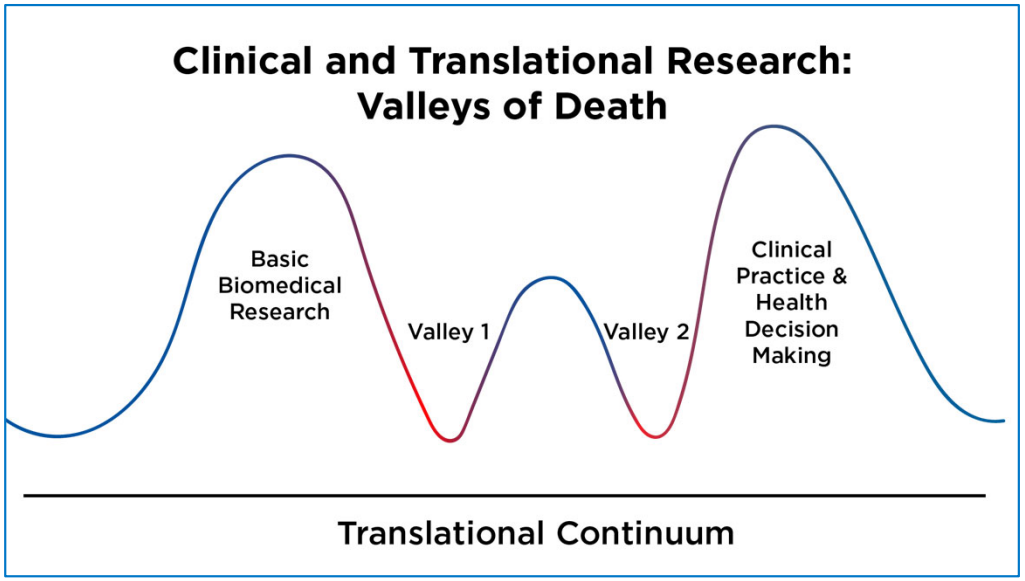
- **Translation**: the process of turning observations in the laboratory, clinic and community into interventions that improve the health of individuals and communities – from diagnostics, preventions, and treatments to medical procedures and behavioral changes.

- **Translational Research (TR):** the endeavor to traverse a particular step of the translational process for a particular target or disease.

- **Translational Science (TS):** the field of investigation that generates innovations that overcome longstanding challenges along the translational research pipeline.

What is Translational Research?

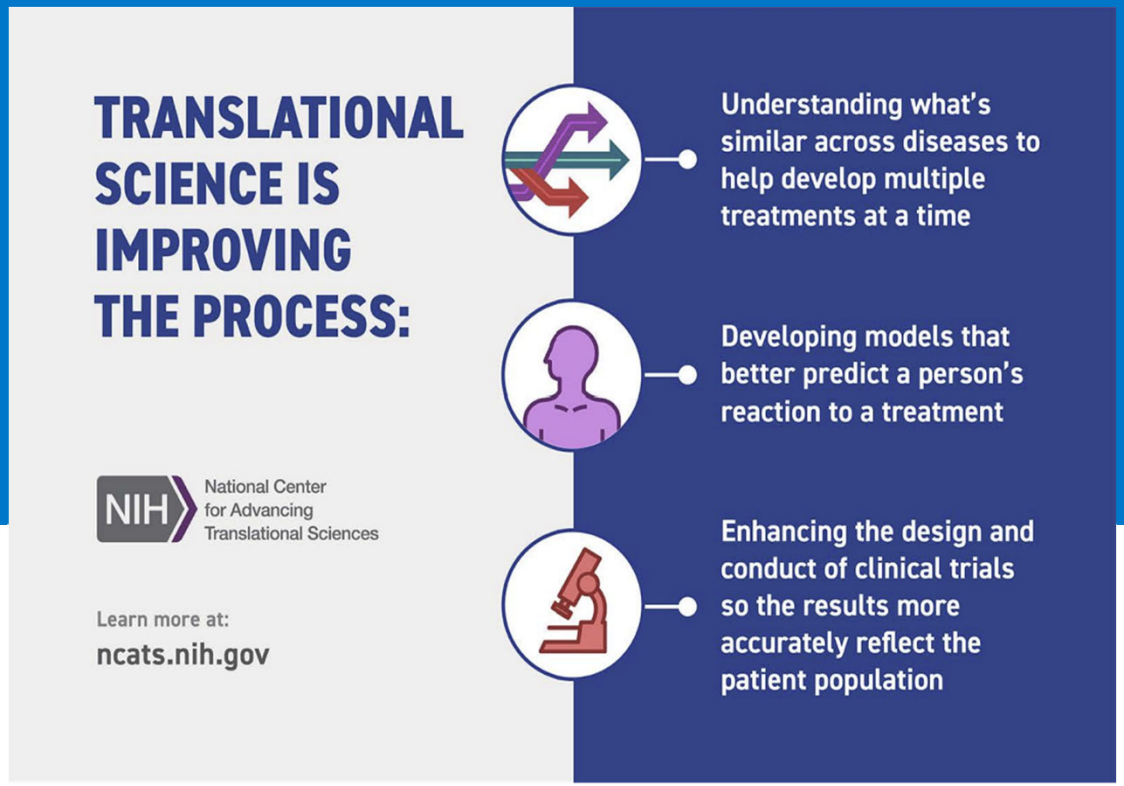
Translational research refers to the process of translating scientific discoveries into practical applications that benefit human health and well-being.



Adapted from, Canadian Institutes of Health, 2011

The "valleys of death", pictured above, refer to the impediments that prevent lab findings from being translated into medical benefits for patients at the bedside.

What is Translational Science?



Credit: NCATS

We are beginning a pivot towards **translational science**:

The field of translational science is focused on identifying and developing new, innovative solutions to overcome research process barriers to get more treatments to people faster.

"MORE TREATMENTS. MORE QUICKLY…
THAT'S THE GOAL OF TRANSLATIONAL SCIENCE"

What is Translational Science?

Key features of the field:

Generalizable

- applies to any target or disease and moving from one step to the next in the translational process; disease-agnostic

Efficient

- enhance efficiency and effectiveness of all translational research; understand common roadblocks

Innovative

- develop innovative solutions that will ultimately benefit research across a range of diseases and conditions

Aims to understand translational research inefficiencies including:

Barriers

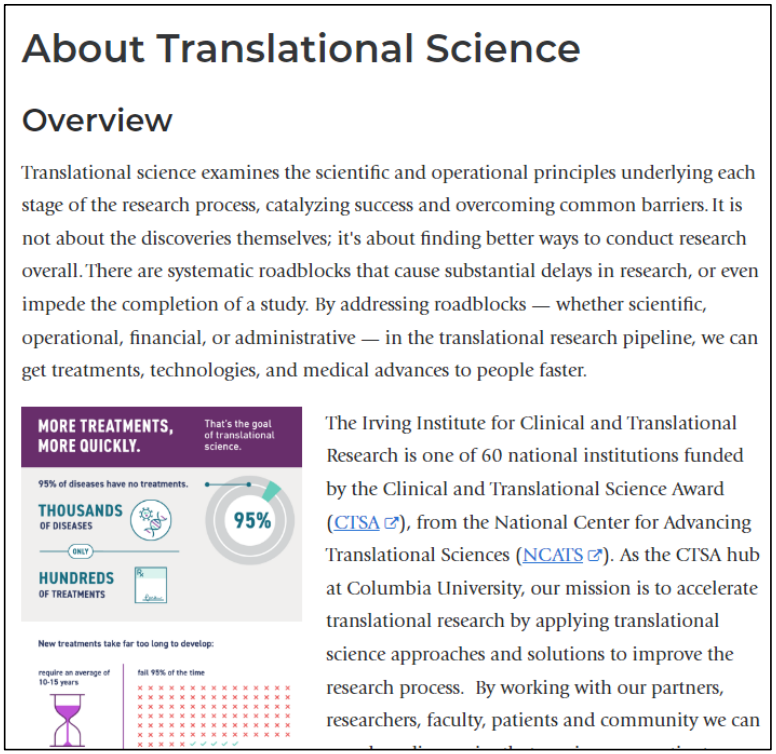
- incorrect predictions of the toxicity or efficacy of new drugs
- lack of data interoperability
- ineffective clinical trial recruitment

What does this look like in practice?

Translational Research	Translational Science
Aim: Test whether a particular drug improves outcomes in diabetes.	Aim: Test a particular diabetes drug, while **also examining the underlying barriers to recruitment of underserved participants and test new recruitment methods**.
Hypothesis testing: To test the hypothesis, the investigator plans to assess the effectiveness of the drug's effects and engage the diabetes community to recruit sufficient underserved participants, using established recruitment methods.	Hypothesis testing: To test the hypothesis, the investigator conducts the *same* translational research of the drug, **while also testing if the new recruitment methodology (i.e., the translational science innovation) is more effective, and generalizable to various drug trials.** This may require some modifications to the study design compared to the translational research example.

Where can I learn more?

Featured on our homepage



About Translational Science

Overview

Translational science examines the scientific and operational principles underlying each stage of the research process, catalyzing success and overcoming common barriers. It is not about the discoveries themselves; it's about finding better ways to conduct research overall. There are systematic roadblocks that cause substantial delays in research, or even impede the completion of a study. By addressing roadblocks — whether scientific, operational, financial, or administrative — in the translational research pipeline, we can get treatments, technologies, and medical advances to people faster.

The Irving Institute for Clinical and Translational Research is one of 60 national institutions funded by the Clinical and Translational Science Award (CTSA), from the National Center for Advancing Translational Sciences (NCATS). As the CTSA hub at Columbia University, our mission is to accelerate translational research by applying translational science approaches and solutions to improve the research process. By working with our partners, researchers, faculty, patients and community we can

https://www.irvinginstitute.columbia.edu/about-translational-science

Translational Science Pilot Award

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Translational Science Pilot Award

Program Goals: Support translational science projects that seek to address roadblocks faced by investigators across the research process and accelerate translational research

Eligibility: PI must have faculty appointment (assistant professor and above)

Award amount: $90,000

Duration: One year

Pre-Proposal Deadline: February 28th

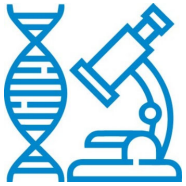
What kinds of projects?

Open to all diseases and conditions

Use Cases

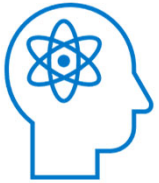
- **Add a translational science question to your translational research project**

Pre-proposals should:



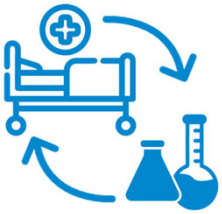
Barrier

Identify a translational research barrier they seek to address.



Innovation

Propose an innovative plan to mitigate the barrier (i.e., a translational science innovation).
The proposed innovations should be broadly generalizable to various conditions and translational research questions.

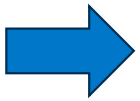


Evaluation

Describe how they will evaluate effectiveness in mitigating research inefficiencies.

What goes in the pre-proposal application?

- Project Team and Project Title
- Translational Science Hypothesis
- Specific Aims and Approach
- Budget and Biosketch



SPECIFIC AIMS AND APPROACH

Upload a PDF with your response. Maximum of 1 page.

List your specific aims and briefly describe your approach. Please address:

1. Translational barrier: What broadly applicable translational barrier is the project designed to address or overcome? How is addressing this barrier generalizable and how would addressing this barrier impact translational research across diseases and domains?
2. What interventions, methods, or tools will you use to address the translational barrier (i.e., your translational science innovation)? Describe any multidisciplinary and team science collaborations that will bolster your efforts.
3. What methods will you use to evaluate the effectiveness of your project?

Upload a file

Submission Process

Pre-Proposal Submission

Applicants will submit a brief pre-proposal in Survey Monkey Apply.

The Irving Institute will review pre-proposals and select projects to continue to the next stage.

Deadline: February 28

Full Proposal Submission

Selected pre-proposal applications will be provided with project development consultations and invited to submit a full proposal for funding consideration.

The full proposal will include a complete Research Strategy section and budget.

Deadline: April 18 (for invited projects)

Where can you get more information?

Program Materials

- Read the RFA on our website: http://tinyurl.com/TSPilotAward
- Apply via SM Apply

Contact us!

Application, budget, eligibility:

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