Translational Science Overview and Pilot Program
Irving Institute for Clinical and Translational Research
February 2024
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?

TRANSLATIONAL SCIENCE IS IMPROVING THE PROCESS:

Understanding what’s similar across diseases to help develop multiple treatments at a time

Developing models that better predict a person’s reaction to a treatment

Enhancing the design and conduct of clinical trials so the results more accurately reflect the patient population

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?

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<tr>
<th><strong>Translational Research</strong></th>
<th><strong>Translational Science</strong></th>
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<td><strong>Aim:</strong> Test whether a particular drug improves outcomes in diabetes.</td>
<td><strong>Aim:</strong> Test a particular diabetes drug, while also examining the underlying barriers to recruitment of underserved participants and test new recruitment methods.</td>
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<td><strong>Hypothesis testing:</strong> 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.</td>
<td><strong>Hypothesis testing:</strong> To test the hypothesis, the investigator conducts the <em>same</em> translational research of the drug, <em>while also testing if the new recruitment methodology (i.e., the translational science innovation) is more effective, and generalizable to various drug trials.</em></td>
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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.

What is Translational Science?
How can it improve the impact of your study.

https://www.irvinginstitute.columbia.edu/about-translational-science
Translational Science Pilot Award
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?
# Submission Process

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<th>Pre-Proposal Submission</th>
<th>Full Proposal Submission</th>
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<td>Applicants will submit a brief pre-proposal in Survey Monkey Apply.</td>
<td>Selected pre-proposal applications will be provided with project development consultations and invited to submit a full proposal for funding consideration.</td>
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<td>The Irving Institute will review pre-proposals and select projects to continue to the next stage.</td>
<td>The full proposal will include a complete Research Strategy section and budget.</td>
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**Deadline:** February 28

**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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