



Transforming Translational Science

The **National Center for Advancing Translational Sciences (NCATS)**, a component of the National Institutes of Health, conducts and supports research on the science and operation of translation to allow more treatments to get to more patients more quickly. The Center focuses on what is common across diseases and the translational process.

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 of investigation focused on understanding the scientific and operational principles underlying each step of the translational process.

Bridging the Gap

Several thousand diseases affect humans, and only about 500 have any treatment. A novel drug can take 10 to 15 years and more than \$2 billion to develop, and about 95 percent of human studies fail.

Numerous scientific and operational roadblocks limit the speed of progress. Solving this problem is NCATS' mission.

The Center is improving the translational process by:

- Understanding what is 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.

NCATS Strategic Principles

Catalytic: NCATS is a catalyst that enables others to perform more efficient and effective translation.

Generalizable Principles: NCATS uncovers fundamental principles shared among diseases and translational processes.

Innovative: NCATS' programs help improve translational understanding and effectiveness.

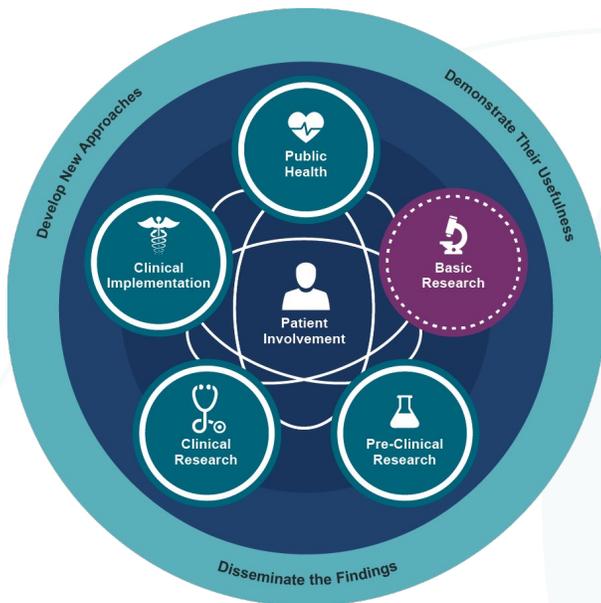
Collaborative: Translational research requires the expertise of multiple people and groups, particularly as research goes through different phases of the translational science spectrum.

Patient-focused: At all phases of translational science, NCATS is committed to patients and their communities and looks for opportunities to include the patient perspective.

Measurable: NCATS continuously improves translational effectiveness, and designs and implements programs with measurable results.

Spanning the Full Spectrum of Translation

NCATS' programs, initiatives and other resources span the entire spectrum of translational science.



The translational science spectrum illustrates the nonlinear, multidirectional process of scientific research from knowledge about the biological basis of health and disease to delivery of interventions that improve the health of individuals and the public.

The translational science spectrum represents each stage of research along the path from laboratory research to interventions that improve the health of individuals and the public. At all stages, NCATS develops new approaches, demonstrates their usefulness and disseminates the findings. Patient involvement is a vital part of research, and NCATS strives to engage patients and incorporate their perspectives across the spectrum.

Programs and Initiatives: ncats.nih.gov/programs

Translation Is a Team Sport

The translation of a basic discovery to an improvement in public health requires cross-disciplinary teams of scientists, clinicians and other stakeholders with wide-ranging expertise and perspectives.

Serving as a catalyst for translational science, NCATS supports innovative collaborations across scientific disciplines and organizations, including academia, industry and patient organizations, to reduce, remove or bypass significant bottlenecks across the entire continuum of translation.

Collaboration Opportunities: ncats.nih.gov/workwithus

An Emerging Field

NCATS is committed to fostering the recognition and growth of translational science as a field, as well as cultivating the next generation of translational scientists. In collaboration with a range of stakeholders, the Center supports in-depth and extensive training opportunities, and has created a suite of training resources and tools. The goal is to help individuals at all levels of expertise develop a better understanding of this emerging field and become involved in it. The Center also offers onsite translational science training opportunities for undergraduates, graduate student and postdoctoral fellows.

NCATS Training Opportunities and Resources: ncats.nih.gov/training-education



NCATS Rare Disease Day 2018: Tej Neaz Powell, patient representative, The Children's Inn at NIH; Shira Strongin, Founder, Sick Chicks; Youth Adult Advisory Council, The Children's Inn at NIH; Taylor Kane, Founder, Young ALD (Adrenoleukodystrophy) Carriers and Remember the Girls; Maddie Shaw, Founder, Maddie's Herd. Credit: Soñé Photography, LLC