National Institutes of Health (NIH)
National Center for Advancing Translational Sciences

Supporting the Clinical and Translational Science Workforce

NCATS' Clinical and Translational Science Awards (CTSA) Program supports a national network of medical research institutions—called hubs—that work together to improve the translational research process to get more treatments to more patients more quickly. The hubs collaborate locally, regionally and nationally to catalyze innovation in research methods, training and career development.

The CTSA Program promotes diverse activities and opportunities, listed below, to support a clinical and translational science workforce that improves the efficiency, quality and impact of the processes for turning observations in the laboratory, clinic and community into interventions that improve the health of individuals and the public.

Institutional Career Development Awards (KL2)

- The KL2 awards support more than 350 scholars a year and are required components of every CTSA Program hub award and offer senior postdoctoral fellows and junior faculty scholars protected time and multidisciplinary, mentored research career development in clinical and translational science research. Programs engage scholars in flexible educational offerings to facilitate their transition to research independence.

Institutional National Research Service Award (NRSA) Training Grants (TL1)

- The TL1 awards support more than 500 trainees a year and are optional components of every CTSA Program hub award and offer predoctoral and postdoctoral fellows training in clinical and translational science research. In addition, short-term research training (two to three months, typically during the summer) for students in health professional schools can be offered. Programs engage multiple departments, schools and clinical research institutes to support intensive research training, didactics leading to graduate degrees, team science and optional experiential learning. Programs introduce trainees to various aspects of clinical and translational research, including preclinical research, clinical research, clinical implementation and public health. Exposure to training in such broad areas as entrepreneurship, regulatory science and community-engaged research is encouraged.

CTSA Program Translational Workforce Development Activities

- Each hub houses a Translational Endeavors Core that supports Translational Workforce Development activities:
  - Supports continuing education in translational research for health care professionals.
  - Supports the development of innovative online tools or training collaborations in continuing education in translational research.
- Examples of resources that have been developed and disseminated include—
  - Good Clinical Practice Training: ncats.nih.gov/files/gcp-training.pdf
  - Good Clinical Practice for Social and Behavioral Research eLearning Course: www.sbm.org/training/good-clinical-practice-for-social-and-behavioral-research-elearning-course

The Development, Implementation and Assessment of Novel Training in Domain-based Competencies (DIAMOND) Project provides competency-based education and training to clinical research professionals: clic-ctsa.org/diamond

COLLABORATE. INNOVATE. ACCELERATE.

Diversity and Re-Entry Research Supplements

- The CTSA Program supports diversity and re-entry research supplements that promote diversity in health-related research and re-entry into biomedical and behavioral research careers. The goal is to build the clinical and translational research workforce that is prepared to improve the quality, safety, efficiency and speed of clinical and translational science research nationally. **Applications due: November 1**

- More Information: https://ncats.nih.gov/ctsa/funding/pa-2016-guidance
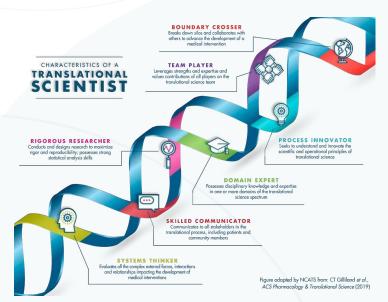
Loan Repayment Programs

- The NIH Loan Repayment Programs (LRP) were established by Congress and designed to recruit and retain highly qualified health professionals for biomedical and biobehavioral research careers.
  Application period: September 1–November 15

- More Information:
  - CTSA Program Informational Webinar: https://clic-ctsa.org/education/nih-repays-your-student-loans-ctsa-program-webinar
  - NIH LRP Main Page: www.lrp.nih.gov

Eli Lilly Externship Opportunity in Clinical and Translational Sciences

- The Eli Lilly Externship Opportunity in clinical and translational sciences at Eli Lilly and Company is for scholars, trainees and investigators who are supported by the NCATS Clinical and Translational Science Award Program. https://ncats.nih.gov/ctsa/training/resources/lilly-externship

Online learning resources for team science and community engagement: www.teamscience.net

CHARACTERISTICS OF A
TRANSLATIONAL SCIENTIST

BOUNDARY CROSSER
Breaks down silos and collaborates with others to advance the development of a medical intervention

TEAM PLAYER
Leverages strengths and expertise and values contributions of all players on the translational science team

PROCESS INNOVATOR
Seeks to understand and innovate the scientific and operational principles of translational science

RIGOROUS RESEARCHER
Conducts and designs research to maximize rigor and reproducibility; possesses strong statistical analysis skills

DOMAIN EXPERT
Possesses disciplinary knowledge and expertise in one or more domains of the translational science spectrum

SKILLED COMMUNICATOR
Communicates to all stakeholders in the translational process, including patients and community members

SYSTEMS THINKER
Evaluates all the complex external forces, interactions and relationships impacting the development of medical interventions

Figure adapted by NCATS from: CT Gilliland *et al.*, *ACS Pharmacology & Translational Science* (2019)

Seven Characteristics of a Translational Scientis

Innovations in Clinical and Translational Science Education and Training

- Online and interactive individualized development plan tool to advance clinical and translational science career development: https://ncats.nih.gov/ctsa/projects/ccia/supplements-2018#dissemination

- Collaborative approach to advancing clinical research workforce development through standardized training, implementation and evaluation: https://ncats.nih.gov/ctsa/projects/ccia/supplements-2019#collaborative

- I-Corps at NCATS Program: https://ncats.nih.gov/ctsa/projects/ccia/supplements-2017#i-corps

- Innovation Labs: https://ncats.nih.gov/ctsa/projects/ccia/supplements-2017#innovation

- N-Lighten Network: A Federated Platform for Education Resource Sharing: https://ncats.nih.gov/ctsa/projects/ccia/supplements-2017#nlighten

- Kaizen Education—Gamification for the CTSA Program in Translational Training: https://www.uab.edu/ccts/training-academy/innovation/kaizen

CTSA Program Education & Career Development Gateway

- Explore translational science learning and training resources here: https://clic-ctsa.org/education-careers

- Explore opportunities that complement training at your home institution: https://clic-ctsa.org/opportunities_board/sequin

About NCATS
ncats.nih.gov/about

CTSA Program
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CTSA Program Training & Career Development
ncats.nih.gov/ctsa/about/training

Translational Science Education & Training
ncats.nih.gov/training-education

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