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# What is the National Center for Advancing Translational **Sciences (NCATS)?**

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NCATS is one of 27 Institutes and Centers at the National Institutes of Health (NIH). Established in 2011, NCATS works to catalyze the generation of innovative methods and technologies that will enhance the development, testing and implementation of diagnostics and therapeutics across a wide range of human diseases and conditions. The Center focuses on what is common across diseases and the translational science process.

NCATS studies translation on a system-wide level as a scientific and operational problem to address such issues as drug efficacy and toxicology, therapeutic target validation, biomarker identification, and collaboration and partnership. NCATS serves as an adaptor to enable the entire continuum of translation to work more effectively and reduce, remove or bypass significant bottlenecks resulting in the high failure rates of novel therapeutic drugs.

Through its Division of Preclinical Innovation (DPI), NCATS provides a strong intramural (i.e., onsite) training program for high school, undergraduate and graduate students, as well as for postdoctoral trainees. NCATS scientists participate in a team environment and collaborate with individuals across the NIH Intramural Research Program, as well as with research organizations worldwide.

Summer Internship Program		
Who	High school students age 17 and older, undergraduate students, graduate students and professional school (e.g., medical, dental) students	
When	Apply mid-November to March 1	
Postbac	calaureate Intramural Research Training	
Award F	Program	
Who	Recent college graduates planning to apply to graduate or professional school (medical/dental/ pharmacy)	
When	Applications accepted year-round on a rolling basis	
Gradua	te Partnerships Program	
Who	Ph.D. students planning to enroll or currently enrolled in a graduate program	
When	Deadlines vary depending on the specific partnership program	
Postdoctoral Training in NCATS Research Groups		
Who	Doctoral graduates	
When	Applications accepted year-round on a rolling basis	
Contact	Belen Hurle, Ph.D., Director, Intramural Translational Training, NCATS DPI, at <u>belen.hurle@nih.gov</u> or	

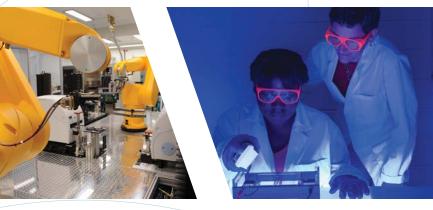
240-515-8856.

**Become a Scientist** 



### COLLABORATE, INNOVATE, ACCELERATE,





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

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My training at NCATS includes working on translational science projects that are executed in a well-defined approach using cutting-edge technology, such as high-throughput screening.

- Zhengxi Wei

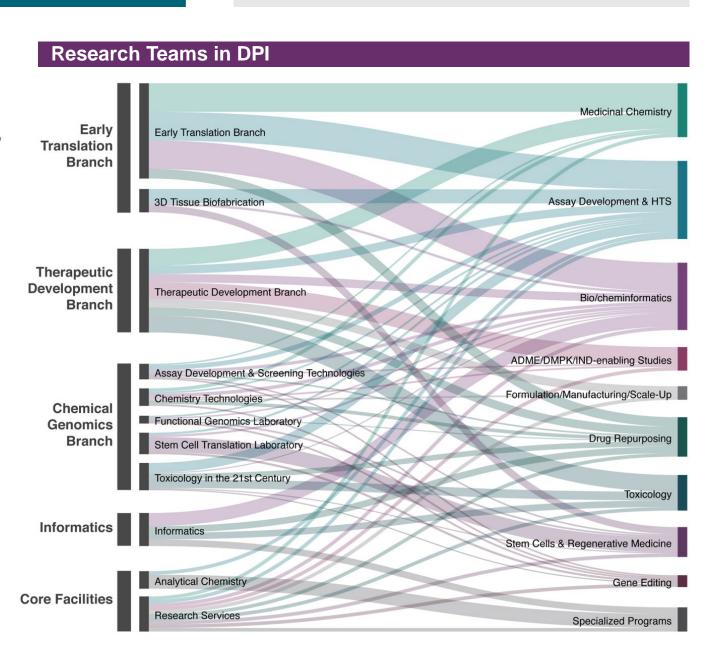
At NCATS, I am trained on instrumentation I never had access to as an undergrad.

- Drew Burns

## Division of Preclinical Innovation

Research in the DPI focuses on the early stages of the translational process and is conducted by multidisciplinary teams composed of biologists, chemists, informaticians, engineers and other scientists from a variety of disciplines. More information about the specific groups noted below can be found on our website.

DPI fellows can expect to gain skills in high-throughput screening and assay design, bio/cheminformatics and drug repurposing. There are also opportunities to engage in specialized projects utilizing adult induced pluripotent stem cell and tissue-printing technologies. Finally, DPI research provides the opportunity for fellows to not only interact with a diverse group of scientists but also connect with other collaborators and organizations to bring these research advances to patients. These organizations could include patient advocacy groups, private companies and other government agencies.



**Organizational and collaborative structure of DPI**. DPI research teams (left) are organized into specific branches and use a variety of technologies/skillsets (right) to complete research projects. The width of the ribbons represent the amount of effort contributed by each research team to a specific technology/skill set. The significant overlap of the ribbons signifies the level of collaboration a fellow can expect when conducting research at DPI.

A great asset for my project is the collaboration between the medicinal chemists, biologists and informatics specialists at NCATS. We're all working together to figure out how to make promising molecules work better.<sup>99</sup>

— Dorian Cheff