

Translational Genomics Research Institute



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Mission

The Translational Genomics Research Institute (TGen) is on the cutting edge of translational research where investigators are able to unravel the genetic components of common and complex diseases. Working with collaborators in the scientific and medical communities, TGen believes it can make a substantial contribution to the efficiency and effectiveness of the translational process. TGen's vision is of a world where an understanding of genomic variation can be rapidly translated to the diagnosis and treatment of disease in a manner tailored to individual patients.

TGen is dedicated to the next revolution in healthcare. With the patient at its helm, TGen is guided by three core principles: integrate, translate, and accelerate.

Strategy/Approach

In alignment with the institute's mission, TGen's strategy falls into three categories:

- **Integrate** – Recruits cross-functional teams, including engineers, geneticists, clinicians, biologists, and computational experts, that work with TGen to move their integrated research into the clinical setting.
- **Translate** – Focuses on quickly moving research discoveries into the clinic to benefit patients. TGen has established accelerators as vehicles to develop therapeutics, prognostics, and diagnostics and to deliver research discoveries to patients as quickly as possible.
- **Accelerate** – Emphasizes the strength and importance of collaborative partnerships. TGen has partnered with academia, government agencies, and clinical and corporate entities in Arizona and across the globe.

In addition to its broad network of laboratory investigators and research initiatives, TGen also maintains two drug development services, **TGen Drug Development (TD2)** and **TGen North**, which specialize in getting the newest and best oncology treatments to cancer patients as quickly as possible. TD2 helps companies identify patient populations most likely to respond to their compounds and shorten development timelines while ensuring new drugs are effective and safe. TGen North is the newest facility and heart of TGen's Pathogen Genomics Division.

Research Portfolio

To further genomic-based disease research, TGen has established novel research programs. By implementing specific population studies, significant genomic findings can be expedited that will positively impact individuals with diabetes, autism, prostate and breast cancer, melanoma, and gastric

cancer, to name a few. TGen has nine different **research divisions** under which its **research faculty** works. These divisions are designed to foster a wide range of genetic discoveries and draw heavily upon TGen's scientific platforms to expedite findings. They include:

1. Cancer and Cell Biology Division
2. Clinical Translational Research Division
3. Computational Biology Division
4. Diabetes, Cardiovascular & Metabolic Diseases Division
5. Integrated Cancer Genomics Division
6. Neurogenomics Division
7. Pathogen Genomics Division
8. Genetic Basis of Human Disease
9. Center for Proteomics

TGen's **labs** are staffed by teams of researchers focused on making genomic discoveries in common diseases and disorders in the areas of oncology, neurogenomics, and metabolic disease.

The organization also maintains a **clinical research program** – which is composed of The Virginia G. Piper Cancer Center Clinical Trials Program at Scottsdale Healthcare, The Genomic Medicine and Individualized Therapy Center, The Pancreas Cancer Center, and the Pharmacodynamic and Pharmacokinetic Lab – and research services such as **Bio4D**, a software solution for biospecimen management.

Finally, TGen hosts a **Collaborative Sequencing Center**, launched in the summer of 2010, which provides investigators who have limited resources with an outlet for performing next generation sequencing projects.

Partnership Practices

TGen engages in corporate, academic, and nonprofit alliances. The institute's academic partnerships take form through its research divisions. One such example is the Neuroblastoma & Medulloblastoma Translational Research Consortium, which is a collaboration between TGen and the Van Andel Research Institute to accelerate and improve individualized treatments for patients through a first-of-its-kind clinical trial.

TGen partners with biotech and pharmaceutical companies through **TD2**, the organization's drug development program. Examples include Avantra Biosciences, CytRx, and Flagship Biosciences.

Financials

TGen is a 501(c)(3) charitable organization. As a nonprofit research institute, it relies on state and federal funding as well

as charitable contributions. The most recent financial information available is from 2011.¹

Year ending 11/30/11:

- Revenue: \$6,025,718
- Assets: \$9,909,027
- Grants provided: \$6,629,446
- Gifts received: \$5,881,499
- Expenditures: \$8,096,243
- Total giving: \$6,629,446

Key Accomplishments

- TGen and Northern Arizona University researchers were awarded a \$2 million National Science Foundation grant to study potential connections between the biodiversity of soil microorganisms and the carbon cycle.
- An analysis of TGen's impact on the Arizona economy showed that in 2010 it produced \$25 for every \$1 invested, supported 1,124 jobs, generated \$10.1 million in state tax revenues, and had \$137.7 million in total annual economic impact.
- Using whole-genome sequencing, TGen researchers teamed up with the Technical University of Denmark and Northern Arizona University to pinpoint the source of 2010's cholera outbreak in earthquake-ravaged Haiti.
- The childhood cancer research computing cluster created and donated by Dell for TGen's Neuroblastoma and Medulloblastoma Translational Research Consortium is preparing to support the world's first precision medicine clinical trial for pediatric cancer.
- Through a partnership with TGen, the Virginia G. Piper Cancer Center Clinical Trials Program at Scottsdale Healthcare is currently running more than 50 active clinical trials for advanced and/or rare cancers, including one for an investigational drug that acts like a Trojan Horse to deliver cancer-killing agents.

Leadership

TGen is governed by a **Board of Directors** and relies on its **Council of Scientific Advisors** for counsel on related matters and policies.

- **President and Scientific Director:** Jeffrey Trent, PhD, jtrent@tgen.org
- **VP Marketing and Communications:** Galen Perry, gperry@tgen.org
- **Physician in Chief and Executive Vice President:** Daniel D. Von Hoff, MD, dvh@tgen.org
- **TGen Foundation President:** Michael Bassoff, mbassoff@tgen.org

¹ Information obtained from Foundation Center Directory, <http://fconline.foundationcenter.org>, May 2012.