Join Target 2035 at SGC-Toronto

Training the next generation of drug discovery scientists through the *Mitacs Target 2035 Fellows*

ABOUT THE STRUCTURAL GENOMICS CONSORTIUM (SGC)

The Structural Genomics Consortium (SGC) is a non-profit research organization and international public–private partnership dedicated to advancing drug discovery through open science.

Over the past 20 years, SGC has delivered hundreds of chemical probes and thousands of protein structures, making open data and research outputs freely accessible to scientists worldwide. Its unique model of pre-competitive collaboration and unrestricted data sharing has positioned the SGC as a global hub connecting researchers, hospitals, pharmaceutical companies, and technology partners.

With research facilities in Canada, the US, Germany, the UK, and Brazil, the SGC is the global leader of Target 2035, one of the most ambitious open-science initiatives in biomedical research.

www.thesgc.org

Our Impact

- **4,000+** Deposited Protein Structures
- **100+** Peer-reviewed publications annually, with 25% of them coming in collaboration with industry.
- **200+** Novel chemical probes
- **500+** Partnerships and collaborations with both public and private sectors.

A sustainable open-science ecosystem that connects academia, industry, and patients, while also training the next generation of scientists.

TARGET 2035

AN SGC-LED GLOBAL OPEN SCIENCE INITIATIVE TO "DRUG THE ENTIRE GENOME"

Launched and coordinated by the SGC, **Target 2035** is a global open-science initiative with an ambitious mission: to develop pharmacological modulators for every human protein by 2035.

Why it matters

- More than 90% of human proteins remain unexplored with chemical tools, limiting our ability to study disease and design therapies.
- Artificial intelligence (AI) can accelerate drug discovery, but it requires large, high-quality, open datasets that do not yet exist.

As part of the Target 2035 mission, SGC and its partners are generating and openly sharing protein–ligand datasets, creating the foundation for AI and machine learning (ML) to expedite the mission of Target 2035 more effectively and efficiently.

To achieve this, the initiative we will focus on:

- Generating ultra-large protein–ligand datasets using cutting-edge technologies such as affinity selection mass spectroscopy (AS-MS), DNA Encoded Libraries (DEL), and weak affinity chromatography (WAC).
- Building FAIR (Findable, Accessible, Interoperable, Reusable), open data platforms like **AIRCHECK** to make results openly accessible to the scientific community.
- Establishing benchmarking frameworks through **CACHE**, **CASP**, **DREAM** and **OpenADMET** challenges to compare and improve ML models.
- Creating a global network of machine learners, known as **MAINFRAME**, to develop open-source algorithms and predictive ML models of chemical bioactivity.
- Validating chemical tools and AI-driven pipelines for proteins with therapeutic potential.

PARTNERS: PHARMA • AI/TECH • ACADEMIA • FOUNDATIONS • SGC GLOBAL LABS

Academia	Hospitals	Non-Profit	Pharma	Life Sciences	Chemistry	Tech
GOETHE UNIVERSITAT, UCL, UNICAMP, EMBL-EBI, VHIO	UHN, SickKids	SGC	Pfizer, AstraZeneca, novo nordisk	abcam, NUVISAN	Vernalis, Enamine, CHEM-O-SPACE	ThermoFisher SCIENTIFIC, IBM

Read more about our roadmap on open drug discovery, published in Nature Reviews Chemistry

SGC-TORONTO: A HUB FOR TRAINING AND DISCOVERY

Toronto is the headquarters of the SGC and the center of its Canadian operations. Located at the University Health Network (UHN) within the MaRS Discovery District—Canada's leading research hospital and one of the world's top academic medical centers—SGC-Toronto offers a unique environment that combines world-class academic science with direct engagement from global industry partners.

SGC-Toronto comprises six Principal Investigators and operates under the leadership of Dr. Cheryl Arrowsmith, offering training opportunities for MSc and PhD students and postdoctoral researchers across experimental and computational disciplines.

Through its affiliation with the University of Toronto (UofT), SGC principal investigators hold UofT and UHN appointments, ensuring integration into both academic and clinical research communities. SGC trainees benefit from access to 14,000 sq. ft. of cutting-edge laboratory and computational space designed to support collaboration, innovation, and discovery at scale.

Toronto: a global centre for science and innovation

SGC-Toronto is based in downtown Toronto, one of the world's most diverse and dynamic cities, and home to Canada's largest biomedical research community. Toronto brings together leading universities, hospitals, start-ups, and global companies, creating a vibrant environment where science, technology, and innovation thrive side by side.

Trainees at SGC-Toronto work in the heart of Canada's largest innovation hub, with access to state-of-the-art laboratories and close connections to industry and clinical research.

Facilities and Capabilities

- **Protein production platforms** for expressing and purifying human proteins at scale.

- **Advanced screening technologies** (AS-MS, DEL) to rapidly explore protein–ligand interactions and generate the large datasets needed for advancing AI-guided drug discovery.

- **Cell culture suites** to test chemical tools directly in disease-relevant systems.

- **Comprehensive biophysics toolkit** to validate predictions from computational models.

- **Automated medicinal chemistry in a state-of-the-art self-driving lab**, built in partnership with the Acceleration Consortium, enabling rapid design–make–test cycles.

- **Computational and data infrastructure**, including high-performance computing, cloud resources, advanced computational chemistry, bioinformatics, data science, and AI/ML resources.

Important Links

1. Research at SGC-Toronto
2. Research at UHN - Office of Research Trainees

THE TRAINEE EXPERIENCE

Our trainees work at the intersection of biology, chemistry, computational drug discovery, data science, AI, and machine learning in a global, industry-engaged, open science environment.

Research areas include

- Medicinal chemistry
- Protein production and biophysics
- Molecular and structural biology
- Chemical and disease biology
- Computational drug discovery
- Data sciences and AI/machine learning
- Technology development and data generation
- Applications in cancer, neuroscience, rare diseases, and women's health

Every project is tailored to a trainee's expertise and supervisor, ensuring meaningful contributions from day one.
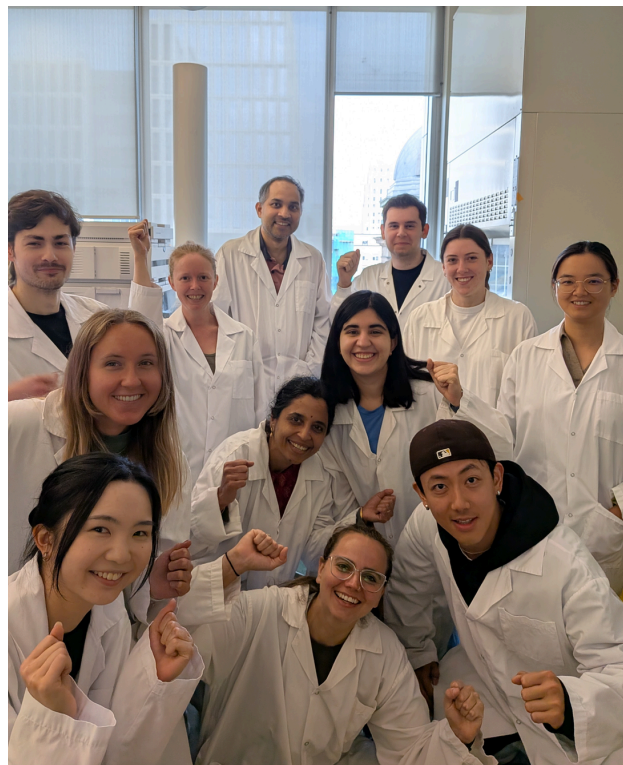
Depending on your focus, you may:

- Generate datasets and chemical tools
- Benchmark AI models
- Develop automation and screening technologies
- *In vitro* cell validation

Benefits of joining

At SGC-Toronto, you gain more than technical training; you join a global mission.
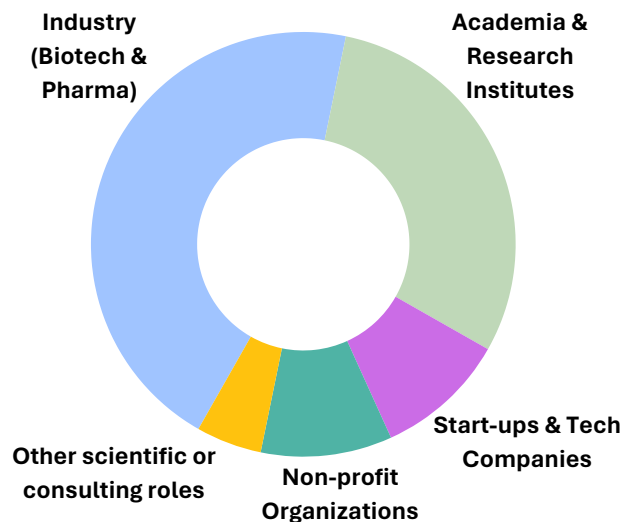
Our trainees benefit from:

- Hands-on access to state-of-the-art facilities and open datasets
- Open science publishing: share and present results in real time, without restrictions
- Industry engagement: work on co-developed projects and co-publish with leading pharma and tech scientists
- Professional growth: bootcamps, workshops, and career panels designed for career development.

Our alumni network

The SGC-Toronto alumni have gone on to impactful careers across academia, biotechnology, the pharmaceutical industry, and AI-driven drug discovery. Many now hold scientific, leadership, and data science roles at top institutions and companies worldwide.

Industry (Biotech & Pharma) · Academia & Research Institutes · Start-ups & Tech Companies · Non-profit Organizations · Other scientific or consulting roles

HOW TO APPLY

Many training opportunities at SGC-Toronto are offered through the Mitacs Target 2035 Fellows Umbrella, a national program that enables fellows to join globally coordinated, open drug-discovery research. Fellows are embedded in interdisciplinary teams contributing to real research outputs while building skills that are directly relevant to both academic and industry career paths.

Mitacs Target 2035 Fellows Umbrella

Join the Mitacs Target 2035 Fellows Umbrella at SGC-Toronto and work on globally coordinated, open science projects advancing the Target 2035 mission. This pathway supports graduate students and postdoctoral researchers in experimental and computational research areas.

Interested candidates should apply through the SGC Careers page by completing the online application form, uploading a CV, and indicating their primary area(s) of interest.

* This program is open to Canadian and international applicants.

Graduate Students

Apply via the University of Toronto Departments

Find more about our Principal Investigators →

Get in Touch

Do you want to be part of the mission?

Please contact Claudia Gordijo → claudia.gordijo@thesgc.org

Advance science. Build your career. Contribute to a mission with global impact.

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