INFORMATION SESSION

RESEARCH SOFTWARE DEVELOPMENT SUPPORT – Call for Projects

November 11, 2021

Gary Bader

Associate Director, **Data Management, Research Software, Advanced Research Computing**
Professor, **Professor and Ontario Research Chair at the Donnelly Centre for Cellular and Biomolecular Research, with cross-appointments in the Departments of Computer Science and Molecular Genetics, University of Toronto**

UNIVERSITY OF TORONTO | DATA SCIENCES INSTITUTE

About Us

🚀 **What is the Data Sciences Institute (DSI)?**

A multi-divisional, tri-campus, multidisciplinary hub for data science activity at the University of Toronto.

🎯 **Goal:** To accelerate the impact of data sciences across disciplines to address pressing societal questions and drive positive social change.
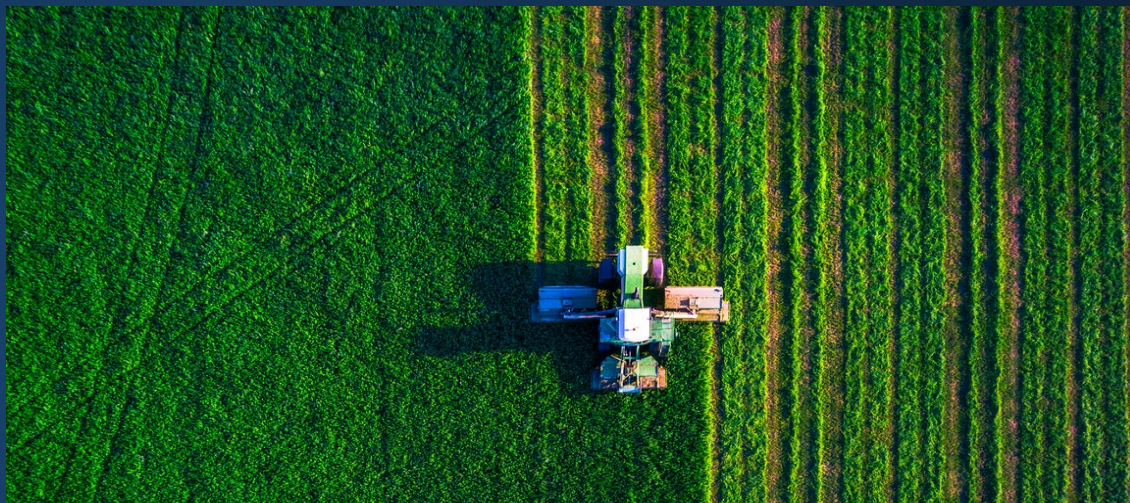
Collaborative Research Teams (CRTs) & Supports

Catalyze new forms of collaboration by funding partnerships that bring methodologists and domain experts together at the inception of projects in collaborative research teams (CRTs).

- Catalyst Grants
- Data Access Grants
- Postdoctoral Fellowships
- Doctoral Fellows
- Research Software Development Support
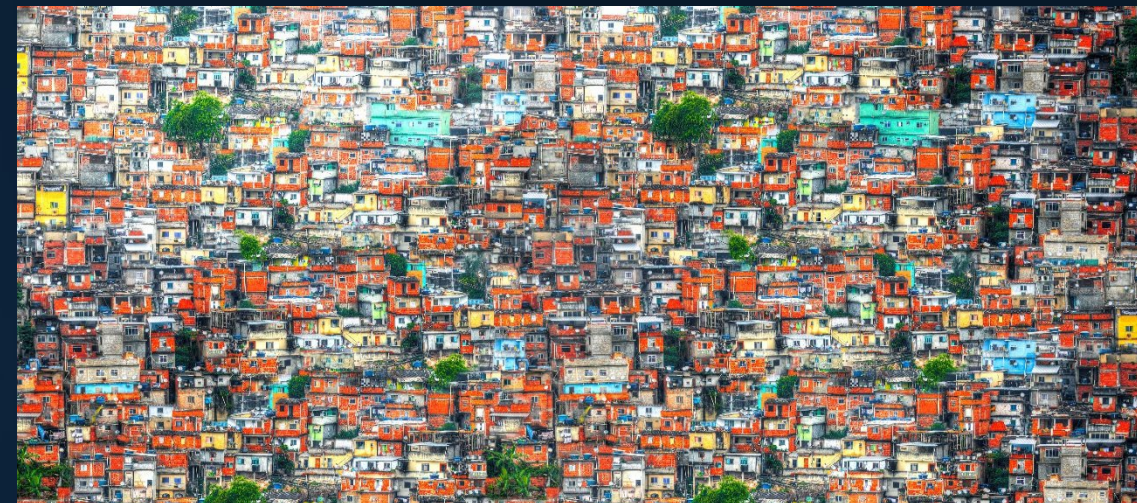- Summer Undergraduate Data Sciences Research Experience

UNIVERSITY OF TORONTO | DATA SCIENCES INSTITUTE

Big Questions: Initial Thematic Programs

●●●●●●

Thematic Programs are expected to be in place for 1-2 years, depending on input from the DSI community.

REPRODUCIBILITY

Develops widely adoptable methodology, processes, and infrastructure to share data and code locally and in privacy-compliant ways, and develops infrastructure, methods, and models that support reproducible and reliable research.

INEQUITY

Encourages the generation of evidence and tools to enhance our understanding of inequity and support equitable social change.

UNIVERSITY OF TORONTO

DATA SCIENCES INSTITUTE

DSI & Research Software Development Program

A DSI priority is to promote translation of methodology through software and to support data sciences research through the development of application-level research software and process.

- Custom research software is often needed
- Software enables research but is not always the focus
- Most researchers are not software experts
- Many labs are developing the same software tools
- Good software developers are hard to find

UNIVERSITY OF TORONTO | DATA SCIENCES INSTITUTE

DSI & Research Software Development Program

Help researchers to develop their software tools

- Help researchers to focus on research

- Support graduate students to develop necessary skills

- Combine an understanding of research process, research computing support, software development

Share tools with the wider community

- Software developed for one research group may have value for other researchers

- There are many existing software tools of which few are aware

- Create tools that can easily be extended / adapted / maintained

UNIVERSITY OF TORONTO

DATA SCIENCES INSTITUTE

Research Software Development Program

Help researchers **refine existing software tools** to improve usability and robustness **or build new tools**, disseminate research software beyond the research space in which it is created, and to enhance existing functionality.

Access to a professional research software developer to work alongside the research group

Up to a 0.5 FTE basis for 2 to 6 months

Application deadline: November 24, 2021

UNIVERSITY OF TORONTO | DATA SCIENCES INSTITUTE

Call for Projects: Eligibility

Open to all professorial staff eligible to hold research funding at U of T or at an external funding partner.*
For UofT – see who can be a PI at UofT:
https://research.utoronto.ca/engaging-research/who-can-be-principal-investigator-u-t

Be a member of the DSI

Researchers can be Co-PIs on only one submitted application.

PIs must:
• Have a **budgetary appointment** at U of T or at a DSI Funding Partner. Currently, DSI Funding Partners are: Lunenfeld-Tanenbaum Research Institute, University Health Network, and The Hospital for Sick Children.

For the University of Toronto, budgetary appointments are continuing, full-time academic appointments with salary commitments from a University of Toronto academic unit.

UNIVERSITY OF TORONTO

DATA SCIENCES INSTITUTE

Application Sections

Fillable Adobe PDF File – available on the DSI website; submit to <u>awards.dsi@utoronto.ca</u>

Deadline: November 24, 2021

01 The problem requiring support from the Research Software Development Team

02 The scope of the required software, how it is intended to be used, and how it might be used by other groups. Explain why existing software is not sufficient.

03 The current status of the software to be developed, including an estimate of the number of current users and an estimate of the number and range of intended users after working with the Research Software Development Team

04 The strategy for engaging with and supporting the Research Software Development Team to ensure a successful outcome within the intended timeframe.

05 How the software could be re-used outside of your discipline and include a plan for such re-use if possible (e.g., describe a specific data set from another discipline that would be usable by the software, include a co-applicant and corresponding use case from another discipline)

UNIVERSITY OF TORONTO | DATA SCIENCES INSTITUTE

Project Adjudication

Applications will be assessed by a selection committee made up of researchers from the **DSI Research & Academics Committe**e using the criteria.

- Quality of supported research project

- Quality of the technology choices required for the software project, and requirement for new software compared to using existing solutions

- Project scope, timelines and goals are clear and appropriate for the resources of the call

- Impact and re-use potential of the software for research

- Fit with research software developer team skills

- Quality of plan to engage with the research software developer team (e.g., defining requirements, involvement with software development and testing process)

UNIVERSITY OF TORONTO | DATA SCIENCES INSTITUTE

Research & Academics Committee

Lisa Strug (Chair), Depts. of Statistical Sciences, Computer Science; The Hospital for Sick Children (SickKids)

Periklis Andritsos, Faculty of Information (iSchool)

Alán Aspuru-Guzik, Depts. of Chemistry and Computer Science, Faculty of Arts & Science (A&S)

Gary Bader, Donnelly Centre for Cellular and Biomolecular Research, and Depts. of Computer Science and of Molecular Genetics

Michael Brudno, Dept. of Computer Science, A&S; UHN Digital

Suzanne M. Cadarette, Leslie Dan Faculty of Pharmacy; DLSPH

Timothy Chan, Dept. of Mechanical & Industrial Engineering, Faculty of Applied Science & Engineering

Karen Chapple, Dept. of Geography & Planning, A&S

Beth Coleman, iSchool; Institute of Communication, Culture, Information & Technology, UTM

Ethan Fosse, Dept. of Sociology and Social Change Lab, UTSC

Adam Hammond, Dept. of English, FAS

Anne-Claude Gingras, Dept. of Molecular Genetics and Lunenfeld-Tanenbaum Research Institute

Angelina Grigoryeva, Dept. of Sociology, UTSC

David Guttman, Dept. of Cell & Systems Biology, A&S

Benjamin Haibe-Kains, Dept. of Medical Biophysics, Temerty Faculty of Medicine and Senior Scientist, Princess Margaret Cancer Centre, UHN

Marianne Hatzopoulou, Dept. of Civil & Mineral Engineering

Juna A. Kollmeier, Canadian Institute for Theoretical Astrophysics

Eyal de Lara, Dept. of Computer Science, A&S

Kuan Liu, Institute of Health Policy, Management & Evaluation, DLSPH

Bree McEwan, Institute for Communication, Culture, and Information Technology, UTM

Mary Pugh, Dept. of Mathematics, A&S

Nancy Reid, Dept. of Statistical Sciences, A&S

Laura Rosella, DLSPH and Dept. of Laboratory Medicine & Pathobiology, Temerty Faculty of Medicine

John Rubinstein, Depts. of Biochemistry and Medical Biophysics; SickKids, Molecular Medicine Program

Ryan Webb, Rotman School of Management

Stanislav Volgushev, Dept. of Statistical Sciences, UTM

Important dates

November 24, 2021: Applications are due at 12pm noon EST; Application form sent to
awards.dsi@utoronto.ca

December 10, 2021: Notification of initial application outcomes will be delivered

The three to five most highly ranked applications will be invited to discuss their proposals in more detail with the selection committee

January 10-21, 2022: Shortlisted applicants meet with the selection committee. Two or three projects will be selected as the best fit for the program.

After February 7, 2022: Projects will begin

Frequently Asked Questions

Am I eligible if my appointment at UofT is status-only?

Only individuals with a primary (budgetary) appointment at UofT or a Funding Partner are eligible.

Are there research topics or priorities that the DSI wants to support in this round of applications?

No. The DSI is aiming to connect with a diverse set of research areas across the university community.

Can this be a start-up project or should it already be well advanced?

Either works.

Are there programming languages / frameworks that the DSI prefers to work with that should inform our applications?

Our research software developer is well-versed in Python, R and web-development, but could likely work with a range of technologies.

Do applicants need to specify the software to be used, or is that something that can be worked out with the programmer?

The applicants need to define the requirements and use cases and will collaboratively work with the programmer to implement those.

UNIVERSITY OF TORONTO

DATA SCIENCES INSTITUTE

Frequently Asked Questions

Is there an application form?

Yes, there is a short 2.5 page fillable ADOBE pdf form available on the Call web page. Instructions for filling out and naming the form are included on the site.

How many grants will be awarded?

Two to three projects for the 2021-22 round

How often will this competition be held?

Once a year.

Can a proposed project include researchers and developers from other institutions?

Yes. Ideally, the application would precisely define the contribution needed from DSI so we can understand the scope of work for DSI.

Are there specific areas of research for an application

DSI welcomes applications from a broad range of areas – social sciences, life and physical sciences, and humanities.

UNIVERSITY OF TORONTO

DATA SCIENCES INSTITUTE

Reporting

As a reporting requirement, it is expected that applicants respond promptly to surveys, questionnaires, or enquiries from the DSI on topics such as papers submitted to or accepted for publication in peer-reviewed journals, oral and poster presentations given at seminars, scientific meetings, or conferences and competitive applications submitted to external agencies for funding. Applicants will be clearly notified of submission dates and format requirements.

e Project and related findings must e presented in oral or poster format the DSI Research Day in the year or the immediately subsequent year e award is made.

THANK YOU

✉ Send us your questions
info.dsi@utoronto.ca

📍 Sign up for news
https://datasciences.utoronto.ca/mailinglist/

🐦 Follow us @UofTDSI