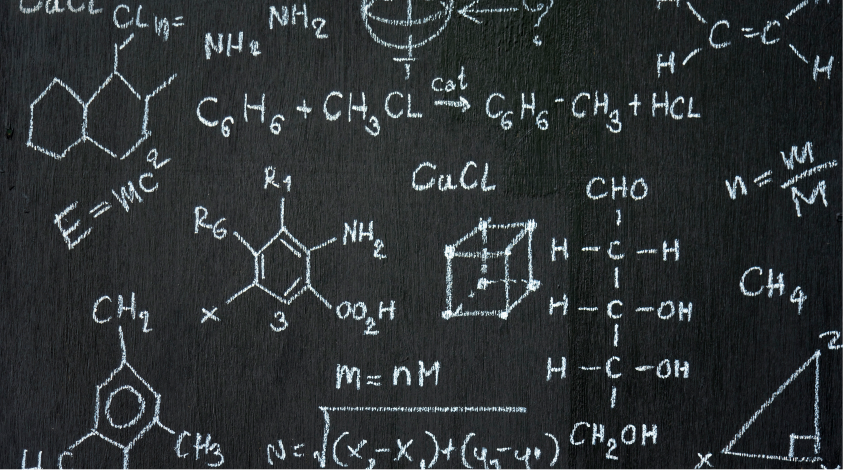
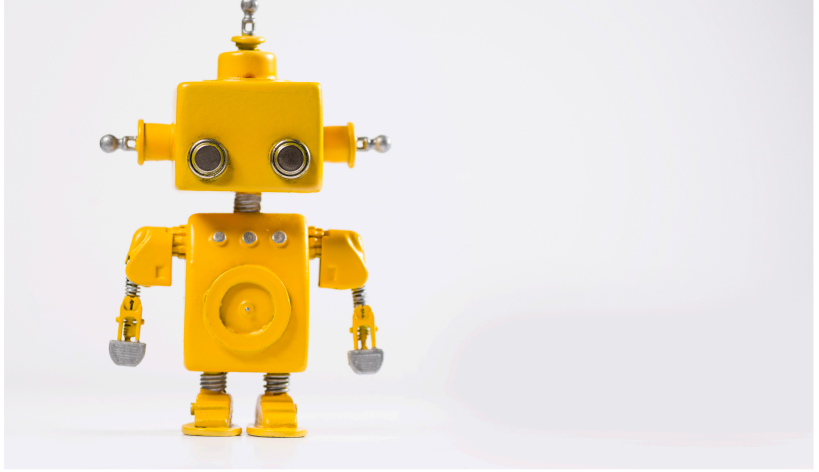
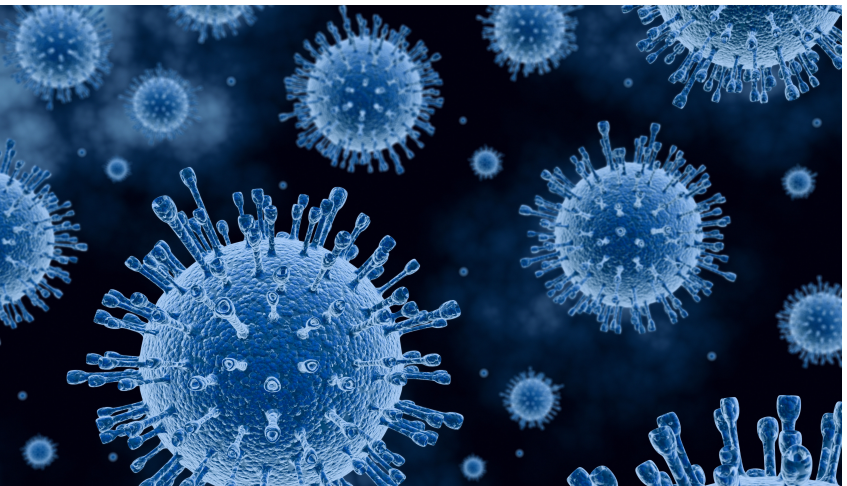






Open Science & Societal Impact

20 April, 2022

Towards Building Public Trust and Understanding in Science

Arij Al Chawaf, PhD

Executive Director, Strategic Initiative Development

Institutional Strategic Initiatives, University of Toronto

In Science We Trust

- Without the public's trust in science, our research discoveries fail to achieve their transformative potential

- Scientists must foster understanding not only in their scientific concepts and theories, but also in how scientific knowledge is produced

But how can we foster understanding and trust?

SGC

YCHAROS
ANTIBODY CHARACTERIZATION THROUGH OPEN SCIENCE

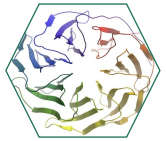
MEDICINES 4 KIDS
4K PHARMA

UNIVERSITY OF TORONTO

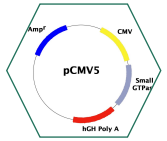
Structural Genomics Consortium

Supporting the discovery of new medicines through open science

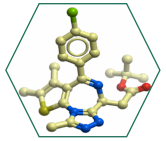
3D Protein Structures



Expression Vectors, Plasmids & Constructs



Chemical Probes



Experimental protocols

SGC

Structural Genomics Consortium (SGC)

Open Science Policy

Introduction

The Structural Genomics Consortium ("**SGC**") is a partnership of public and private funders ("**Members**") formed to support and engage in pre-competitive research to better understand human disease biology and to facilitate the discovery of new medicines. The SGC's scientific program is carried out at host academic institutions ("**Institutions**") and the scientists who are formally associated with the SGC at these Institutions ("**SGC Scientists**") engage in research to generate enabling reagents and knowledge related to proteins of potential therapeutic relevance. The SGC believes that these outputs will have maximal benefit if released into the public domain without restriction on use, and thus has adopted this Policy.

SGC Open Science Policy

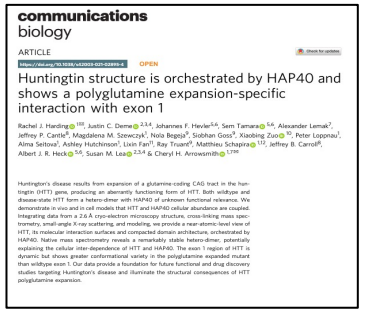
The SGC, SGC Scientists, and their research collaborators must commit to making their open access research outputs (materials and knowledge) publicly available without restriction on use. This means the SGC and SGC Scientists will seek to place open access results arising from SGC Scientists' research projects (internal or collaborative) in the public domain and may not file for patents or other registered intellectual property protections in respect of the outputs of these research projects.

https://www.thesgc.org/sites/default/files/fileuploads/sgc_open_science_policy.pdf

Accessible sharing of research results, sooner

Lead:
Matthieu
Schapira

Publication: 2 years

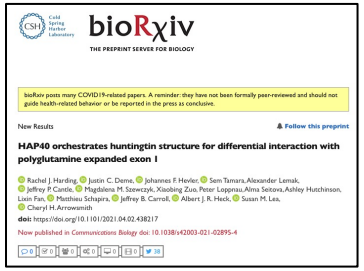

communications biology

ARTICLE

OPEN

Huntingtin structure is orchestrated by HAP40 and shows a polyglutamine expansion-specific interaction with exon 1

Preprint: 1.5 years


bioRχiv

THE PREPRINT SERVER FOR BIOLOGY

bioRxiv posts many COVID19-related papers. A reminder: they have not been formally peer-reviewed and should not guide health-related behavior or be reported in the press as conclusive.

New Results

Follow this preprint

HAP40 orchestrates huntingtin structure for differential interaction with polyglutamine expanded exon 1

Rachel J. Harding, Justin C. Deme, Johannes F. Hevler, Sem Tamara, Alexander Lemak, Jeffrey P. Cantle, Magdalena M. Szewczyk, Xiaobing Zuo, Peter Loppnau, Alma Seitova, Ashley Hutchinson, Lixin Fan, Matthieu Schapira, Jeffrey B. Carroll, Albert J. R. Heck, Susan M. Lea, Cheryl H. Arrowsmith

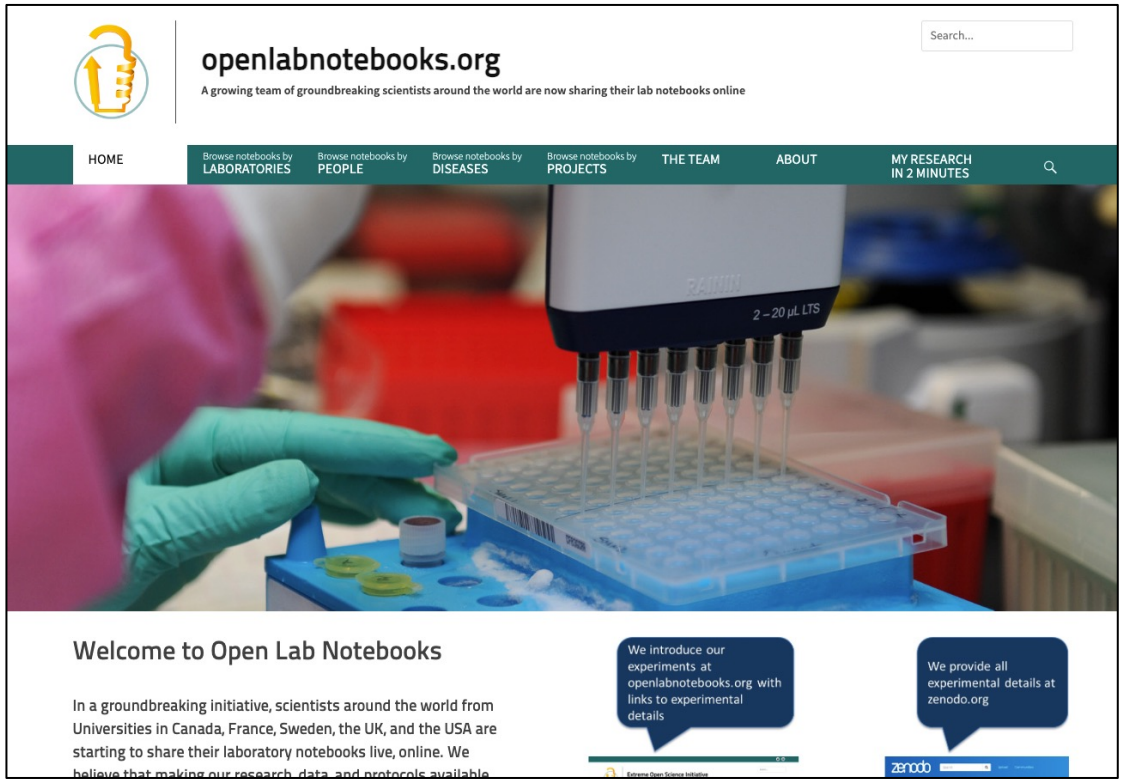
doi: https://doi.org/10.1101/2021.04.02.438217

Now published in Communications Biology doi: 10.1038/s42003-021-02895-4

1-2 months

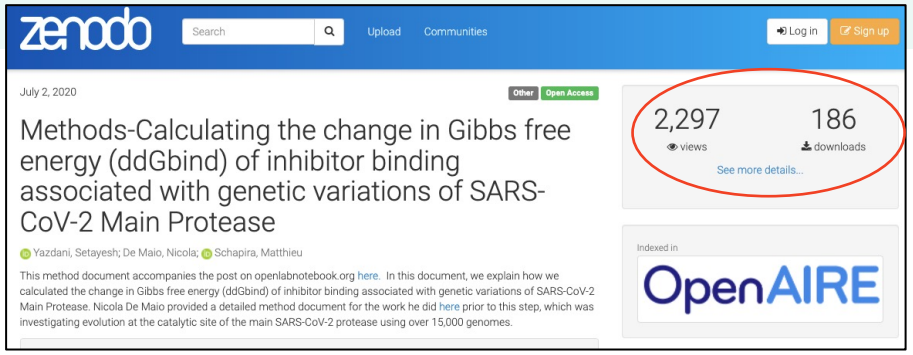
openlabnotebooks.org

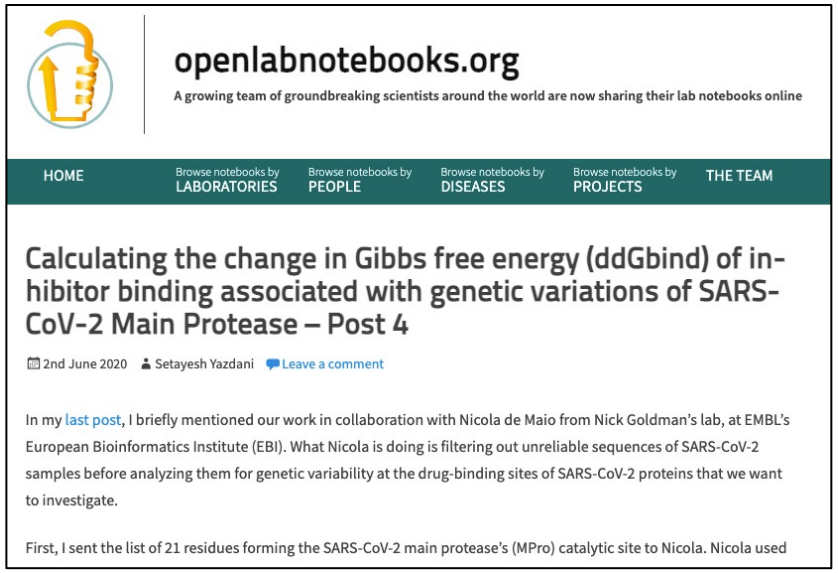
A growing team of ground-breaking scientists around the world are now sharing their lab notebooks online



Open Lab notebooks

Experiments in the lab





Materials, methods, data shared in **open online notebook** with unique DOI

Linked Blog post: Discussion of experiment including lay summary, context and next steps

- Share failures and negative data which currently are not publishable in peer-review journals
- Share details that enable others to replicate a study step by step
- Prevents redundancy and improves reproducibility
- Blog posts written in accessible language that helps the public understand the research process

Connecting with research stakeholders

LabScribbles @LabScribbles · Oct 24, 2019

And the week was capped with a fantastic @HuntingtonSC community education forum at Runnymede health centre organised by the local Toronto chapter

1 5

openlabnotebooks.org

A growing team of groundbreaking scientists around the world are now sharing their lab notebooks online

Search...

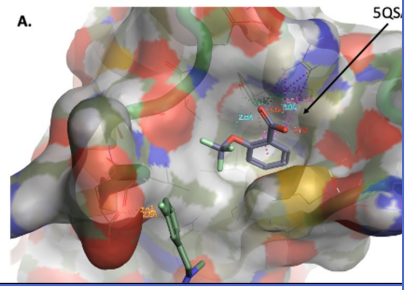
HOME | Browse notebooks by LABORATORIES | Browse notebooks by PEOPLE | Browse notebooks by DISEASES | Browse notebooks by PROJECTS | THE TEAM | ABOUT | MY RESEARCH IN 2 MINUTES

TBXT ligands for Chordoma: lactams for pocket F

Search...

5th August 2021 David Drewry 2 Comments

Our initial fragment screen identified four different frag
be found in the Protein Data Base (pdb) with these code
some observations from these structures that suggest p
line acid) that came from a virtual screening exercise us
lactams we have synthesized and purchased to begin to



2 Replies to 'TBXT ligands for Chordoma: lactams for pocket F"

John Henry Dye says:
8th August 2021 at 4:25 pm

Thank you for the update. I share each of theses posts with the Chordoma Survivor community on FB, though we know you are a long way from a clinical application, your updates buoy our spirits and give us hope for better treatments in the future. Thank you again from all those also touched by Chordoma.

Reply

David Drewry says:
22nd August 2021 at 8:40 pm

Dear John,

You are very welcome. Thank you for sharing these posts with your community and also for letting me know that

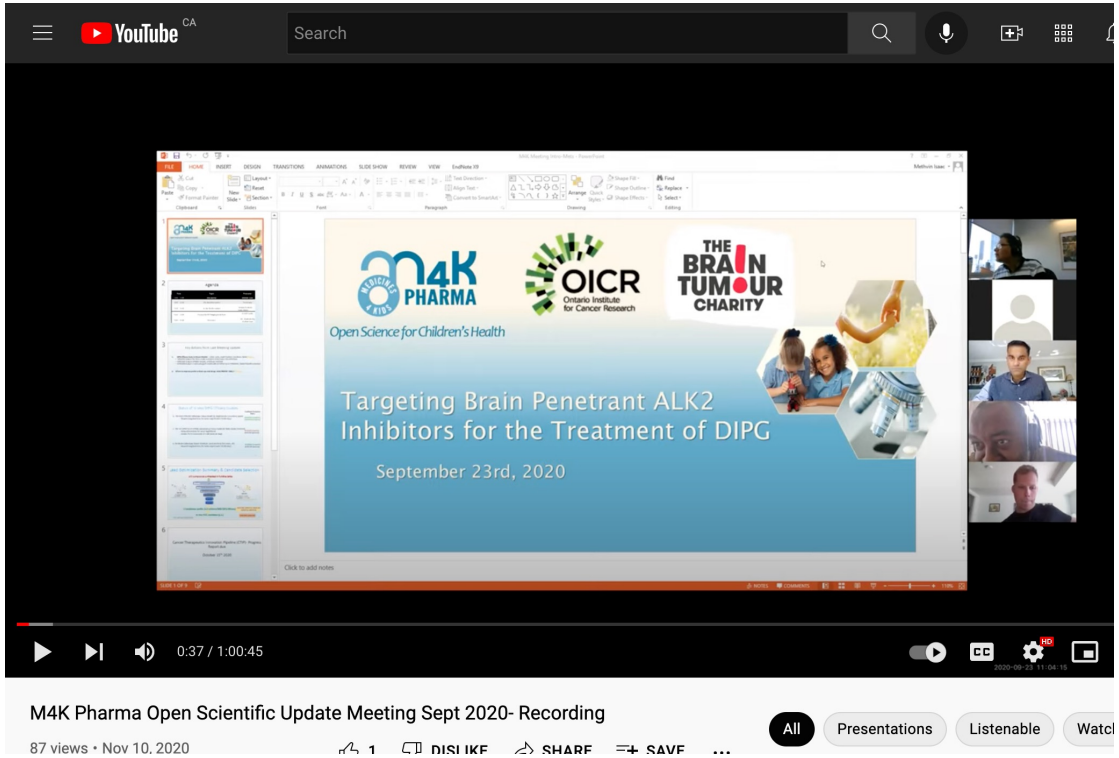
M4K Pharma

Founder
Aled Edwards

- Developing a therapeutic option for Diffuse Intrinsic Pontine Glioma (DIPG) – targeting ALK2 Kinase, a validated disease driver

- **Commitment to Open Science:** rely on market exclusivity and data protection mechanisms.
- **Commitment to Affordability:** medicines priced to ensure access to anyone who needs them

- Using open science to change how affordable new treatments are discovered and developed.
- Aggregated research community resources
  - Significantly reduced costs
  - Exceeded scientific deliverables



YChaROS: focus on reproducibility

YCHAROS
ANTIBODY CHARACTERIZATION THROUGH OPEN SCIENCE

CEO
Chetan Raina

- Crisis of confidence and reproducibility
- Research antibodies: basic reagents to interrogate proteins
- Global annual sales estimated to be US$2-3 Billion
- 50% of commercial antibodies do not perform as intended
  - No standard for testing
  - Estimate US$800,000 wasted every year

Published: 19 May 2015

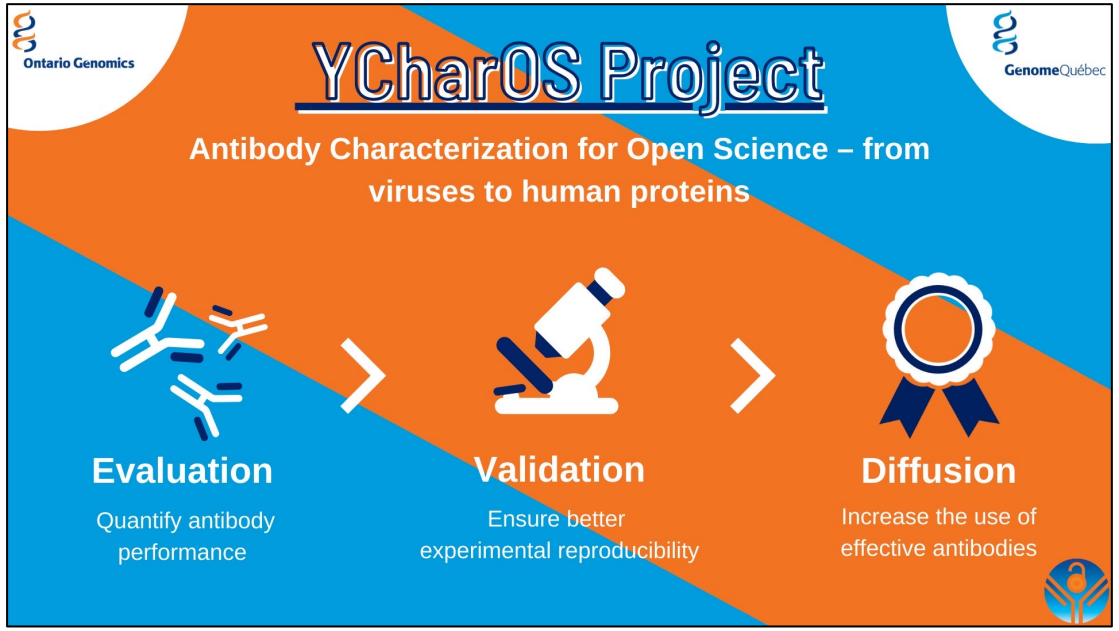
Reproducibility crisis: Blame it on the antibodies

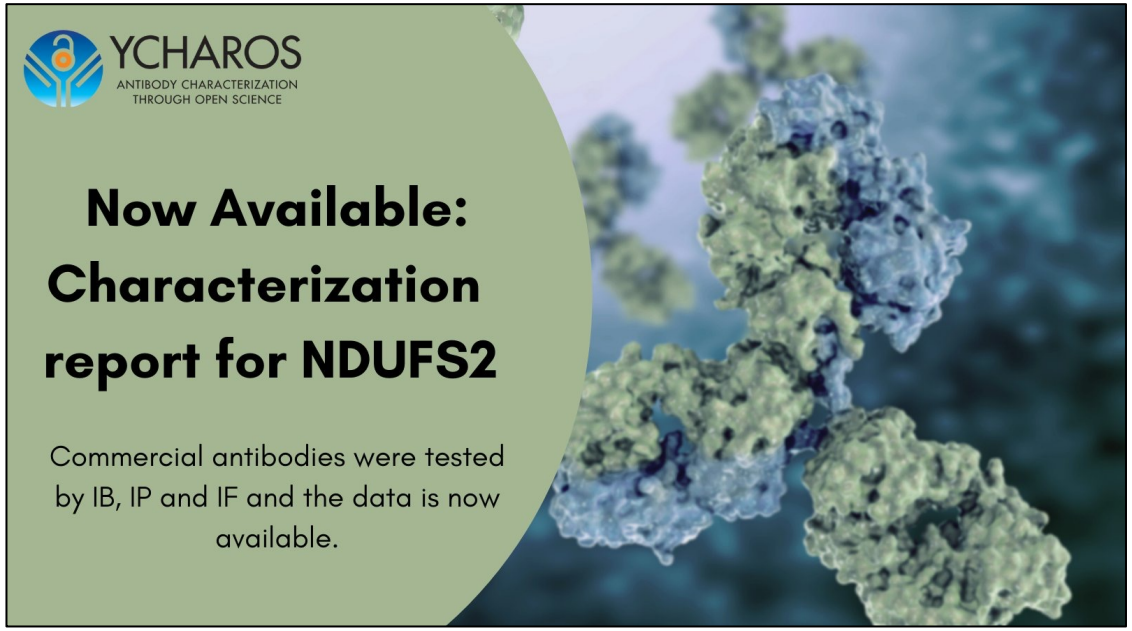
Monya Baker

Nature **521**, 274–276 (2015) | Cite this article

3005 Accesses | **490** Citations | **1000** Altmetric | Metrics

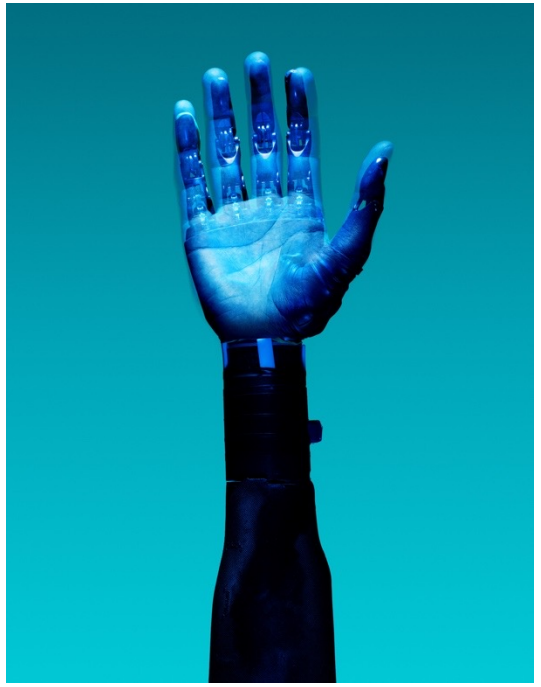
Antibodies are the workhorses of biological experiments, but they are littering the field with false findings. A few evangelists are pushing for change.

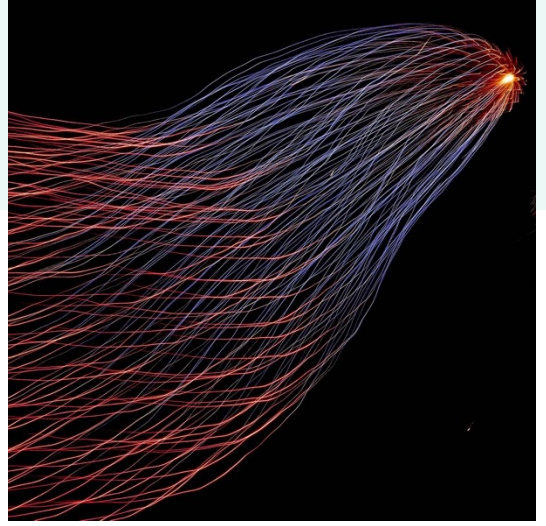


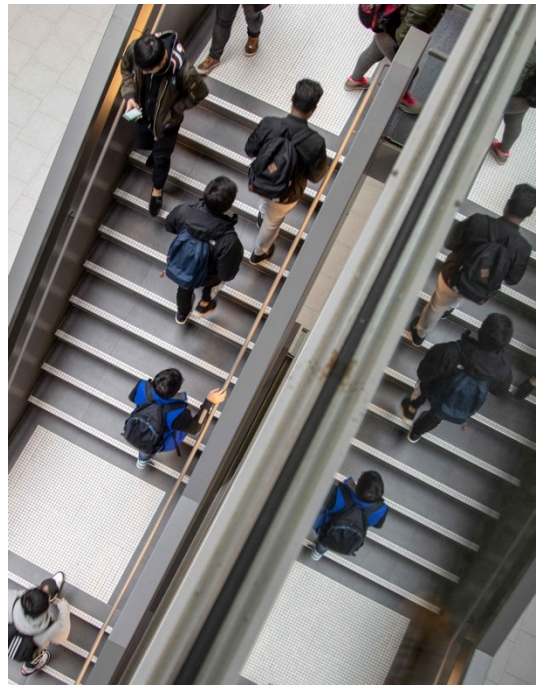


Institutional Strategic Initiatives

Launched in 2019 to increase the University of Toronto's capacity to support and scale cross-divisional, high-impact interdisciplinary research initiatives that address grand challenges of societal importance







UNIVERSITY OF TORONTO

ISI Supported Initiatives

THE CENTRE FOR RESEARCH & INNOVATION FOR BLACK SURVIVORS OF HOMICIDE VICTIMS

Acceleration Consortium

CLIMATE POSITIVE ENERGY

Critical Digital Humanities Initiative

INLIGHT Student Mental Health Research

CRAFT

DATA SCIENCES INSTITUTE

EPIC Emerging & Pandemic Infections Consortium

INSTITUTE FOR PANDEMICS

BRN Black Research Network

MITO2i MITOCHONDRIAL INNOVATION INITIATIVE

Mobility Network

Quantum

UNIVERSITY OF TORONTO Robotics Institute

INDIGENOUS RESEARCH NETWORK

Sustainable Development Goals

TORONTO CANNABIS AND CANNABINOID RESEARCH CONSORTIUM

TRANSFORM HF

MEDICINE by DESIGN

PRIME NEXT-GENERATION PRECISION MEDICINE

SCHWARTZ REISMAN INSTITUTE FOR TECHNOLOGY AND SOCIETY

SGC

School of Cities UNIVERSITY OF TORONTO

IN DEVELOPMENT

Biomanufacturing

Centre for Medicinal Chemistry

Centre for Sports Science & Sports Medicine

Historical contexts for research engagement with Indigenous Communities

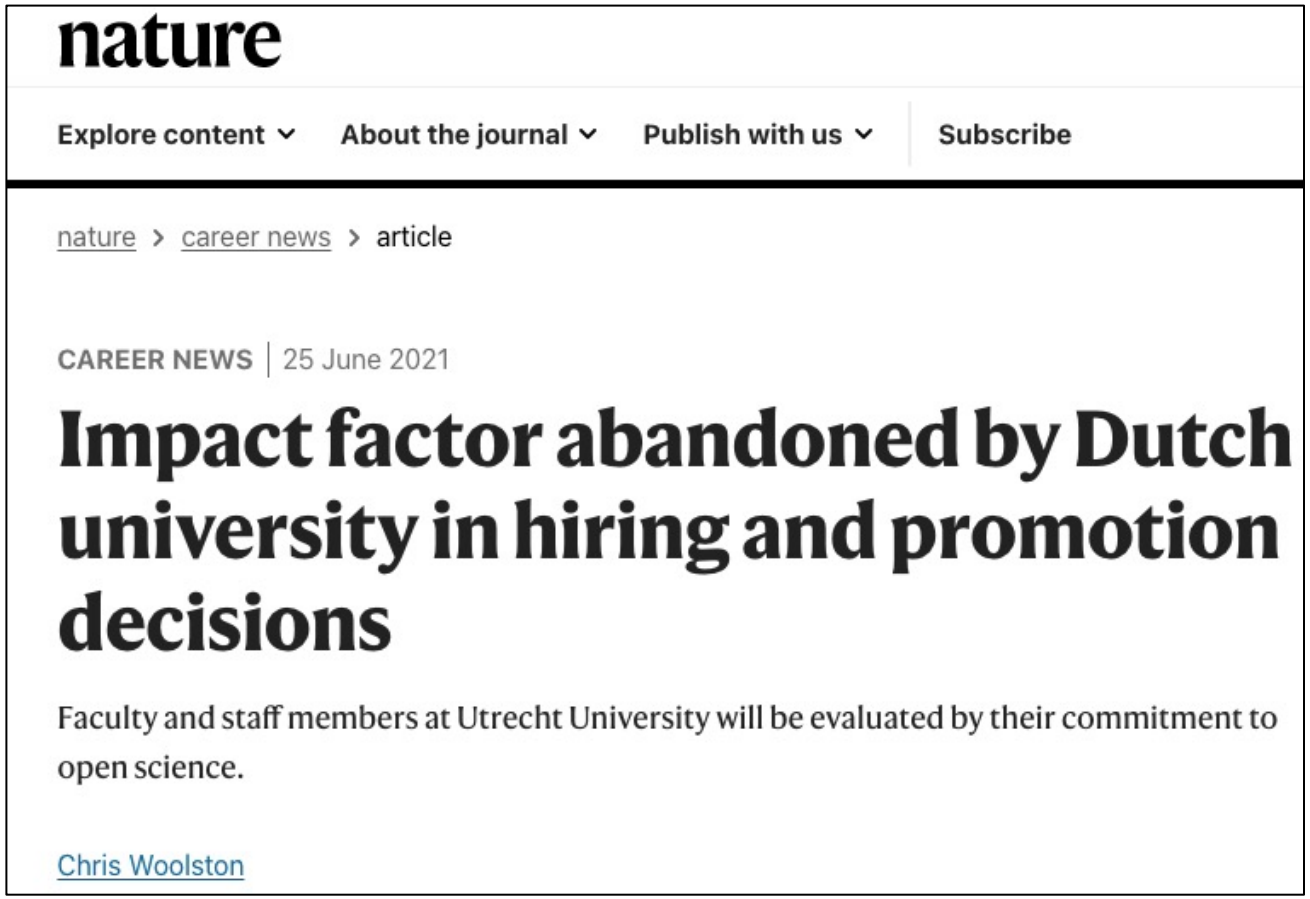
Norval Morrisseau, *Androgyny*, 1983

INDIGENOUS RESEARCH NETWORK

Support and inspire **Indigenous research** at U of T by connecting people and communities with each other and with academic, cultural and spiritual resources

How can you foster the Public's trust and understanding?

- Researchers:
  - Consider making your own research accessible to the general public
  - Focus on using validated research tools including antibodies
- Institutions and organizations:
  - Reward researchers who commit to open science
  - Think of traditionally marginalized groups and being inclusive to their ways of knowledge



nature

Explore content ⌄ About the journal ⌄ Publish with us ⌄ Subscribe

nature › career news › article

CAREER NEWS | 25 June 2021

Impact factor abandoned by Dutch university in hiring and promotion decisions

Faculty and staff members at Utrecht University will be evaluated by their commitment to open science.

Chris Woolston