Canadian Brain Research Strategy
Transforming the future through brain science

canadianbrain.ca
The global brain initiatives recognize that they are engaged in an effort so large and complex that even with the unprecedented efforts and resources from public and private sectors, no single initiative will be able to tackle the challenge to measure, map, image, model, simulate, understand, imitate, diagnose and heal the brain.

IBI Declaration of Intent, December 2017

Working groups
- Global Neuroethics
- Data Standards & Sharing
- Inventory of Global Brain Projects
- Education & Training
- Communication & Outreach
- Tool & Technology Dissemination
Neuroscience Research in Canada

State-of-the-art and cutting-edge knowledge and infrastructure across >30 Canadian research-intensive universities and research hospitals

Legacy in brain science

Artificial intelligence, cognition, traumatic brain injury, stress and anxiety, chronic pain, neurodevelopment, neurodegeneration, and neurotechnology
Neuroscience Research in Canada

Cross-cutting contemporary strengths

Neuroimaging, neuroethics, neurostimulation, neurophotonics, neurocomputation, genomics, neuroinformatics
Who we are

Neuroscience Program

VISTA: Vision, Science to Applications

Healthy Brains, Healthy Lives
**MISSION:** build on Canada’s strengths and current investments in neuroscience to transform neurological and mental health for Canadians.

**VISION:** innovative and collaborative brain science driving policy, social, health and economic advancement for Canada and the world.

...towards a neuroscience-driven nation

Enabling Principles

✓ Collaborative
  
  strengthen Canada’s scientific culture of collaboration

✓ Transdisciplinary
  
  build a common language across disciplines; train a new generation of transdisciplinary researchers

✓ Open
  
  build on Canada’s existing open science initiatives
Pillars of the Strategy

UNDERSTAND normal brain development and functioning
✓ Neuroplasticity across the lifespan

ADDRESS health challenges through prevention and treatment
✓ Optimizing prevention & treatment

APPLY brain research to improve individual brain health, education, and societal and cultural well-being
✓ Maximize potential of every individual

BUILD better artificial intelligences via brain-inspired computational approaches

Central Organizing Question

How does the brain learn, remember, and adapt?
Neurodegeneration as an urgent threat to the health of the Canadian and global populations is an increasingly pressing challenge. A pragmatic, evidence-informed approach to determine how research can be optimally synthesized and prioritized for the utmost ethical and social benefit of the citizens of our diverse country.

1. Harness neuroscience insights to maximize the potential of every individual at every life stage
2. Identify and promote factors that enhance individual and population resilience, prevent insults and vulnerabilities, and promote recovery.
3. Deliver innovative ethical and social frameworks needed to catalyze and protect
4. Encourage data sharing, accelerated and systematized discovery, and implementation, translation and democratization of technology

Publications

January 2020
International Brain Initiative: An Innovative Framework for Coordinated Global Brain Research Efforts

February 2019
Neuroethics to form foundation of multi-pillar Canadian Brain Research Strategy (CBRS)

January 2019
The Canadian Brain Research Strategy – A roadmap to a neuroscience-driven nation

February 2018
Globe and Mail Opinion – We need a national brain-research strategy
by Lynn Raymond and Joyce Gordon

April 2016
G Science Academies Statement on Brain Research – Understanding, Protecting, and Developing Global Brain Resources
Major Initiatives

➢ National Transdisciplinary Training Platform
  ✓ A new generation of scientists to conduct transdisciplinary research.
  ✓ break language barriers between disciplines
  ✓ Build capacity in neuroscience-related areas of ethics, law and policy

➢ Distributed Technology Development & Dissemination Platforms
  ✓ Distributed national infrastructure to break geographic and institutional barriers
  ✓ Develop and disseminate tools, technologies and methods
  ✓ Collaborative hubs connecting technology developers, testers and users

➢ International Neuroscience Open Data Platform
  ✓ New approaches to data analysis and sharing, and workforce
  ✓ Bring dynamic interactions between theoretical and experimental scientists
Major investments in Brain and Artificial Intelligence...

- Child & Brain Development
- Brain, Mind & Consciousness
- Learning in Machines & Brains
- Healthy Brains for Healthy Lives (McGill)
- Data Serving Canadians (IVADO) (Univ. Montréal)
- BrainsCAN: Brain Health for Life (Western)
- Vision: Science to Applications (VISTA) (York)
- Sentinel North (Laval)

Networks of Centres of Excellence (>100M$)
- AGE-WELL
- KIDS BRAIN

Canada Brain Research Fund (220M$)
- Canadian Open Neuroscience Platform
- Canadian Neurophotonics Platform

275M$ over 5 years
- Upcoming: Transformation stream (international teams → open to funding foreign members)
Network Catalyst Grant from CIHR: 1.5M$/5 years

To support a secretariat, our presence on the IBI council and build the coalition

**CBRS Structure:**

- CBRS Secretariat
- Early Career Investigator Cluster (ECIC)
- Steering Committee (Members drawn from Conference of Neuroscience Institutes, Program Leaders and the ECIC)
- Funders Collective
- Conference of Neuroscience Institutes and Program Leaders
- Stakeholders Collective

Raising Awareness, Raising Issues, Raising Engagement
Network Catalyst Grant from CIHR: 1.5M$/5 years

Short term agenda:

- Engaging Early Career Researchers; *they will shape the future of Brain Science in Canada*
- Engaging stakeholders; *patients and patient organizations, communities*
- Continue shaping the vision and priorities *upcoming CBRS retreat*
- Engaging decision makers and funders *build a broad-base coalition*
Questions for you

➢ What issues for people living with brain conditions, for caregivers, for families that CBRS can help address?

➢ What does brain research mean for NHCC organizations/members?

➢ What kind of engagement do you want to have?
Merci !
Thank you !

canadianbrain.ca