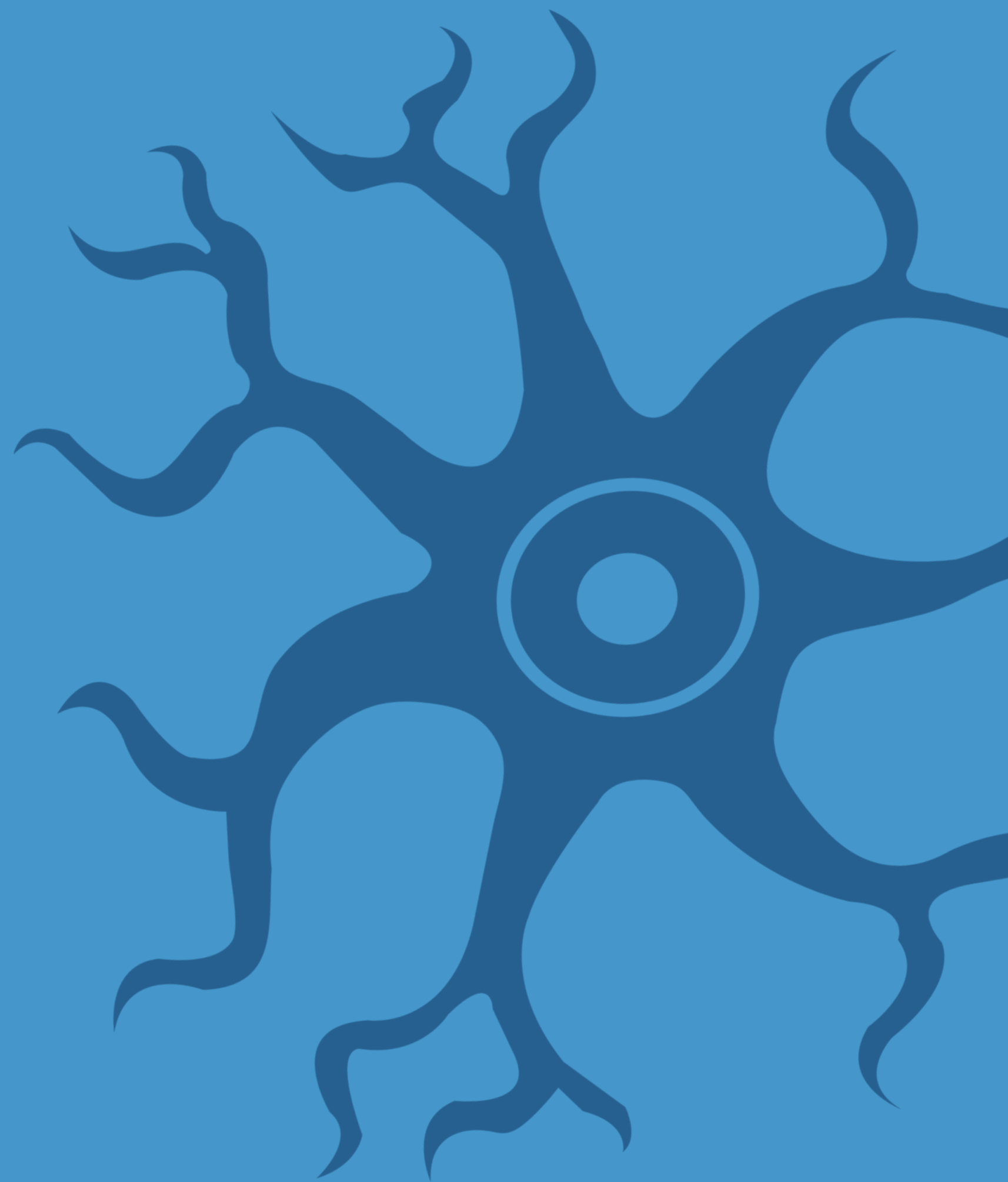Campus Alberta
Neuroscience

Celebrating

10
YEARS
of
CAMPUS ALBERTA NEUROSCIENCE

Reflecting on a decade of enhancing brain health research, education, commercialization, and care.

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To all of our partners in brain health
A message from Campus Alberta Neuroscience leadership

Campus Alberta Neuroscience (CAN) would not be the success it is without the support and partnership of every one of our collaborators over this past decade. CAN approaches its goals through the development of partnerships with academia, industry, government, and the community. Each of these voices contributes something unique and vital to the neuroscience community, which CAN acknowledges and amplifies by bridging gaps between these different areas of brain health. Through this approach, we are able to utilize the knowledge developed in our university labs in clinical practice, industry, government, and education - ultimately bringing the best strategies for brain health to the public.

The following report celebrates the impressive impact CAN and its network has made so far, whether it is in funding research, supporting entrepreneurship, training the next generation of neuroscientists, or consulting on new government policy.

Campus Alberta Neuroscience has come a long way from its humble beginnings to be what it is today: a catalyst for research and innovation in the Alberta neuroscience community. Over the past decade, I have been fortunate enough to be part of this evolution - both supporting and being supported by the CAN network - and I look forward to the very exciting initiatives on the horizon as CAN continues to grow its network and support the neuroscience community.

DR. ROBERT SUTHERLAND
CHAIR OF ADVISORY COMMITTEE

OUR STORY SO FAR

2022 marks the 10th anniversary of Campus Alberta Neuroscience. Over the years, we've set out to help develop Alberta as a centre of neuroscience excellence and innovation, with a goal of improving quality of life for people affected by brain disorders.

Neuroscientists in Alberta and beyond are working on what is widely considered the final frontier of knowledge: the brain. This mysterious but vital area of research is exceptionally complex, requiring constant collaboration to tackle.

Campus Alberta Neuroscience (CAN) was established in 2012 with support from the Government of Alberta as a response to this need for a collaborative approach to brain research. United by a shared goal of improving brain health, CAN harnesses Alberta's excellence in brain research, encompassing the University of Alberta (Neuroscience and Mental Health Institute), University of Calgary (Hotchkiss Brain Institute), and the University of Lethbridge (Canadian Centre for Behavioural Neuroscience).

Campus Alberta Neuroscience

UNIVERSITY OF ALBERTA

UNIVERSITY OF CALGARY

University of Lethbridge

CAN quickly grew into Alberta's umbrella organization for neuroscience. Our mandate has expanded to include new areas of focus and a diverse network of over 1000 researchers, trainees, clinicians, and partners. CAN utilizes the network's strengths in various areas of brain health by engaging with clinicians, partnering with industry, getting involved in government, and collaborating with community groups to ensure the perspectives of those most impacted by brain health research are heard.

Together we have leveraged over $36 million in research funding and over $45 million in follow on investment, supported more than 30 neuroscience innovations, provided hundreds of hours of education, and expanded the CAN network across provincial and national boundaries and through multiple disciplines in brain health. With collaboration as its mantra, CAN facilitates the creation and unleashing of innovative knowledge, generated through research, in ways that drive better brain health, patient care, and economic impact.

Flip through to read more ➡

OUR IMPACT

250+

COLLABORATIVE PARTNERS IN ACADEMIA, GOVERNMENT, INDUSTRY, HEALTHCARE, AND COMMUNITY GROUPS

>1000

ACADEMIC NETWORK MEMBERS

3

PROVINCIAL RESEARCH STRATEGIES CONSULTED ON

$36M+

RESEARCH FUNDING FOR ALBERTA NEUROSCIENTISTS

>6000

HIGH-QUALITY PERSONNEL TRAINED THROUGH SEMINARS, WORKSHOPS, AND COURSES IN NEUROSCIENCE, MENTAL HEALTH, AND ENTREPRENEURSHIP

500+

HOURS OF EDUCATION AL KNOWLEDGE TRANSLATION AND ENGAGEMENT WITH ALBERTANS

32

NEUROSCIENCE INNOVATIONS FUNDED SINCE 2019

15

NEW COMPANIES SUPPORTED

>$45M

FOLLOW-ON INVESTMENT FOR SUPPORTED COMPANIES

200+

NEW JOBS CREATED

WHAT WE DO

CAN's heart and soul of the organization has always been collaboration. It guides the activities and partnerships we pursue in the areas of research, education, innovation, and translation.

Collaborative Research

Better brain health cannot happen without research into how the brain works and how we can manage brain health issues. To support Alberta's neuroscience researchers, CAN secures and leverages funding into research and facilitates cross-institute, multidisciplinary collaboration.

Transdisciplinary Education

Education ensures our neuroscientists, physicians, and other experts are some of the most highly-qualified people for their specialization. CAN takes a broad approach to advancing education beyond a single institute, including clinical and research training, enabling knowledge sharing through seminars and conferences, as well as continuing professional development.

Technology & Innovation

Brain science and innovation offer tremendous opportunities to enhance both Canadians health and Alberta's economy. CAN works with regional, provincial, and national partners to offer business support and consultations to catalyze entrepreneurship and commercialization of novel neuroscience technologies and products.

Knowledge Translation

Discovering something new is always significant, especially when it has an effect on the people who need it. We bring research from the lab into the community by offering public education and awareness opportunities and participating in public policy-making.

COLLABORATIVE RESEARCH

The Universities of Alberta, Calgary, and Lethbridge have world-class neuroscience researchers, and we aim to enable them to have the best possible impact on the community.

Brain health research is an area of strength and competitive advantage for Alberta, given its outstanding infrastructure and research expertise across the Universities of Alberta, Calgary, and Lethbridge. Individually, many of Alberta's neuroscientists are recognized as world leaders in their field. However, to achieve greater impact, including in healthcare delivery and in the community, CAN uses a "team science" approach that promotes improved brain research, commercialization, and care by connecting researchers with partners such as healthcare professionals, industry, and patients and their advocates, to ensure relevance and connection across multiple sectors.

This approach has been implemented in seven theme areas (healthy brain aging and dementia; nervous system injury; neuroimaging; depression; multiple sclerosis; computational neuroscience; and pain, cannabis, and opioids) based on provincial needs, complementary research and innovation capacities, and potential for societal and economic impact.

Collaboration is key to the success of Alberta's neuroscience researchers in solving complex brain disorders. CAN connects experts to accelerate research discovery and innovation. Research also requires resources, with CAN playing a major role in leveraging funding. Through our partnerships, we have provided millions in funding researchers:

- Dementia is a chronic neurodegenerative disease that destroys brain cells, resulting in memory deterioration over time. To tackle the need for more research and innovation in this field, we partnered with the Alzheimer Society of Alberta and Northwest Territories, who are contributing up to $5 million over five years through the *Hope for Tomorrow* Research Competition.

- Multiple Sclerosis (MS) is a disease that affects the central nervous system, making it difficult for the brain to send signals to the rest of the body. To advance our understanding of MS, CAN has facilitated multi-stakeholder collaborations, such as the Alberta MS Collaboration and the Canadian Prospective Cohort Study to Understand Progression in Multiple Sclerosis (CanProCo). The CanProCo is a partnership with the MS Society of Canada, Government of Alberta, Roche, Biogen, and Brain Canada, with a total investment of over $14 million to help better understand the disease and how it affects Canadians.

- Spinal Cord Injuries () are complex and varied, often with lifelong impacts on people's physical and mental health, social well-being, employment, and family. CAN is working with researchers, health care professionals, community groups, and people with lived experience to address the complex issues of SCI, including supporting innovative, translational research. With our partners we co-developed the Alberta Spinal Cord Injury Strategy, which acts as a roadmap to tackle the current challenges, gaps, and issues faced by the SCI community.

$36M+
research funding for Alberta neuroscientists

>1000
academic network members

7
research focus areas

TRANSDISCIPLINARY EDUCATION

Preparing for a successful future by training tomorrow's neuroscientists to be the best.

>6000

high-quality personnel trained through seminars, workshops, and courses in neuroscience, mental health, and entrepreneurship

Our educational and talent development programs offer state-of-the-art training, learning, and networking opportunities that extend beyond any single institute or discipline. This develops broader and more diverse perspectives on health challenges, resulting in collaborative research, increased access to resources, reduced barriers to high-quality education and mentorship, and innovative solutions.

CAN's workshops focus on specific topics and bring together small groups of experienced personnel to participate in short but intense sessions, either to build new skills, establish a new research group, or work on developing a solution to an existing problem in neuroscience.

Conferences and symposia are large events that engage with researchers at the provincial, national, and international level, as well as a more diverse group of stakeholders that includes government, professionals, industry, and the public. The events showcase neuroscience research and offer collaboration and potential funding opportunities with other researchers and stakeholders. Community groups and people with lived experience gain the chance to learn about the latest neuroscience research, meet with researchers, and have their voices heard.

Since 2016, CAN has run its International Healthy Brain Aging and Dementia (HBAD) Symposium. This conference brings together experts from across Alberta and around the world to share knowledge and contribute to the ongoing discussions on the research and translational tools required to improve the prevention, detection, intervention, and management of dementia and to promote healthier brain and cognitive aging. In 2021, a total of 176 national and international attendees participated in the event, with 78% having not attended a previous HBAD event.

In addition, CAN hosts and supports a variety of other training and development activities related to entrepreneurship, professional skill-building, highlighting research, and making connections.

The Introductory Workshop on Computational Methods in Neuroscience

Starting in 2014, CAN has run this 10-day intensive learning event that features lectures, tutorials, and seminars from leading experts in this emerging intersection of computer science and neuroscience. The success of this workshop (192 participants to date) has influenced the University of Calgary to offer a new Computational Neuroscience program, ensuring that Alberta's academic network continues to develop highly competitive trainees and professionals in such innovative areas of neuroscience.

TECHNOLOGY & INNOVATION

Using research findings to develop a commercial product is another avenue to helping the community.

CAN aims to foster a culture of innovation and entrepreneurial spirit amongst the neuroscience communities, create a supportive environment for commercialization opportunities for better health outcomes, and facilitate the development of novel health solutions that support economic growth and improve health of Albertans and all Canadians.

CAN launched the Entrepreneurship Seed Grant program in 2019, which provides small amounts of funding to neuro-innovators to get their ideas off the ground. This seed funding has allowed our 32 grantees to gain enough momentum to gather follow-on funding, start companies, hire more talent, and bring their innovations that much closer to market. CAN also provides consultations to help navigate the commercialization ecosystem in addition to hosting and supporting a variety of entrepreneurial training, such as workshops, seminars, and conferences.

32
neuroscience innovations funded since 2019

15
new companies supported

200+
new jobs created

>$45M
follow-on investment for supported companies

Breast Buds

The Breast Buds platform, supported by a CAN entrepreneurship grant, was brought to life after its creator found her own breast cancer experience lacking in available information and peer support, greatly affecting her mental health. Realizing she was not the only one, she developed a platform that connects people impacted by breast cancer to the resources, supports, and peer networks they need to help reduce the emotional toll, stress, and social isolation that often comes with diagnosis.

AphioTx

The opioid crisis is the rapid increase in overuse, misuse, and overdose deaths since the 1990s. CAN seed grantee, AphioTx, used funding to lead their research exploration into developing safe and effective treatments for people living with opioid disorders and dependence. The AphioTx team is passionate about driving the development of potentially life-changing treatments for patients and working to tackle the fight against the opioid crisis.

Think2Switch

CAN provided funding for Think2Switch: a brain-computer interface device that uses brain signals to allow children with severe physical disabilities to use toys or move wheelchairs. It is the first winner of the ST Innovations Challenge and is being developed as a partnership between departments at the U of A and U of C, plus an industry partner in Ontario.

KNOWLEDGE TRANSLATION

Getting research from the lab to the community is the only way to ensure new knowledge actually helps those who need it the most.

As research advances our knowledge about the brain, it is crucial that these advances are realized as public benefits and that new information is shared with patients, caregivers, families, and communities. Knowledge translation bridges the gap between evidence and practice, allowing for the improvement of brain health and care by moving discoveries into real-world use.

3

provincial research strategically guided

500+

hours of educational knowledge translation and engagement with Albertans

CAN's outreach activities help forge new partnerships and strengthen existing partnerships to ensure public and patient perspectives remain connected and relevant to brain research and innovation. We engage patients, caregivers, families, and community members through public events where innovations in neuroscience are shared, through the involvement of people with lived experience in the research process and strategy development, and through other ways of elevating the voices of those affected by brain health disorders.

Our work with the Government of Alberta has seen progress for translating research into policy and practice. CAN is a partner in strategy development on three major brain health areas and was integral in the formation of the Neurosciences, Rehabilitation & Vision Strategic Clinical Network in Alberta, as well as the Alberta Neuro Network.

Alberta Depression Research and Intervention Strategy, 2016

CAN and the Alberta arm of the Canadian Depression Research and Intervention Network partnered in building this strategy to improve depression outcomes through the formation of a pan-Alberta Mental Healthy initiative focusing on depression research and intervention. The Strategy mission is to increase the contribution of research to improve outcomes through partnered research and intervention initiatives with mental health stakeholders that advance the current knowledge, treatment, and education of depression in Alberta.

Alberta Dementia Strategy and Action Plan, 2017

This Strategy and Action Plan aims to create a world where Albertans are committed to optimizing brain health and valuing and supporting people impacted by dementia, from its onset through to end-of-life. Research, technology, and knowledge transfer is an enabler of this strategy, positioning Alberta as a leader in dementia research, development of supportive technologies, and translating research into practice.

The Spinal Cord Injury Strategy for Alberta, 2021

The vision of this Strategy is to improve the lives of people living with spinal cord injuries. It brings together clinicians, researchers, government, policymakers, and community in partnership with Albertans living with spinal cord injuries, toward a shared mission: to provide an inclusive, person-centered strategy that supports evidence-based practices, treatments, and to integrate knowledge and expertise for greater community, healthcare, and research capacity province-wide.

Alberta Neuro Network (ANN)

ANN, is a provincial collective of member organizations and stakeholders developed to represent Albertans living with and those affected by neurological conditions so they can enjoy a full quality of life.

Neurosciences, Rehabilitation & Vision (NRV) Strategic Clinical Network

The NRV SCN engages patients, families, and stakeholders from healthcare, research, policy, and community organizations. Together, they advance evidence-informed improvements and health innovation that improves how Albertans see, think and live.

OUR PARTNERS IN BRAIN HEALTH

Universities

- UNIVERSITY OF ALBERTA
- University of Lethbridge
- UNIVERSITY OF CALGARY
- Hotchkiss Brain Institute
- Neuroscience and Mental Health Institute, University of Alberta — Brain Health and Injury Research
- CCOBN
- THE MATHISON CENTRE for Mental Health Research & Education

Industry

- bio alberta — Association for Life Sciences Industry
- Biogen
- SANOFI
- Roche

Community Partners, NFPOs, & Foundations

- Alberta Neuro Network
- THE ALBERTA PARAPLEGIC FOUNDATION
- Alzheimer Society — ALBERTA AND NORTHWEST TERRITORIES
- arbi
- Fondation Brain Canada Foundation
- Brain Care Centre — Defy Limitations!
- Branch Out Neurological Foundation
- CANADIAN BRAIN RESEARCH STRATEGY
- GLENROSE REHABILITATION HOSPITAL FOUNDATION
- MS Multiple Sclerosis Society of Canada
- ONTARIO BRAIN INSTITUTE
- University Hospital Foundation
- PRAXIS Spinal Cord Institute
- Rick Hansen Foundation
- Spinal Cord Injury Alberta

Government and Healthcare Agencies

- Alberta GOVERNMENT
- Alberta Health Services
- Alberta Health Services — Strategic Clinical Networks™
- ALBERTA INNOVATES
- Alberta SPOR SUPPORT Unit
- CIHR IRSC — Canadian Institutes of Health Research / Instituts de recherche en santé du Canada
- Western Economic Diversification Canada — Canada

Research & Innovation Supports

- adMare BIOINNOVATIONS
- aWe ALBERTA WOMEN ENTREPRENEURS
- AltaML Applied AI Lab
- amii
- CREATIVE DESTRUCTION LAB
- Discovery lab
- GRRIT Glenrose Rehabilitation Research Innovation & Technology
- Health Cities
- IMPACT
- INNOVATE CALGARY
- INNOVATE EDMONTON
- PLATFORM calgary
- RESTORE network
- SMART NETWORK — Sensory Motor Adaptive Rehabilitation Technology
- ST Innovations
- tecconnect ENTREPRENEUR PROGRAM
- THE 51
- THIN AIR LABS
- women entrepreneurs in STEM
- W21C
- UNIVERSITY OF ALBERTA Health Innovation Hub
- UNIVERSITY OF CALGARY Life Sciences Innovation Hub
- UNIVERSITY OF CALGARY Hunter Hub for Entrepreneurial Thinking

WHERE WE'RE GOING

CAN plays a leading role in the neuroscience ecosystem of Alberta, facilitating research and supporting innovation through strategic partnerships. Our strong position enables us to bridge the knowledge gaps and serve as a catalyst to facilitate more partnerships, continuing to establish a collective vision and impact.

CAN's next phase will continue to enhance the foundation of high-quality personnel and build a neuro-innovation cluster in Alberta that drives health innovations and acts as a magnet for industry and investment, supporting economic growth and diversification. CAN will continue to provide resources, support, programming, and events that accelerate neuroscience discovery

and strengthens the pipeline of innovation, increasing Alberta's competitiveness and attractiveness for talent and investment in life sciences.

Further, CAN is deeply interconnected with internationally recognized research universities, which work together to develop a highly-skilled and competitive workforce, make disruptive discoveries, and boast world-class facilities, cutting-edge technologies, and transdisciplinary teams that drive ground-breaking brain and mental health research and innovations.

We thank you for your ongoing support of Campus Alberta Neuroscience.

A special thank you to our former Chairs, Dr. Jack Jhamandas, Dr. Samuel Weiss, and Dr. David Park, our founding Partner, Dr. Grant McIntyre, and previous Executive Director, Jennifer Dotchin

Campus Alberta Neuroscience

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