

Collaboration for Connectivity

2021

CCNA Partners Forum and Science Days



PRELIMINARY PROGRAM

OUR 2021 PROGRAM AT A GLANCE

Day 1

Tuesday, October 12, 2021

09:30 - 11:00 (EDT)	Session 1. CIHR meeting with CCNA partners (by invitation only)
11:00 - 12:00	Session 2. Opening session (State of the Union including land acknowledgement)
12:30 - 14:30	Session 3. Interactive session on Mechanisms
15:00 - 16:30	Session 4. Panel: Perspectives on bringing research bench to bedside
17:00 - 18:00	Session 5. Keynote: Noninvasive sensory stimulation to induce gamma entrainment and neuroprotection
18:00 - 20:30	Session 6. Let's share a beer and connect!

Day 2

Wednesday, October 13, 2021

11:00 - 12:00	Session 7. Keynote: Does innate immunity contribute to neurodegenerative disease?
12:30 - 14:30	Session 8. Interactive session on Prevention
15:00 - 18:00	Session 9. The CCNA Trainee Synapse Challenge
18:30 - 20:30	Session 10. Poster Session

Day 3

Thursday, October 14, 2021

CANCELLED	Session 11. CIHR IA update on Brain Health and Cognitive Impairment in Aging Research Initiative
12:00 - 14:00	Session 12. Interactive session on Management
14:30 - 15:30	Session 13. Panel: Highlighting the importance of engagement in long-term residential care
16:00 - 17:30	Session 14. Panel: Equity, diversity, and inclusion of lived experiences in dementia research
17:30 - 19:00	Session 15. Partners invitation to a Happy Hour!

Day 4

Friday, October 15, 2021

11:00 - 12:00	Session 16. Panel: Quality-of-life solutions developed with and for people living with dementia
12:30 - 14:00	Session 17. Panel: People with lived experience and CCNA researchers collaborating to enhance research
15:00 - 18:00	Session 18. Special closing session

NOTE: All scheduled times are in Eastern Daylight Time (EDT).



Melissa ANDREW , moderator, speaker, session 12
Geneviève ARSENAULT-LAPIERRE , speaker, session 12
AmanPreet BADHWAR , speaker, session 3
Philip BARBER , speaker, session 8
Sylvie BELLEVILLE , speaker, session 8
Jennifer BETHELL , panelist, sessions 13 and 17
Neil CASHMAN , panelist, session 4; speaker, session 12
Howard CHERTKOW , MC, sessions 2 & 18
Emma CONWAY , panelist, session 13
Sultan DARVESH , panelist, session 4
Gillian EINSTEIN , moderator, session 3
Margaret FAHNESTOCK , moderator, session 7; speaker, session 3
Howard FELDMAN , moderator, session 8
Catherine FERLAND , moderator, session 4
Jason FLATT , panelist, session 14
Ted FON , moderator, session 5
Claire GODARD SEBILLOTTE , speaker, session 12
Judith GODIN , speaker, session 8
Shabnam HAGHZARE , speaker, session 12
Michael HENEKA , keynote speaker, session 7
Wayne HYKAWAY , panelist, session 13
Ngozi IRONYAH , panelist, session 14
Lewis JOO , speaker, session 3
Noah KOBLINSKY , speaker, session 8
Tony LEAMON , panelist, session 17

Colleen MAXWELL , panelist, session 13
Carrie McAINEY , panelist, session 17
Kathy McGILTON , moderator, session 13
JoAnne McLAURIN , panelist, session 4
Laura MIDDLETON , panelist, session 16
Karen MYERS BARNETT , panelist, session 14
Haakon NYGAARD , speaker, session 8
Natalie PHILLIPS , speaker, session 3
Frederico PIERUCCINI-FARIA , speaker, session 8
Shusmita RASHID , moderator, session 16
Pamela ROACH , panelist, session 14
Kenneth ROCKWOOD , speaker, session 8
Ekaterina ROGAEVA , speaker, session 3
Jane RYLETT , speaker, sessions 1 & 11
Allison SEKULER , panelist, session 4
Nabina SHARMA , panelist, session 14
Eric E. SMITH , speaker, session 12
Ellen SNOWBALL , moderator, session 17
Elaine STASIULIS , panelist, session 16
Christine THELKER , panelist, session 17
Shanna TRENAMAN , speaker, session 12
LH TSAI , keynote speaker, session 5
Shankar TUMATI , speaker, session 3
Isabelle VEDEL , speaker, session 12
Walter WITTICH , moderator, session 14; speaker, sessions 8 & 12

SESSION DETAILS

Some sessions are pre-recorded, others are live only. The recorded sessions will be available for on-demand viewing prior to their scheduled times. They will also be presented during their scheduled times and followed by live Q&A sessions.

Day 1

Tuesday, October 12, 2021

SESSION 1 CIHR MEETING WITH CCNA PARTNERS (BY INVITATION ONLY)

SESSION 2 OPENING SESSION

State of the Union

SESSION 3 INTERACTIVE SESSION ON MECHANISMS

This session is an opportunity to learn about work taking place across different teams. It will allow to interact, discuss, and discover new potential collaborations and foster connectivity. This session includes six short presentations on Mechanisms that lead to dementia and add to dementia risk by CCNA Members and Trainees. The presentations will be followed by a discussion with the audience.

1. Relationship between cerebrovascular pathology and resting-state functional connectivity in Alzheimer's disease and vascular cognitive impairment and dementia: A systematic review
2. Metabolic dysregulation in early Alzheimer's disease
3. Why is hearing loss a risk factor for dementia? An overview of possible mechanisms
4. Influence of sex on pathology and behaviour in the 3xTg-AD mouse model of Alzheimer's disease.
5. The intersection between genetics, epigenetics & aging in neurodegenerative diseases
6. Sex differences in the neural correlates of neuropsychiatric symptoms in neurodegenerative disorders

SESSION 4 PANEL – Perspectives on bringing research from bed to bedside

In this panel, we will hear three stories from CCNA researchers with experience bringing their work from the bench to the bedside – from the research lab to clinical use. The stories will cover experiences of success as well as failure, challenges, lessons learned and important milestones along the way. The discussion will draw observations about partnership vs. ownership in commercial initiatives, funding paths, and the involvement of people with lived experience of dementia and other stakeholders in product and business development.

SESSION 5 KEYNOTE PRESENTATION



Noninvasive sensory stimulation to induce gamma entrainment and neuroprotection

With Li-Huei Tsai, Ph.D. Picower Institute for Learning and Memory, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology

Rhythmic neural activity in the gamma range (30-80 Hz) is modulated during various aspects of cognitive function and has been shown to be disrupted in several neurological conditions, including Alzheimer's disease (AD). It is well established that local network oscillations at specific frequencies can be induced in cortical areas using sensory stimuli. We have applied this approach, which we term Gamma ENtrainment Using Sensory stimuli (GENUS), using patterned light and sound stimulation at

40 Hz in AD model mice. Remarkably, GENUS augmented gamma oscillation power in multiple brain regions. Moreover, chronic application led to marked reduction of amyloid and tau pathology, attenuated neurodegeneration, and improved cognitive function in multiple AD mouse models. These beneficial effects elicited by GENUS are likely to be mediated by microglia activation, and increased capillary mediated clearance. In humans, combined light and sound stimulation increases gamma oscillation power in extended brain regions including deep brain areas such as the amygdala, hippocampus and posterior insula. We found that GENUS is safe even after prolonged exposure. Preliminary data suggests that GENUS stabilized hippocampal volume in AD subjects and maintained functional connectivity in the brain. These results support further evaluation of GENUS in larger and longer clinical trials to evaluate its potential as a disease modifying therapeutic for Alzheimer's disease.

SESSION 6 BEER & GREET (live gathering)

Day 2

Wednesday, October 13, 2021

SESSION 7 KEYNOTE PRESENTATION



Does innate immunity contribute to neurodegenerative disease?

With Prof. Michael Heneka, MD, Director Department for Neurodegenerative Diseases - Neurology at the University Hospital Bonn DZNE Cooperation Unit Leader: Neuroinflammation

The accumulation of neurotoxic amyloid beta peptides along with neurofibrillary tangle formation are key pathological hallmarks of Alzheimer's disease. The brain has been considered as an immune-privileged organ, however, increasing evidence from translational, genetic, and pathological studies suggests that activation of distinct innate immune pathways are a third important disease hallmark

which, once initiated, actively contributes to disease progression and chronicity.

Microglia play a pivotal role in this immune response and are activated by binding of aggregated proteins or aberrant nucleic acids to pattern recognition receptors. This immune activation leads to the release of inflammatory mediators, but also distracts microglia cells from their physiological functions and tasks, including debris clearance and trophic factor support. NLRP3 inflammasome activation and release of ASC specks contribute to spreading of pathology and impair microglia clearance mechanisms, and together contribute to neuronal spine loss, neuronal degeneration, and ultimately to spatial memory deficits. In keeping with this immune hypothesis of neurodegeneration, inhibition of this immune pathway protects from neurodegeneration in cellular and murine models of Alzheimer's disease. Modulation of the microglia driven innate immune response at key signaling steps might therefore be protective and alter disease progression. However, the microglia are not a stable population, but have continuous turn over, most likely resulting in more than one generation of microglia being involved in disease progression. Moreover their turnover is increased in response to neurodegeneration. Along with the regional diversity of microglia, these phenomena need to be understood in more detail prior to targeting innate immune mechanisms for therapeutic purposes.

SESSION 8 INTERACTIVE SESSION ON PREVENTION

This session is an opportunity to learn about work taking place across different teams. It will allow to interact, discuss, and discover new potential collaborations and foster connectivity. This session includes five short presentations on research related to dementia Prevention by CCNA Members and Trainees. The presentations will be followed by a discussion with the audience.

1. An update on the Canadian Therapeutics Platform Trial for Testing Interventions to Prevent Dementia (CAN-THUMBS UP)
2. Preventing age-related cognitive decline: Brain Health Pro, a remote multidomain program with and for older adults and their communities
3. The problems of old age come as a package: relevance for dementia prevention
4. LEAD feasibility trial and the Brain Health Food Guide
5. PREVENT Study, prospective longitudinal cohort study in TIA patients and control subjects
6. Motor markers and gait variability for dementia prediction

SESSION 9 THE CCNA TRAINEE SYNAPSE CHALLENGE

The Training and Capacity Building (T&CB) Program has relaunched the Interdisciplinary Trainee Research Innovation Challenge (ITRIC) as *The CCNA Trainee Synapse Challenge*. This year, there are six \$10,000 prizes up for grabs, and following up on the success of the Women, Sex, Gender and Dementia Program Bonus prize last year, there are four Cross-cutting Program prizes available this year: Women, Sex, Gender and Dementia, Knowledge Translation and Exchange, Ethical, Legal and Social Implications, and Engagement of People with Lived Experience of Dementia.

CCNA Trainees have been hard at work developing project proposals. Don't miss this opportunity to support trainees as they present to the Synapse Challenge Review Panel in this Training and Capacity Building Program conference session. There will be an opportunity for the CCNA community to vote for their favourite project and a bonus for the best proposal as selected by the CCNA membership.

SESSION 10 LIVE POSTER SESSION

Day 3

Thursday, October 14, 2021

CANCELLED SESSION 11 CIHR IA UPDATE ON BRAIN HEALTH AND COGNITIVE IMPAIRMENT IN AGING RESEARCH INITIATIVE

The CIHR Institute of Aging (CIHR-IA) is committed to advancing understanding about the causes of age-related cognitive impairment and dementia and improving treatment and care for people with lived experience. The scope of the Brain Health and Cognitive Impairment in Aging Research initiative will encompass research across the continuum from the healthy aging brain, including resilience, vulnerabilities and modifiable risk factors, through cognitive impairment and risk reduction to care for those impacted by dementia. This Initiative is aligned with and delivers upon the National Dementia Strategy launched in 2019 and is contributing to delivery of the CIHR Strategic Plan 2021-2031: A Vision for a Healthier Future.

SESSION 12 INTERACTIVE SESSION ON MANAGEMENT

This session is an opportunity to learn about work taking place across different teams. It will allow to interact, discuss, and discover new potential collaborations and foster connectivity. This session includes six short presentations on research related to Management of dementia and health care by CCNA Members and Trainees. The presentations will be followed by a discussion with the audience.

1. Clinical translation of protein misfolding-specific antibodies
2. Care-partners' views on automated vehicle use as an intervention to prolong the safe driving of people with dementia
3. TRIC VCI trial phase 2a of remote ischemic conditioning for treatment of VCI

4. Investigating inequities in health service utilization among persons with dementia, the role of sex, rurality and socioeconomic status
5. The importance of sensory health for cognitive aging
6. One thing at a time adds up to trouble: the importance of frailty and deprescribing

SESSION 13 PANEL - Highlighting the importance of engagement in long term residential care

In this session, researchers, a trainee and a member of the EPLED Advisory Group will discuss the importance of engagement in the lives of persons living in long-term residential care, the impact of restrictions that evolved during COVID-19 on residents as well as their care partners and families, and the strategies they developed to help manage these restrictions.

SESSION 14 PANEL - Equity, diversity and inclusion of lived experiences in dementia research: The path behind and the road ahead

Living with dementia and caring for a loved one with dementia is challenging in many ways. For people who face discrimination because of their race, ethnicity, sexual orientation, gender identity and other social constructs this experience has unique difficulties. In this panel, people with personal experience of this kind, as well as with dementia research and dementia advocacy expertise, will share their perspectives and knowledge – both personal and professional. As funding agencies increase the demand for meaningful involvement of people with lived experience in research, it should be ensured that the experiences that inform research cover a broad spectrum of voices.

SESSION 15 PARTNERS INVITATION TO A HAPPY HOUR!

Day 4

Friday, October 15, 2021

SESSION 16 PANEL - Quality-of-life solutions developed with and for people living with dementia

Collaboration with people living with dementia helps researchers to address the challenges and needs of people living with dementia in ways that are meaningful and impactful. This session highlights two projects that used co-design with an aim to improve the experience of people living with dementia and their families. The first presentation will describe working with people living with dementia and family carers to develop an online educational resource called the Driving and Dementia Roadmap (DDR). The second presentation will describe the co-design process used to develop a multi-component program, The Dementia Lifestyle Intervention for Getting Healthy Together (DELIGHT) that supports the health and well-being of people living with dementia and their family care partners.

SESSION 17 PANEL - People with Lived Experience and CCNA researchers collaborating to enhance research

In this session, you will hear about the CCNA Engagement of People with Lived Experience of Dementia (EPLED) Cross-cutting Program and, in particular, the EPLED Advisory Group composed of people from across Canada with lived experience of dementia. Advisory Group members are engaged in multiple CCNA activities and research projects. Jennifer Bethell, Carrie McAiney and two Advisory Group members, Christine Thelker and Tony Leamon, will discuss one such project: "Forward with Dementia", which aims to develop and evaluate an intervention to improve the dementia diagnosis experience and the supports provided following a diagnosis.

SESSION 18 SPECIAL CLOSING SESSION