

# FIMM Postdoctoral Professional Career Development Program

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FIMM / Nordic EMBL Partnership

Special Webinar

Nov 26 2020, 6 PM Helsinki time (5 PM CET)

**Prof. Jaideep Bains, PhD**  
Hotchkiss Brain Institute  
University of Calgary

***Is my stress affecting you?***  
***Unravelling the neurobiology***  
***of an emotional contagion***

How can stress be transmitted from person to person, and how are synapses involved?  
Join this exciting webinar to learn!



<https://helsinki.zoom.us/j/63744168940>

Discussions with Prof. Bains continue on Zoom after the webinar!



## Prof. Jaideep Bains, PhD

Hotchkiss Brain Institute

University of Calgary

<https://hbi.ucalgary.ca/profiles/dr-jaideep-bains>

<https://twitter.com/stressynomics>

*“Responding to one stress is critical, but survival probability can be further enhanced if the organism can extract information about the stress and shift its subsequent responses. We have made a number of contributions that reveal the consequences of stress on neuronal function and plasticity in the brain.”*

Prof Brains studies how neural circuits decode stress to modify internal states and generate specific coping behaviors to cope with stress. His lab has made seminal discoveries about the cellular and synaptic mechanisms that release the breaks of cells in the hypothalamus to launch an endocrine response to stress. Groundbreaking discoveries by Prof Bains showed how neural circuits, or specific cell populations, store information related to the modality, intensity and temporal features of stress. As an example, in back-to-back papers in *Nature Neuroscience*, Prof Bains’ team showed how acute stress creates temporal windows of neuronal plasticity in the brain, termed ‘kairoplasticity’.

### Key publications

*Altered chloride homeostasis removes synaptic inhibitory constraint of the stress axis*, S.A. Hewitt, J.I.

Wamsteeker, E.U. Kurz and J.S. Bains, **Nature Neuroscience**, Apr;12(4):438-443, 2009.

*Stress induced priming of glutamate synapses unmasks associative short-term plasticity*, J.B. Kuzmiski, V.M.

Marty, D.V. Baimoukhametova and J.S. Bains, **Nature Neuroscience**, Oct;13(10):1257-1264, 2010.

*Glucocorticoid feedback uncovers retrograde opioid signaling at hypothalamic synapses*, J.I. Wamsteeker

Cusulin, T. Füzesi, W. Inoue and J.S. Bains, **Nature Neuroscience**, May;16(5):596-604, 2013.

*Noradrenaline is a stress-associated metaplastic signal at GABA synapses*, W. Inoue, D. V.

Baimoukhametova, T. Füzesi, J.I. Wamsteeker Cusulin, K. Koblinger, P. J. Whelan, Q. J. Pittman and

J. S. Bains, **Nature Neuroscience**, May;16(5):605-12, 2013.

*Hypothalamic CRH neurons orchestrate complex behaviors after stress*. T. Fuzesi, N. Daviu, J.I. Cusulin, R.

Bonin and J.S. Bains, **Nature Communications**, Jun 16;7:11937, 2016.

*Social transmission and buffering of synaptic changes after stress*. T-L Sterley, D.V. Baimoukhametova, T.

Füzesi, A. A. Zurek, N. Daviu, N. P. Rasiah, D. Rosenegger, and J. S. Bains, **Nature Neuroscience**, Jan

8, Mar;21(3):393-403, 2018.

*CRHPVN neurons encode stress controllability and regulate defensive behavior selection*, N. Daviu, T. Füzesi,

D. Rosenegger, N. Rasiah, T-L Sterley, G. Peringod and J.S. Bains, **Nature Neuroscience**, Mar 23

(3):398-401, 2020.