

SLEEP SHARE - March 16 2018

1300-1330	Welcome – Cary Brown, organizer. Setting the stage – Russell Foster TedTalk: <i>Why do we sleep?</i>
1330-1340	Susie Wang – University students' sleeping habits
1340-1350	Michelle Gates – The impact of fatigue and sleep deprivation on physician and patient outcomes: A systematic review
1350-1400	Peter Anto Johnson – A process-oriented approach for sleep hygiene and cognitive functioning in university students: constructing effective sleep schedules
1400-1410	Rachel Ward Flanagan – Assessing the correlates between sleep and anaesthesia
1410-1420	Zemina Meghji – Does Hippocampal State Influence Memory?
1420-1440	Break
1440-1450	Brandon Hauer – Slow-wave circuits for memory: Sleep rhythms in cortex and hippocampus linked by the nucleus reuniens thalami
1450-1500	Yuluan Wang – The use of social marketing as a framework for delivering sleep-conducive music for sleep deficiency in post-secondary students
1500-1510	Greg Kawchuk – Sleep and low back pain; new studies and new opportunities
1510-1520	Professor Cressida Heyes – Sleep is the New Sex
1520-1530	Yuluan Wang & Vineet Prasad – Dream Big Sleep Tight: Sleep for Success
1530-1540	Vineet Prasad – Efficacy of bright light therapy in people with Parkinson disease
1540-1550	Claire Scavuzzo – Metabolic triggers of slow wave sleep
1550-1600	Brittany Matenchuk – Babies' Sleep is Associated with Their Gut Bacteria
1600-1610	Cary Brown – Hand self-Shiatsu to promote sleep
1610-1630	Q and A



SPEAKERS

Susie Wang, (shuyu1@ualberta.ca) Department of Biological Science

Title: *University student sleeping habit*

Many university students are sacrificing sleeping time to do other things. Is this worth it? What are the consequences?

Michelle Gates, PhD, (mgates1@ualberta.ca) Alberta Research Centre for Health Evidence (ARCHE), Faculty of Medicine and Dentistry, Department of Pediatrics

Title: *The impact of fatigue and sleep deprivation on physician and patient outcomes: A systematic review*

Based on the negative impacts of fatigue, policies exist worldwide that restrict resident work hours. For physicians in independent practices, relatively little regulation exists, and research about the impacts of fatigue and sleep loss has not been synthesized. We systematically reviewed evidence for two questions: Among physicians in independent practices, (1) what are the impacts of sleep loss and fatigue; (2) what is the effectiveness of interventions that target sleep loss and fatigue?

Peter Anto Johnson, (paj1@ualberta.ca) Faculty of Science, Department of Physiology (Hons)

Title: *A process-oriented approach for sleep hygiene and cognitive functioning in university students: constructing effective sleep schedules*

In the recent decade, symptoms of insomnia have increased in university students who adopt irregular sleep cycles. Numerous studies suggest strong correlations between unhealthy sleeping practices and psychological functioning, particularly in the adolescent and young adult demographics. In addition, irregular sleep patterns have also been attributed to depression, anxiety and stress levels. I intend to present on the physiological detriments of altered circadian rhythms and the social necessity to establish sleep schedules to foster health and wellness.

Rachel Ward-Flanagan, MSc student, (wardflan@ualberta.ca) Faculty of Medicine and Dentistry, Neuroscience

Title: *Assessing the correlates between sleep and anaesthesia*

Sleep is an active neural behaviour, characterized by spontaneous alternation between activated and deactivated EEG states. This alternation has been implicated to have a role in many critical physiological functions. As such, understanding the mechanisms underlying this phenomenon as well as its functional relevance is crucial to understanding the impact of sleep. Our aim is to characterize the overlaps and divergences between natural sleep and anaesthesia to create an anaesthetic model of natural sleep.

Zemina Meghji, MSc student, (zemina@ualberta.ca) Faculty of Medicine and Dentistry; Neuroscience and Mental Health Institute

Title: *Does Hippocampal State Influence Memory?*

I will be discussing how different patterns of neural activity can help or hinder memory recollection in a spatial task. Our results have demonstrated that sleep and its associated activation appears to assist with memory recall.

Brandon Hauer, PhD student, (behauer@ualberta.ca) Faculty of Medicine and Dentistry, Neuroscience and Mental Health Institute

Title: *Slow-wave circuits for memory: Sleep rhythms in cortex and hippocampus linked by the nucleus reuniens thalami*

Cortical sleep slow-waves enhance specific forms of hippocampal-dependent memory, but the actual mechanism remains elusive. We are studying the role of the nucleus reuniens (RE) thalami, which mediate a direct connection between cortex and hippocampus. Consistent with an important role in coordinating these areas, RE cells show slow-wave correlated activity and, when chemically inhibited, the synchronization between cortical and hippocampal sites decreases. The RE appears to be an integral part of the slow-wave memory circuit.

Yuluan Wang, MSc student, (yuluan@ualberta.ca) Faculty of Rehabilitation Medicine

Title: *The use of social marketing as a framework for delivering sleep-conducive music for sleep deficiency in post-secondary students*

Sleep deficiency is a pervasive problem that affects post-secondary students. One strategy over 30% of students who participated in a University of Alberta survey identified using to help them sleep was music. This presentation reports the findings of a project to use social marketing principles to deliver sleep-conducive music on a campus-wide level.

Greg Kawchuk Dc, PhD, (greg.kawchuk@ualberta.ca) Faculty of Rehabilitation Medicine, Department of Physical Therapy

Title: *Sleep and low back pain; new studies and new opportunities*

We have recently initiated projects toward understanding the association between sleep and low back pain. This talk will describe the rationale for these projects, their methodology and outline our results if available.

Professor Cressida Heyes, (cheyes@ualberta.ca) Department of Political Science, Faculty of Arts

Title: *Sleep is the New Sex*

A Pecha Kucha exploring the history of sleep as it connects to sex – in both senses of sexual difference, and sexuality. With engaging images and jokes.

Yuluan Wang and Vineet Prasad, MSc students, (yuluan@ualberta.ca; vp@ualberta.ca) Faculty of Rehabilitation Medicine

Title: *Dream Big Sleep Tight - Sleep for Success (<https://goo.gl/YALbfY>)*

Like good nutrition and exercise, sleep is necessary for a healthy and happy life. For many post-secondary students, sleep is a self-care challenge and a potential obstacle to success. Trying to achieve academic, professional, and social goals all at the same time has contributed to sleep deficiency, which is a pervasive problem. The aim of Dream Big Sleep Tight is to promote a sleep-healthy campus by providing students access to up-to-date knowledge about sleep science. This project is funded by Student Health Services.



Vineet Prasad, MSc student, (vp@ualberta.ca) Faculty of Rehabilitation Medicine

Title: *Efficacy of bright light therapy to reduce daytime fatigue in persons living with Parkinson disease*

The use of blue spectrum light has been well documented to delay or advance circadian rhythm and hence regulate a disturbed sleep cycle. Literature suggests the use of light therapy for sleep problems in many patient populations; however, research specific to

persons with Parkinson's disease is lacking. This talk presents a study underway to test daytime blue spectrum light therapy for persons with Parkinson's disease to reduce excessive daytime sleepiness.

Claire Scavuzzo PhD, (scavuzzo@ualberta.ca) Psychology, Faculty of Science

Title: *Metabolic triggers of slow wave sleep*

Using intracranial EEG recordings in rats under urethane anesthesia, we measured fluctuations in brain lactate while rats were transitioning between hippocampal theta rhythms (akin to REM sleep), and cortical and hippocampal slow oscillations (akin to NREM or slow wave sleep). In addition, we find that metabolic manipulations that increase brain lactate increase the predominance of the slow wave state.

Brittany Matenchuk, (matenchu@ualberta.ca) Faculty of Medicine & Dentistry, Department of Pediatrics

Title: *Babies' Sleep is Associated with Their Gut Bacteria*

Getting less sleep as a child increases the risk for developing asthma or becoming overweight. The relationship between sleep and health may be explained by disturbances to the friendly bacteria, which inhabit our gut. Presenting data from the Canadian Healthy Infant Longitudinal Development (CHILD) study, join me to find out how meeting the National Sleep Foundation's sleep duration recommendations is linked to the good bugs in a baby's gut.

Cary Brown, (cary.brown@ualberta.ca) Faculty of Rehabilitation Medicine, Department of Occupational Therapy

Title: *Hand self-Shiatsu for sleep.*

This presentation will review two studies of hand self-shiatsu to promote sleep. Participants in study 1: patients living with chronic pain, and study 2: Young athletes with sport-related concussion.

Key Resources

Canadian Sleep Society (<https://css-scs.ca/>)

Dream Big, Sleep Tight (<https://goo.gl/YALbfY>)

Russell Foster TedTalk (https://www.ted.com/talks/russell_foster_why_do_we_sleep)

Insomnia in Adults and Adolescents (free eBook): https://css-scs.ca/files/resources/brochures/Insomnia_Adult_Child.pdf

Children's Best Bedroom Environment for Sleep : <http://cbotlabs.wixsite.com/cbbes-workbook>

Acknowledgement: Thank you to the University of Alberta Healthy Campus Unit - Heroes for Health (<https://www.ualberta.ca/current-students/healthy-campus-unit/heroes-challenge>)

