

CENTRE FOR NEUROSCIENCE

Thesis Topics for NEUR 4F90, 4F91 and 4F92

<p>Adkin, Alan (Physical Education and Kinesiology) E-Mail: allan.adkin@brocku.ca</p> <p><i>NEUR 4F90/4F91</i></p> <ul style="list-style-type: none"> • Effects of attention focus on balance strategies in healthy individuals and people with balance deficits • Effects of fear on balance strategies in healthy individuals and people with balance deficits • Influence of verbal persuasion on balance strategies in healthy individuals and people with balance deficits • Influence of a multi-modal exercise intervention on balance and mobility in healthy older adults <p><i>NEUR 4F92</i></p>	<p>Brudzynski, Stefan (Department of Psychology) Email: sbrudzyn@brocku.ca</p> <p><i>NEUR 4F90/4F91</i></p> <ul style="list-style-type: none"> • Neural control of animal vocalization and communication with a special interest in the ultrasonic vocalization in rodents. • Neural control of locomotor activity and mechanisms of movement. <p><i>NEUR 4F92</i></p> <ul style="list-style-type: none"> • Topics to be discussed with individual candidates.
<p>Carlone, Robert (Department of Biological Sciences) E-mail: robert.carlone@brocku.ca</p> <p><i>NEUR 4F90/4F91:</i> Retinoid signaling in spinal cord regeneration</p> <ul style="list-style-type: none"> • Retinoid signaling in spinal cord regeneration <ul style="list-style-type: none"> (a) Identification of downstream effectors(s). (b) Role of micro RNAs in spinal cord regeneration • Role of ependyma in permissive spinal cord regeneration in newts. <p><i>NEUR 4F92</i></p> <ul style="list-style-type: none"> • Any topic of mutual interest in developmental neurobiology. 	<p>Coté, Kimberly (Department of Psychology) E-mail: kcote@brocku.ca</p> <p><i>NEUR 4F90/4F91:</i> Human sleep research</p> <ul style="list-style-type: none"> • Daytime sleepiness, sleep and performance, effects of sleep deprivation on brain functioning. • Brain mapping; topographic recording and analysis of EEG and event-related potentials during sleep or daytime sleepiness • Quantitative EEG analysis (power spectral analysis) of sleep or waking EEG data <p><i>NEUR 4F92</i></p> <ul style="list-style-type: none"> • Any topic in the field of sleep, circadian rhythms, and sleep

<p>Gabriel, David (Department of Physical Education and Kinesiology) E-mail: dgabriel@brocku.ca</p> <p><i>NEUR 4F90/4F91</i></p> <ul style="list-style-type: none"> • Training-related changes in agonist-antagonist coordination. • Training-related changes in motor unit recruitment. • EMG-to-force relationship. <p><i>NEUR 4F92</i></p> <ul style="list-style-type: none"> • Any topic in electromyographic kinesiology. 	<p>Good, Dawn (Department of Psychology) E-mail: dawn.good@brocku.ca</p> <p><i>NEUR 4F90/4F91</i></p> <ul style="list-style-type: none"> • Cognitive impairments in persons with acquired brain injury and other neurological disorders; both (a) adult populations and (b) paediatric populations. • Memory and amnesia: organically-based or functionally-based. • Treatment strategies (both cognitive and physiological) for cognitive impairment <p><i>NEUR 4F92</i></p> <ul style="list-style-type: none"> • Any topic of mutual interest in neuropsychology or cognitive neuroscience
<p>McCormick, Cheryl (Department of Psychology) E-mail: cmccormi@brocku.ca</p> <p><i>NEUR 4F90/91</i></p> <ul style="list-style-type: none"> • Neural mechanisms underlying developmental changes in effects of drugs of abuse in rats • Lasting effect of stress in adolescence on brain development and behaviours in rats. • Social and hormonal factors moderating aggressive behaviour in men. 	<p>Mercier, A. Joffre (Department of Biological Sciences) E-mail: amercier@brocku.ca</p> <p><i>NEUR 4F90/4F91</i></p> <ul style="list-style-type: none"> • Modulation of chemical synaptic transmission in crayfish. <ul style="list-style-type: none"> a. Mechanisms of action of neuropeptides. b. Effects of glutamate receptor antagonists. • Identification of neurotransmitters in neurons innervating crayfish hindgut, and examination of their modes of action. • Behavioural roles of invertebrate neurohormones. <p><i>NEUR 4F92</i></p> <ul style="list-style-type: none"> • Any topic of mutual interest in neurobiology.
<p>Mondoloch, Cathy (Department of Psychology) E-mail: cmondloch@brocku.ca</p> <p><i>NEUR 4F90/4F91</i></p> <ul style="list-style-type: none"> • Development of the ability to recognize faces • Development of sensitivity to facial displays of emotion • How the brain represents faces from different categories • How experience refines adults' expertise to own-race, upright faces <p><i>NEUR 4F92</i></p>	<p>Muir, Cameron (Department of Psychology) E-mail: cmuir@brocku.ca</p> <p><i>NEUR 4F90/4F91</i></p> <ul style="list-style-type: none"> • <p><i>NEUR 4F92</i></p>

Segalowitz, Sid (Department of Psychology)
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NEUR 4F90/4F91

- EEG and ERP responses to information processing and manipulations of attention and memory. Especially interested in visual and auditory event-related potentials as a function of expertise (e.g. musicians versus visual artists; those trained on a stimulus set versus not; reading in first versus second language).

NEUR 4F92

- Topic of mutual interest in neuropsychology, developmental neuroscience or cognitive electrophysiology

Spencer, Gaynor (Department of Biological Sciences)
E-mail: gspencer@brocku.ca (On leave, returns June 3, 2010)

NEUR 4F90/4F91

- The effects of the Vitamin A metabolite, retinoic acid on memory consolidation in the mollusc, following operant conditioning.
- The effects of retinoic acid on neuronal regeneration, either in cultured neurons, or in the intact brain.
- The effects of retinoic acid on electrophysiological properties of identified neurons, either in culture, or in the intact brain.

NEUR 4F92

- Any topic of mutual interest in neurobiology, particularly in the fields of regeneration or learning and memory.

Tattersall, Glenn (Department of Biological Sciences)
E-mail: gtatters@brocku.ca

NEUR 4F90/4F90

- Thermoregulatory Physiology of Fish, Amphibians or Reptiles
- Hypothalamic Control of body Temperature in Hypoxia
- Respiratory Physiology

NEUR 4F91

- Evolution of Vertebrate Lungs
- Post-Exercise Hypothermia in Ectotherms
- Oxidative Stress and Ageing in Animals
- Specific Dynamic Action of feeding in Ectotherms
- Cardiovascular Shunts in Reptiles and Amphibians
- Heat Increment of Feeding in Endotherms
- Mechanisms of Seasonal Metabolic Suppression in Animals
- High Altitude Acclimatisation
- Physiological Adaptations to the Cold
- Molecular Responses to Hypoxia
- Hypometabolism in Diving Animals
- Molecular Adaptations to Hibernation
- Ectotherm Body Size Relationships to Temperature (Why animals Grow large at Low Temperatures)

Tyson, Paul (Department of Psychology)
E-mail: ptyson@brocku.ca

NEUR 4F90/4F90

NEUR 4F91

- Ectotherm Body size Relationships to Oxygen – Large Paleozoic Insects
- Is the Metabolic Depression in Hibernating mammals due to Temperature Effects?