

Exploring Graduate Studies in Biomechanics & Neuroscience

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Introductions & Research Projects

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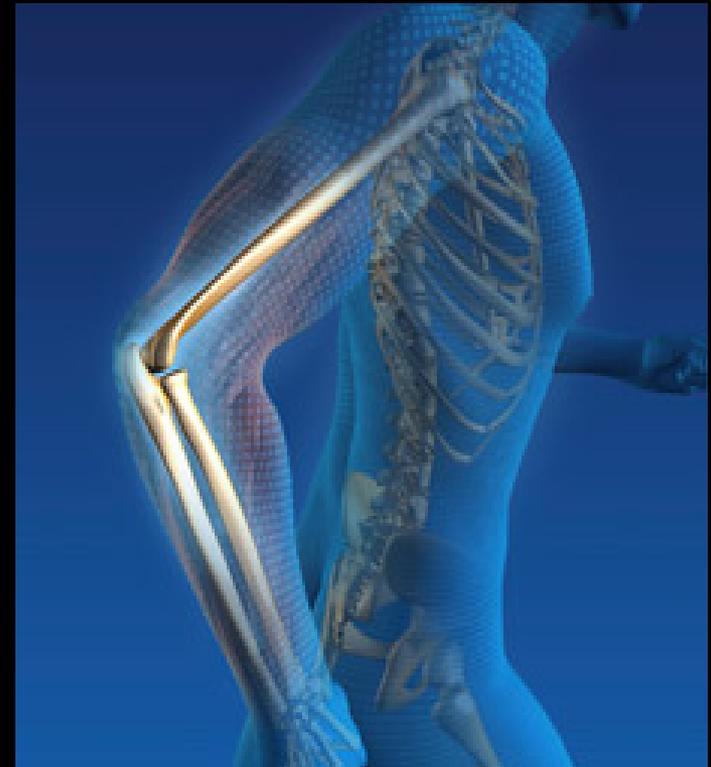
Getting a Head Start

- Identify/contact potential faculty members.
- ISP or Honours Thesis
- Apply as a summer student (NSERC summer awards)
- Volunteer
- Join NSAY (Neuroscience Student Association at York)



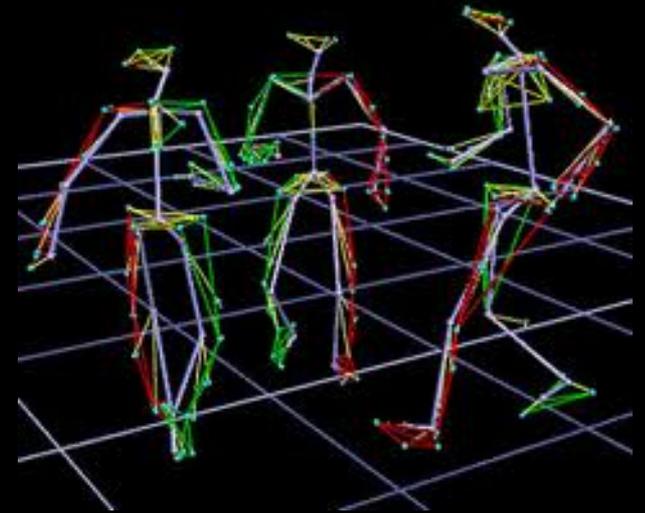
Biomechanics/Neural Control

- Study of human movement from a mechanical perspective.
- Understand the role our brain plays in controlling our movement.



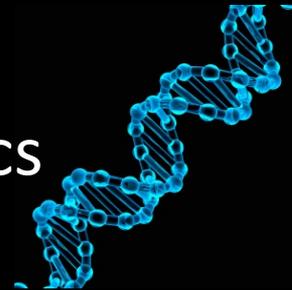
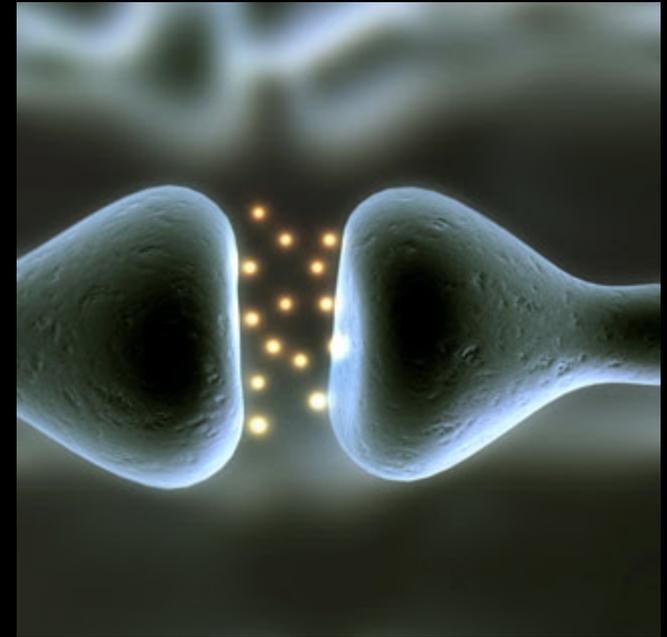
Possible Research Areas

- Biomechanics/Neural control
 - Occupational biomechanics
 - Gait and Posture
 - Ergonomics
 - Motor Control



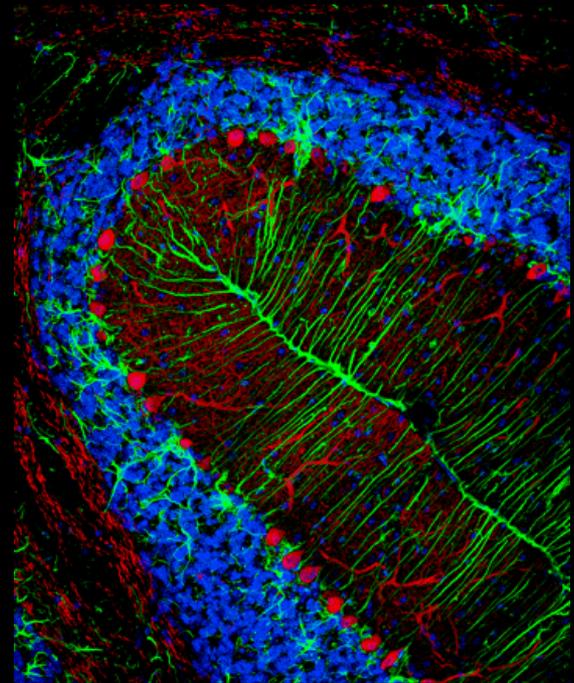
Molecular Neuroscience

- Study of the molecular basis for the development and function of the nervous system
- Understand the regulation and relation of DNA, RNA, and protein biosynthesis and how it affects cell function
- Biology, Chemistry, Genetics



Possible Research Areas

- Molecular Neuroscience
 - Stem and Neuronal Cells
 - Knock-out and Mutant models
 - Signalling and communication
 - Effect of environment and genetics
 - Brain functions: sleep, memory
 - Pathogenesis of developmental and degenerative diseases



Possible Research Areas

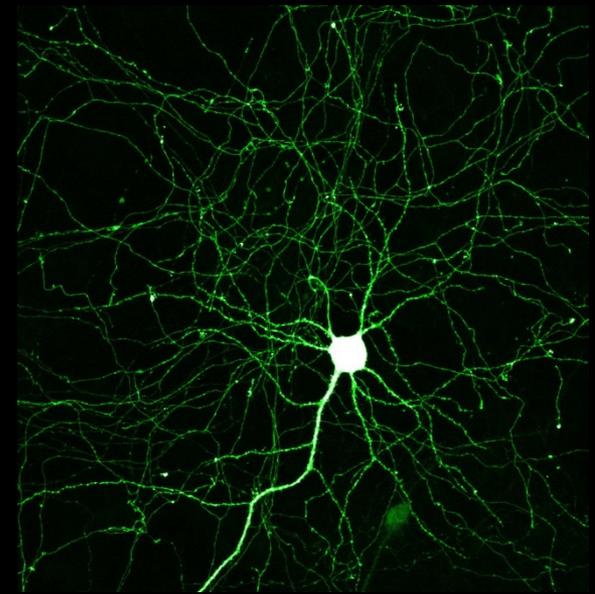
- Cognitive Neuroscience

- KAHS, Psychology, Biology, CompSci/Engineering, Physics/Astronomy
- TMS, EEG, fMRI, behavioural, robotics, computational
- Sensorimotor integration, memory, learning, attention, patient populations (concussion, stroke, Alzheimers, migraine etc), and more....

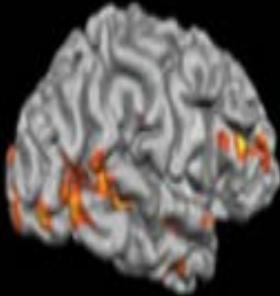


Neuroscience Diploma

- General courses in covering basic knowledge in Neuroscience.
- KAHS 6155 – Fundamentals I
- KAHS 6156 – Fundamentals II
- Seminar Talk.
- Review Paper
- <http://futurestudents.yorku.ca/graduate/programs/diplomas/neuroscience>
- <http://neuroscience.gradstudies.yorku.ca/>



Centre for Vision Research



- <http://www.cvr.yorku.ca/>
 - Includes researchers from psychology, compsci/engineering, biology and kinesiology
 - Seminar series (<http://www.cvr.yorku.ca/content/seminar-series>)
 - CVR Summer School (<http://www.yorku.ca/cvrss/>)
 - Research Labs
 - Biological Vision (<http://www.cvr.yorku.ca/content/biological-vision>)
 - Computer Vision & Graphics (<http://www.cvr.yorku.ca/content/computer-vision-graphics>)
 - fMRI Neuroimaging Facility (<http://www.yorku.ca/mri/>)

Career Options

- Academia
 - Goal: tenure track position at a university
 - Tenure Track = teaching + research + administration duties
 - Post-Doctorate Fellowships

MFSc. & MA (CAT) – Non thesis based programs

- MFSc. – Masters of Fitness Science, Certified Exercise Physiologist stream
 - <http://kahs.gradstudies.yorku.ca/mfsc/>
- MA (CAT) – Masters of Arts, Certified Athletic Therapist stream
 - <http://www.yorku.ca/atherapy/>



Other

- How many people actually use the knowledge they acquire from their degrees?

**Knowledge is good, but YOU NEED
SKILLS...**

Time management

Sales

Public speaking

Hands-on experience

Project management

Networking

Analytics

Marketing

Writing

Other

- Research Assistants
 - Academic laboratories, pharmaceutical companies, clinical research teams (i.e. hospitals)
- Teaching positions
 - What is the job scope? Are you willing to relocate? What type of institution?
- Research Analyst, Project management, Health Policy etc.
- Industry/Consulting