'396' Undergraduate Research Project Application Form

Office for Undergraduate Research in Science
www.mcgill.ca/science/ours/
victor.chisholm@mcgill.ca
Dawson Hall, Room 211
tel 514-398-5964, fax 514-398-8102
Form version 200603

Instructions for students

- *All fields are required, unless indicated otherwise.*
- Download and print this form. Complete Section 3 and sign.
- See "How students can apply" instructions in Section 2.10.
- Your supervisor or department will tell you if you are selected for this project. If so, you will receive a code to register for a '396' course on MINERVA.

1 Supervisor Information

Name:	Prof. Ted Perkins
Email:	theodore.perkins@mcgill.ca
Phone:	514-398-5018
Website:	www.mcb.mcgill.ca/∼perkins
Department or Unit:	School of Computer Science
Course number:	COMP396

2 Project Information

2.1 Term:

Winter 2008

2.2 Project start & end dates:

Jan 3 - Apr 30, 2008

2.3 Project title:

Computational analysis of the wing-disc network

2.4 Project description:

The wing-disc network is a canonical example of a developmental gene network. It is broadly conserved among many species. However, there is some inter-species variation in the network structure (which genes regulate which) and the relative strengths of regulatory interactions. In some species, including ants, the network is also impacted by environmental signals. One or more students are sought to participate in a three-way collaboration between Professors T. Perkins and M. Blanchette in Computer Science and Professor E. Abouheif in Biology. Possible projects, to be discussed with the student and participating professors, include: (1)Promoter sequence analysis for wing-disc network genes in different species, to isolate shared regulatory elements and inter-species differences. (2) Analysis of digital images of ants embryos stained for the presence of wing-disc proteins, to extract quantitative expression data. (3) Simulated evolution or neutral drift with a mathematical model of wing-disc regulation.

2.5 Prerequisites:

1 term completed at McGill + CGPA $\geq$ 3.0; or permission of instructor.

2.6 Grading scheme:

50% final report, 40% weekly progress & meetings, 10% final oral presentation

2.7 Other:

2.8 Status:

This project is:
(X) Open to applicants
( ) Already taken; no more positions available this term
( ) Taken, but contact me for other possible projects this term

2.9 Ethics, safety, & training:

Which of the following, if any, is involved?
( ) Animal subjects
( ) Human subjects
( ) Biohazardous substances
( ) Radioactive materials
( ) Handling chemicals
( ) Using lasers
For undergraduate students, ethics and safety compliance is the supervisor's responsibility.

2.10 How students can apply:

Contact Prof. Perkins by email for an appointment.

3 Student Information. (1) Print legibly and sign. (2) See 'How students can apply' in Section 2.10.

Name:	
McGill ID:	
Email (first.last@mail.mcgill.ca):	
Phone:	
Program (e.g., B.Sc. Maj. Chem. Minor Biology):	
Level: (circle one)	U0 / U1 / U2 / U3
I have not applied for another 396 course this term. **Student signature:**	
Date:	

4 Approvals. (1) Print names and sign. (2) Notify Office for Undergraduate Research in Science. (3) Give student code to register for course on MINERVA.

Supervisor:	
Date:	
I certify that this project conforms to departmental requirements for 396 courses. **Unit Chair, Director, or designate**	
Date:	