

'396' Undergraduate Research Project Application Form

Office for Undergraduate Research in Science
www.mcgill.ca/science/ours/
victor.chisholm@mcgill.ca
Dawson Hall, Room 405
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. David A. Stephens
Email: d.stephens@math.mcgill.ca
Phone: 514-398-2005
Website:
Department or Unit: Department of Mathematics and Statistics
Course number: MATH 396

2 Project Information

2.1 Term:

Summer 2008

2.2 Project start & end dates:

May 5 - August 15, 2008

2.3 Project title:

Statistical Modelling of Volatility

2.4 Project description:

The student will investigate statistical modelling of volatility in financial time series. Currently statistical models based on stochastic process formulations (diffusions and general Levy processes) utilize asset price data but do not utilize fully historical information available from realized volatility or implied volatility from option prices. The aim of the project will be to establish how much predictive ability there is in each of these data series. Few formal statistical inference techniques have been developed.

The student will be responsible for collecting data on each type of series, for pursuing a literature survey to discover what kinds of models have been previously proposed, and for implementing basic statistical analysis in R or MATLAB.

2.5 Prerequisites:

1 term completed at McGill + CGPA ≥ 3.0 ; or permission of instructor.

2.6 Grading scheme:

100% on final project report.

2.7 Other:

2.8 Status:

This project is:

- 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:

This project is already taken; no more positions available this term.

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 depart-
mental requirements for 396 courses. **Unit***

Chair, Director, or designate

Date:
