

# '396' Undergraduate Research Project Application Form

Version: 200603

Office for Undergraduate Research in Science  
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## INSTRUCTIONS FOR STUDENTS

- **All fields are required, unless indicated otherwise.**
- Download and print this form. Complete Section C and sign.
- See "How students can apply" instructions in Section B.
- 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.

## SECTION A: SUPERVISOR INFORMATION

**Name:** Hojatollah Vali **Email:** [vali@eps.mcgill.ca](mailto:vali@eps.mcgill.ca)  
**Phone:** 514-398-3025 **Website:** <http://people.mcgill.ca/hojatollah.vali/>  
**Supervisor's Department or Unit:** Anatomy & Cell Biology **Course Number:** ANAT396

## SECTION B: PROJECT INFORMATION

**Term:** Fall 2006 **Project start & end dates:** Aug. 31, 2006 – Dec. 21, 2006

**Project title:** Formation of hydroxyapatite by *Caulobacter crescentus*

**Project description:** The precipitation of hydroxyapatite in human tissue leads to pathological calcification and to the development of many diseases including the formation of kidney and gallstones, arteriosclerosis, and dental calculi. To understand the molecular machinery involved in this process, nucleation and growth of Ca-phosphate phases (hydroxyapatite) in *Caulobacter crescentus* (sp. CB15) will be used as a model system. The project requires reviewing relevant literature and conducting laboratory experiments including cell culturing and characterization using electron microscopy.

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

**Grading scheme:** The final report and presentation is 100% of final grade.

**Other:** \_\_\_\_\_

**Status:** Mark with an x. This project is...  
[ ] Open to applicants  
[ x ] Already taken; no more positions available this term  
[ ] Taken, but contact me for other possible projects this term

**Ethics, safety, and training:** Which of the following, if any, is involved? Mark with an x.  
[ ] Animal subjects  
[ ] Human subjects  
[ ] Biohazardous substances  
[ ] Radioactive materials  
[ x ] Handling chemicals  
[ ] Using lasers

**For undergraduate students, ethics and safety compliance is the supervisor's responsibility.**

**How students can apply:** (Bring this application form and your advising transcript to me during office hours.) This project is already taken; no more positions available this term.

## SECTION C: STUDENT INFORMATION. (1) PRINT LEGIBLY AND SIGN. (2) SEE "HOW STUDENTS CAN APPLY" IN SECTION B.

**Name:** \_\_\_\_\_ **McGill ID:** \_\_\_\_\_  
**Email:** \_\_\_\_\_@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 in this term.  
**Student signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## SECTION D: APPROVALS. (1) PRINT NAMES & SIGN. (2) NOTIFY OFFICE FOR UNDERGRADUATE RESEARCH IN SCIENCE. (3) GIVE STUDENT CODE TO REGISTER FOR COURSE ON MINERVA.

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