

UNIVERSITY OF WINDSOR
UNIVERSITY PROGRAM REVIEW (UPR)
REPORT ON: BIOLOGICAL SCIENCES
UNDERGRADUATE PROGRAMS
 March 2015

EXECUTIVE SUMMARY

This review covers the undergraduate programming offered by the Department of Biological Sciences. However, to provide context, some information on the area's graduate programs has also been included.

Review Preparation

In preparing this document, the Program Development Committee reviewed the following: Biological Sciences Self-Study (SS) (2013/14), the report of the external reviewers (ER) (March 2014), and the response from the Department Head (May 2014), and the response from the Dean (July 2014) to the above material. The external reviewers were: Dr. Turlough Finan, Professor, Department of Biology, McMaster University, Dr. M. Brock Fenton, Professor, Department of Biology, Western University, Dr. Darren Stanley, Professor, Faculty of Education and Academic Development, University of Windsor.

Undergraduate and Graduate Programs

At the undergraduate level, the Department offers a Bachelor of Science (Honours) in Biological Sciences (with and without thesis), a Bachelor of Science (Honours) in Biology and Biotechnology, a Bachelor of Science (Honours) in Biology and Biochemistry (Health and Biomedical Stream), and, in collaboration with the Department of Psychology, a Bachelor of Science (Honours) in Behaviour, Cognition and Neuroscience. Students also have the option of combining their Honours Biological Sciences major with a major from another discipline or of pursuing a Bachelor of Science (Honours) in Biological Sciences (with or without thesis) degree concurrently with a Bachelor of Education degree.

The Department is also heavily involved in the delivery of the Faculty of Science's General Bachelor of Science program, with a significant number of students in the program electing to focus on biological sciences.

The Department offers a Minor in Biological Sciences, as well as Major and Minor Concentrations for the Bachelor of Arts and Science.

At the graduate level, the Department offers a Master of Science in Biological Sciences and a PhD in Biological Sciences each with the following three fields: 1) Molecular/Cellular Biology; 2) Ecology, Evolution, Environment, and Behaviour; and 3) Neuroscience and Behaviour; and a PhD in Biological Sciences.

Enrolments

Undergraduate

	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014
Full-Time	590.3	579.95	613.99	605.04	622.6
Part-Time	118.3	113.9	108.3	100.8	85.2

Graduate

	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014
MSc Full-Time	30	37	28	28	32
MSc Part-Time	5	2	2	2	0
PhD Full-Time	23	25	29	21	18
PhD Part-Time	8	4	2	4	2

Human Resources

Faculty/Instructors

Tenure/tenure-track faculty	18
AAS as Learning Specialists	2
Sessional Lecturer (continuous 8mth position)	1
Faculty members involved in graduate program delivery	16

Full/Part-time Staff

Secretaries	3
Biology Technician	1
Technician	1
Facilities Maintenance Technician	1
Laboratory Demonstrator	1
Laboratory Technician (part-time)	.75
Biotechnology Program Technician (part-time)	.5
Administrative Financial Clerk (part-time)	.7

FINAL ASSESSMENT REPORT (with Implementation Plan)

Significant Strengths of the Programs

The faculty members in the department demonstrate a strong commitment to teaching and to engaging undergraduate students in research. The level of involvement of undergraduate students in faculty research is commendable. The elite Behaviour, Cognition and Neuroscience program, offered in collaboration with Psychology, attracts top students, as does the Biological Sciences with thesis program. Faculty research and collaboration with external institutions and bodies only serve to enrich the learning experience of students. (ER, pp.1,3-4; SS, p.111)

Opportunities for Program Improvement/Enhancements

By its own admission, the Biological Sciences "curriculum has evolved over the years with little coherent planning. As new faculty are hired they have been allowed to develop courses around their field of specialization and while these are often popular courses it has left our curriculum a bit incoherent in places, with some gaps in key areas." Courses sizes and tracking of students were also identified as areas for improvement. (SS, p.111, ER, pp.3,5) Biological Sciences would "benefit from the exercise of developing a strategic plan that addresses curriculum and resources". (ER, p.3)

IMPLEMENTATION PLAN

Recommendations (in priority order)

(Final recommendations arrived at by the Program Development Committee, following a review and assessment of the External Reviewers report, the Head's response and the Dean's response.)

Recommendation 1: That the Department, working with the Dean, develop a strategic plan, including clear mandates and quantifiable deliverables, that will:

- identify, among others, priorities for future hires with clear justification of positions in the context of the teaching program (*i.e.*, a hiring plan should resources become available), and opportunities for the development of interdisciplinary teaching and research as well as program design with the goal of bringing together the three groups in the department (Neuroscience, Ecology/Environment, and Molecular/Cellular Biology).
- Address the need for curriculum review and reform with attention paid to learning outcomes and rationalization of all course offerings. Any changes to curriculum should ensure the continued offering of the laboratory-based Microbiology course.
- Establish enrolment targets for the overall department and for each program (undergraduate and graduate),

including the new Health and Biomedical Sciences stream, ensuring that growth in any one program does not negatively impact other offerings. The BCN is a unique, strong program and, as part of the strategic planning, the department is encouraged to ensure that enrolment in the BCN is strategically limited to ensure the offering of this elite program within current resources.

- Monitor the impact of new Health and Biomedical Sciences stream on the department and its programs.

Sustainability should be at the core of the strategic plan. The strategic plan should be a living document and should be reviewed and possibly revised every two years.

Agents: Department Head, Department Council, Dean of Science

Completion by: Fall 2016 and biennial review

Recommendation 2: That the Department consider enhancing its outreach to students through the establishment of a Career Night in the Fall and Winter terms, and the re-establishment of the Undergraduate Biology Club.

Agents: Department Head

Completion by: Fall 2016

Recommendation 3: That the Department consider inviting representation from Departmental staff at Council meetings, either as members (in accordance with section Bylaw 40, 4.1.4) or as invited guests.

Agents: Department Council

Completion by: Fall 2016

Recommendation 4: That the Department website provide accurate and timely information to students, including links to other university websites such as a permanent link to the Registrar's timetable and course offering site.

Agents: Department Head

Completion by: Fall 2015

Recommendation 5: That the Department submit learning outcomes and assessment methods for *each* of its programs and courses that clearly correspond to the University's stated "Characteristics of a University of Windsor Graduate".

Agents: Department Council, Head, CTL, Vice-Provost, Teaching and Learning

Completion by: Fall 2016