

TO: Mike Mahon
President

DATE: December 1, 2011

FROM: Bob Boudreau
Chair, University Review Committee

RE: B.Sc. Agricultural Biotechnology, B.A. / B.Sc. Agricultural Studies, B.Sc.
Environmental Science Academic Quality Assurance Review

In accordance with the U of L *Academic Quality Assurance Policy and Process*, the University Review Committee approved the B.Sc. Agricultural Biotechnology, B.A. / B.Sc. Agricultural Studies, and B.Sc. Environmental Science (hereafter Ag. Biotech) review results at its November 1, 2011 meeting. This quality assurance review produced six documents:¹

- 1) *Faculty of Arts and Science Review of Agricultural Biotechnology, Environmental Science and Agricultural Studies: Program Overviews and Self Study Report* (September 2009) – self-study report drafted by the Ag. Biotech Program Review Committee.
- 2) *External Review: Agricultural Biotechnology, Agricultural Studies and Environmental Sciences at the University of Lethbridge* (October 2009) – prepared by external reviewer Garth Coffin (retired, formerly of Nova Scotia Agricultural College).
- 3) *Review of Agricultural Biotechnology, Agricultural Studies and Environmental Studies Undergraduate Programs at the University of Lethbridge, Lethbridge Alberta* (October 22, 2009) – prepared by external reviewer Louise Nelson (UBC Okanagan).
- 4) *Review of the Agricultural Science, Agro-Biotech and Environmental Science Program at the University of Lethbridge* (October 2009) – prepared by external reviewer Hans Schreier (UBC).
- 5) *Review of Agricultural Studies, Agricultural Biotechnology and Environmental Science: Final Report of the Programme Review Committee* (January 2011) – the response of the Ag. Biotech Program Review Committee to the external review.
- 6) *Programme Review – Agricultural Biotechnology; Agricultural Studies; and Environmental Science* (Memo, October 26, 2011) – response to the review, written by Chris Nicol, Dean of Arts and Science. Chris Nicol presented the results of the review to the University Review Committee on November 1, 2011.

¹ All documents are available upon request.

This review was of three closely-related program areas, which in total offer seven majors:

1. B.Sc., Multidisciplinary Major in Agricultural Biotechnology.
2. B.Sc., Major in Environmental Science – four-year program.
3. B.Sc., Major in Environmental Science – two-year post-diploma program.
4. B.A., Major in Agricultural Studies – four-year program.
5. B.A., Major in Agricultural Studies – two-year post-diploma program.
6. B.Sc., Major in Agricultural Studies – four-year program.
7. B.Sc., Major in Agricultural Studies – two-year post-diploma program.

The self-study noted that students and alumni from these programs are very satisfied with their academic experience, and in particular praised the multidisciplinary approach and small class sizes. Several concerns were identified in the self-study: substantial declining enrolments in Agricultural Biotechnology and Agricultural Studies; poor course availability; program constraints that limit the number of program-specific courses students can take; a lack of practical and field-oriented courses; and weak student support in some areas.

Garth Coffin's external review praised the ambition, creativity and hard work that the U of L put into these programs, but noted several concerns, chiefly the falling enrolments and lack of internal resources to mount the programs. Dr. Coffin had three main recommendations:

1. Abolish the Major in Agricultural Biotechnology and develop new courses to offer this program as a minor.
2. Abolish the majors in Agricultural Studies and have the agricultural economics faculty members develop new courses, such as natural resource economics.
3. Redesign the majors in Environmental Science to emphasize soil and water management. Manage this redesigned program through a committee that includes the departments of Agricultural Economics, Chemistry, Geography, and Biology.

In her external review, Louise Nelson commented that in her view the internal resources are insufficient to support all the majors, some of which are likely unsustainable due to declining enrolments. Her three recommendations were similar to Dr. Coffin's:

1. Abolish the Major in Agricultural Biotechnology. Incorporate the biotechnology aspects of this Major into a combined Biochemistry and Biotechnology Major.
2. Abolish the majors in Agricultural Studies. Keep the agricultural economics components in the Economics Major.
3. Strengthen the majors in Environmental Science and refocus the program on soil and water management. Jointly manage the program through the Centre for Water Research, Department of Biological Sciences, Department of Chemistry and Biochemistry, Department of Economics, and Department of Geography.

External reviewer Hans Schreier also commented on enrolments declining to an unsustainable level. His three recommendations were:

1. Restructure the Major in Agricultural Biotechnology, changing the focus to pathogen source tracking and disease issues. Ensure the restructured major is jointly managed by the Department of Biology and the Department of Chemistry and Biochemistry.
2. Abolish the majors in Agricultural Studies.
3. Redesign the majors in Environmental Science to focus on soil and water management. House the redesigned Major in the Centre for Water Research.

For the Program Response, the Ag. Biotech Program Review Committee praised the insight of the external reviewers, but did not accept the recommendations to abolish the majors in Agricultural Biotechnology and Agricultural Studies. The Committee felt that the problems identified for these majors are solvable, and that their abolishment would devalue the degrees earned by alumni of the programs and damage commitments made to existing students and partner institutions. In their report, the Program Review Committee provided several recommendations for each program, with the ultimate aim of streamlining and adjusting them to improve their effectiveness:

Program:	Recommendations:
B.Sc., Multidisciplinary Major in Agricultural Biotechnology	<ol style="list-style-type: none">1. Create an assigned, adequately-resourced office for this Major.2. Discuss re-establishing the Partner Professorship program, or other form of partnership, with the Lethbridge Research Centre.3. Form a working group to explore partnerships with other institutions, such as Lethbridge College and the Animal Diseases Research Institute.4. Develop a promotional plan.5. The Agricultural Biotechnology Program Committee should complete a curriculum review. This review should consider: possible partnerships with other institutions; integration of co-operative and applied studies opportunities; and incorporation of pre-professional and work study options or streams.6. When possible, establish an additional faculty position in the area of agricultural biotechnology.
B.A., Major in Agricultural Studies	<ol style="list-style-type: none">1. Appoint a Coordinator of Agricultural Studies to recruit students from partner institutions.2. Engage the Coordinator of Agricultural Studies in academic advising.3. Through the Dean's office, encourage other departments in Arts and Science to consider the needs of Agricultural Studies during hiring processes.

4. When possible, establish two new faculty positions, in the departments of Geography and Economics.
5. Consider reorienting the program as a Major in Agriculture and Food, Agriculture and Food Security, or Agriculture and Food Policy. Involve other departments like Sociology, Anthropology, Political Science, and Globalization Studies in this process.
6. Consider developing the economics and marketing aspects into a Major in Agricultural Management in the Faculty of Management.

Program:

B.Sc., Major in
Environmental Science

Recommendations:

1. Consider changes to program administration, including the development of a School of Environment.
2. When possible, establish two new faculty members in the area of water and soil science, designated as Assistant, Associate, or Full Professors of Environmental Science.
3. Explore an appropriate professional designation for graduates.
4. Build a teaching lab for soils instruction in the Alberta Water and Environmental Science Building.
5. Improve the promotion of the program.
6. Continue to establish agreements with colleges for post-diploma students.
7. Charge a working group with solving timetabling issues.
8. Review and revise course offerings and requirements for direct entry and post-diploma programs.

In his Dean's Response to the results of the Ag. Biotech review, Dean of Arts and Science Chris Nicol noted that steps have already been taken to address several of the concerns:

- All three programs now have a Program Coordinator and an Advisory Committee.
- The Faculty of Arts and Science successfully nominated a candidate in the environmental science area as a Canada Research Chair. This will free additional resources that can be used to augment staffing in the three programs.
- The Department of Economics is searching to fill a tenure-track position for someone with expertise in environmental and natural resource economics.
- The Faculty is recruiting for two research chairs, in aquatic health and terrestrial ecosystem remote sensing, through the Campus Alberta Innovates program. These positions will strengthen the agricultural and environmental science areas.

Based on the academic quality assurance review results, the Dean's Response noted four future directions:

1. The Dean's office will meet with the Program Coordinators and relevant department chairs to ensure the administration of the Agricultural Biotechnology, Agricultural Studies, and Environmental Science majors remains effective.
2. Review and revise program curricula to give a greater emphasis to water research, environmental sustainability in agro-ecosystems, and food scarcity and food security.
3. Develop new agreements with the Lethbridge Research Centre and the Animal Disease Research Institute to allow the participation of their researchers in the Agricultural Biotechnology, Agricultural Studies, and Environmental Science majors.
4. Develop ways to exploit the linkages between these majors and the U of L's expertise in water and terrestrial remote sensing.

The University Review Committee is satisfied that the Ag. Biotech academic quality assurance review has followed the U of L's academic quality assurance process appropriately, and acknowledges the successful completion of the review.

Regards,

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