University of Lethbridge

Office of the Provost and
Vice-President (Academic)
and Deputy Provost

4401 University Drive
Lethbridge, Alberta, Canada
T1K 3M4

Phone: 403-329-2202
uleth.ca/vp-academic/
provost@uleth.ca

TO: Digvir Jayas
President and Vice Chancellor

DATE: December 8, 2025

FROM: Lynn Kennedy
Chair, Academic Quality Assurance Committee

RE: Agriculture Programs Academic Quality Assurance Review

In accordance with the U of L *Academic Quality Assurance Policy and Process*, the Academic Quality Assurance Committee approved the review of the Agriculture Programs at its March 6, 2025, meeting.

The Self Study Committee for this review was comprised of: Carla Carnaghan and Jennifer Copeland (Program Review Coordinators), Bahareh Mosadegh, Craig Coburn, Danny Le Roy, Elizabeth Schultz, and Michele Konschuh.

The review produced 4 documents:

1. Self Study Report. Written by the Self Study Committee. Received July 19, 2024.
2. External Review Report. Written by Dr. Andreas Boecker (University of Guelph), Dr. Dian Patterson (Dalhousie University), and Dr. Heather Bruce (Dalhousie University) based on site visit September 26 to 27, 2024. Received November 6, 2024.
3. Program Response. Written by the Self Study Committee. Received December 5, 2024.
4. Dean's Response. Written by Matt Letts, Dean of the Faculty of Arts and Science, Kerry Godfrey, Dean of the Dhillon School of Business, and Jackie Rice, Dean of the School of Graduate Studies. Received February 18, 2025.
5. Provost's Action Plan. Written by Michelle Helstein, Provost and Vice President (Academic). Received December 7, 2025.

Self Study Report

The report highlighted a number of program strengths including:

- A few very passionate and knowledgeable faculty members are doing agriculture related teaching and research.
- Existing programs have some degree of multi-disciplinarity.
- Technical semester with hands on application of agricultural concepts well regarded by alumni and faculty.
- Good facilities to support research in biotechnology.
- Student involvement in faculty research at the undergraduate level.
- Located in a region with a large, diverse, and important agri-food industry (Canada's Premier Food Corridor) and research facilities (e.g., Agriculture and Agrifood Canada Lethbridge Research and Development Centre; Lethbridge Polytechnic).
- Affiliated programs, such as agricultural engineering, are being developed.
- Opportunities for co-op placements in agricultural related jobs.

The report also noted some challenges experienced by the program:

- The Self Study report identified that agriculture-related program suffered from a lack of:
    - institutional focus on agricultural-related programming; no champion/central voice for programs, not well known in region or province; little ongoing development.
    - specific program learning goals to help ensure courses are aligned with planned outcomes.
    - dedicated faculty and faculty expertise in certain areas, such as analytical chemistry or in many animal sciences.
    - agricultural community internal to institution – hard to know who else is interested in agriculture related research and teaching.
    - agricultural-specific connections to other PSIs involved in agriculture in southern Alberta, such as Olds College and Lethbridge Polytechnic.
    - facilities such as farms/fields/agricultural equipment for students to apply their knowledge or carry out certain types of agricultural research.
    - dedicated team to build employer partnerships.
    - focused marketing to increase awareness of range of careers in agriculture, including those involved with sustainability and technology, as well as of our agricultural programs.
- Agriculture-related programs include courses from other disciplines, but these courses often lack specific agricultural content.
- Limited agricultural courses, both in terms of defined courses and in terms of frequency of offering.
- Insufficient depth in sub-disciplines such as biotechnology for students to get background to work in those sub-disciplines.
- Limited number of course offerings because of low enrolments.
- Programs do not provide a direct path to the PAg (Professional Agrologist) designation.
- Multi-disciplinarity is within faculties, rather than across faculties.

The report made several recommendations and asked for External Reviewer feedback on several areas including:

- The University has an opportunity to work in closer collaboration with the local community and to contribute to agricultural growth and development of this sector in southern Alberta, e.g., Canada's Premier Food Corridor. The University should explore involvement with new Agriculture Innovation hub:
    - There are a substantial number of Co-op, Applied Study, and Independent Study opportunities in agriculture due to proximity to agri-food industry and Agri-Food Canada Research Station.
    - There is a great diversity of agriculture business and types of agriculture in area – lots of room for various aspects of agriculture to be included in programs.
- The University could develop agricultural programming with distinctive features, such as a focus on irrigation or dryland farming, or a particularly high value crop, such as potatoes.
- Students expressed a strong interest in experiential learning, which would be aligned with provincial government and University directions.
    - Collaboration with Olds College and Lethbridge Polytechnic.
    - Opportunities to collaborate with Indigenous communities who are working in agriculture.
- There is a possibility for innovative program designs such as micro credentials; cross-faculty multi-disciplinary programming; certificates and diplomas; laddering, credentialing.
- Opportunities to pursue research and other grants from Tri-Councils and potentially agencies such as PrairiesCan and RDAR, and funding/donations from community partners.
- How do we develop distinctive programming that is aligned with regional and global needs and complementary to, not competitive with, other agriculture programs and initiatives in the region? Do you see particular niche areas that the University should consider focusing on with respect to research and teaching in agriculture?
- How could we better use our available resources by coordinating our agriculture-related programs across campus?
- Do we need fewer or different programs in order to have viable and successful agriculture programs that meet the needs of our students?
- How can we create more industry partnerships to support our agricultural programs?
- How might we approach Indigenization in agriculture-related programs?
- What do you think is the best way to administratively structure and govern a multidisciplinary agriculture program?
- What kind of facilities would need to be developed, or be accessible to the University, to focus on technology and sustainability in agriculture?
- Can you identify exemplars of programs that have successfully implemented multi-institutional partnerships for agriculture programming?
- What would be effective strategies to develop partnerships with other post-secondary institutions, and what factors should we keep in mind in choosing partners?

External Review Report

The External Review Report contained twelve (12) recommendations for improving the Agricultural Programs:

- We support: (a) the existing suspension of Agricultural Enterprise Management (AGEM), and (b) ending the Arts and Science Program concentration in agriculture in economics at the undergraduate level and redirecting resources elsewhere.
- The University of Lethbridge would likely benefit from suspending the agriculture undergraduate majors in Arts and Science and (a) focusing on graduate studies including MSc and PhD thesis-based studies and a course-based MSc in Sustainable Ag, and (b) taking time to revamp undergraduate offerings with a regional flavour and form meaningful partnerships with the local agriculture industry.
- An inter- and cross- disciplinary research and outreach hub could be formed with its own administrative support. The hub could support teaching and learning at the graduate level and could serve as a platform for undergraduate theses and independent studies research projects with an agricultural focus for students in science or business programs.
- A mapping exercise needs to be performed to understand what the institution is doing in agriculture now. There is a need to establish statistics on where graduates from the programs land following graduation. Also, there is a need to understand and be aware of what kind of agricultural research projects the university has and who their partners are.
- Business should continue to be a focus of agricultural programs. There may also be opportunity to partner with Lethbridge Polytechnic to provide support for their second-year agricultural business diploma. This type of program could focus on the best of economics/business, management and agriculture and could incorporate international universities or local businesses as internship hosts with either commodity, agriculture or food businesses involved.
- There is a need to start thinking about metrics by program, not just at the entire university level. The institution needs to engage in a mapping exercise to understand the resources committed to agriculture and identify what is done now and what could be done in future. The objective of this exercise is to understand how many resources would be freed if the ARPs were terminated, including advising. This needs to be a comprehensive exercise including lab spaces, TA resources, sessional instructors, and student advising.
- There is the opportunity to highlight the link between science and biotech and eventually agriculture as an entry into the University of Calgary Veterinary Degree and to provide animal experience as a co-op with vet practices or farms for animal handling.
- It is worth rethinking the currently offered programs to provide degrees focusing on subjects with limited offering elsewhere. We would suggest having the first two years common with a biology degree as they are, with the last two years focused on agriculture-related course work with a concentration in either sustainable plants or animals to produce agriculture-related programs.
- Forming a school or division of agriculture within the faculty of Arts and Science and Department of Biological Sciences would be useful and would serve to focus programming development efforts. Indigenous and EDIA perspectives are critical in program development, and program development needs to be looking at meeting the professional agrologist designation of Alberta Institute of Agrologists (AIA) and the ability to become certified crop advisors (CCA) similar to the system the University of Saskatchewan developed.
- Industry sees the 2 + 2 with Lethbridge Polytechnical as desirable in strengthening the polytechnic students, and the competencies from Lethbridge Polytechnic would go a long way to making University of Lethbridge students eligible for professional designations. The industry sees much potential for success in an agri-tech program rather than what is offered at present. Food process engineers are needed, and maybe a sustainable agri-food engineer degree could address this gap in value-adding capacity in Alberta.
- The University has some way to go with re-establishing connections with the agriculture industry as the agriculture industry did not feel heard. Now that Lethbridge Polytechnic is graduating degree

students, University of Lethbridge could focus on its graduate studies in agriculture or stackable certificates.

- Graduate studies programming would be bolstered by the close association of University research with Agriculture and Agrifood Canada (AAFC).

Program Response

In their Program Response, the Self Study Committee addressed the recommendations from the External Review Report:

1. *We support: (a) the existing suspension of Agricultural Enterprise Management (AGEM), and (b) ending the Arts and Science Program concentration in agriculture in economics at the undergraduate level and redirecting resources elsewhere.*	We generally agree, though it is not clear whether these resources can be redirected elsewhere in Arts and Science (the Dhillon School of Business has already re-assigned instructors involved in AGEM). This would depend on whether those teaching agricultural economics have expertise relevant to teaching other economics or policy courses. The emphasis of the recommendation is on suspension, at the undergraduate level, of the program concentrations in agricultural economics. The external reviewers note demand for agricultural policy and economic analysis is at the graduate level. Consideration should be given to reallocating at least some of the resources thus freed to graduate level courses related to agricultural policy and economic analysis within a larger graduate program in policy or economics, or in the new course-based MA in Economics.
2. *The University of Lethbridge would likely benefit from suspending the agriculture undergraduate majors in Arts and Science and (a) focusing on graduate studies including MSc and PhD thesis-based studies and a course-based MSc in Sustainable Ag, and (b) taking time to revamp undergraduate offerings with a regional flavour and form meaningful partnerships with the local agriculture industry.*	We agree having a focused graduate MSc in agriculture with a clear research emphasis would align with faculty strengths. We do not know the level of demand for a course-based M.Sc. in Sustainable Agriculture; an analysis of market demand would need to be done. We note that it would likely be very difficult to attract sufficient students to any graduate programs in agriculture if we don't have a recruiting pathway through our own undergrad agriculture programs. Given our current lack of reputation in agricultural education, we are unlikely to attract students who have done undergraduate degrees in agriculture at other institutions. However, we could explore several approaches to trying to get sufficient students for a graduate program in agriculture, which are not mutually exclusive: (a) Creating a clear pathway from the agriculture undergrad programs at Lethbridge Polytechnic as well as other undergraduate agriculture programs at other polytechnics and degree granting colleges (e.g. Lakeland and Olds Colleges) to agriculture graduate degree programs at the University. This would however require a scaffolding approach to give the students sufficient scientific background to successfully transition into graduate studies. (b) Creating a concentration in the B.Sc. in Biological Sciences for agricultural science, or another agricultural concentration attuned to regional agricultural needs that complements the University's existing expertise in biology or biotechnology. For example, we could have a focus on irrigated crops or specific high-value crops such as potatoes. (c) Providing Lethbridge Polytechnic or college students in agricultural programs a chance to come to the University to do a science term, given the external review's emphasis of the University's strengths in scientific research in agriculture, to further develop two-way collaborations. This would help address the lack of scientific background noted in option (a) above. We feel option (b) has potential, i.e. to suspend the existing A&S majors in agriculture in favour of focusing on agricultural concentrations. Concentrations could function as a means of drawing students to the University of Lethbridge, supporting their academic goals while realizing initiatives such as the collaboration with regional agricultural community, recruiting for graduate programs in agriculture, and collaboration with other post-secondary institutions. Options (a) and (c) also have potential, but require discussions with the other institutions to determine how we can collaborate. The agricultural concentrations curricula should be reviewed periodically to revamp and update courses to align with current community needs and faculty

	expertise. As part of this change, the viability of continuing the technical semester at Lethbridge Polytechnic would need to be considered. While the technical term is clearly viewed as a beneficial experience by many students in our current Agriculture degree programs, the full semester (15 credit hours) of courses required does not fit easily into a concentration. We would suggest the technical studies semester could be an optional add on to a concentration in Agriculture, or it could be mandatory with the recognition that a concentration in Agriculture takes additional courses. This would need to be considered carefully as part of this change. We agree in the longer term that a multi-disciplinary agricultural major could be created that aligns with the planned agricultural engineering program and complements Dhillon School of Business agri-business related programming, as well as community needs, though we note the region emphasizes irrigated agriculture, rather than dryland farming. An emphasis on sustainability and community engagement through experiential learning would be aligned with the University's new strategic plan.
3. *An inter- and cross disciplinary research and outreach hub could be formed with its own administrative support. The hub could support teaching and learning at the graduate level and could serve as a platform for undergraduate theses and independent studies research projects with an agricultural focus for students in science or business programs.*	Agreed. Such a hub could address and rectify the lack of community understanding about how the University contributes to agriculture. A hub could showcase what we do in agricultural research and education, as well as support cross-disciplinary faculty collaboration. The hub also should be active in outreach to the agricultural community, possibly through an annual event. To further enhance outreach, the hub might host regular events such as webinars, podcasts, and an annual conference (similar to the McCain Sustainable Agriculture showcase held in 2023) to share research outcomes and foster collaboration. The hub could also provide means for community and prospective students to contact researchers working in agricultural related areas. Over time, the hub could also establish partnerships with similar hubs and institutions nationally and internationally, positioning the University as a leader in agricultural research and education. It could also serve a role in coordinating agriculture related curriculum. Further analysis is needed to determine if the hub should be structured as a University centre or institute. A starting point for the Hub could be creating a website that lists faculty and research projects related to agriculture. Environmental Science has a similar website that may provide a template. One possible name and tagline could be "The Agriculture Innovation Hub: where Science Research and Education intersect with Agriculture". Some potential responsibilities for the hub are listed below, analogous to the previous points. 1. To bring together students, researchers and the community with interests in Agriculture to build connections and contribute to the business, economics and science that drives our future. This would include developing meaningful collaborations within Canada's Premier Food Corridor. 2. To highlight and promote excellence in agriculture education and research. 3. To coordinate new curriculum and promote interdisciplinary linkages within and beyond the UofL. 4. To develop and support student pathways for advanced training in science at the undergraduate and graduate level for students wanting advanced education in agriculture related research. 5. To complement from a curricula and research perspective any future initiatives related to agricultural engineering.
4. *A mapping exercise needs to be performed to understand what the institution is doing in agriculture now. There is a need to establish statistics on where graduates from the programs land following graduation. Also, there is a need to understand and be aware of what kind of agricultural research projects the university has and who are their partners.*	Some of this mapping was done as part of the self-study report development (e.g. faculty with existing and potential interests in agriculture, publications, facilities, etc.), though part of what was learned was not reported in the self-study report. We feel graduate theses, projects, and dissertation should be included in the hub, along with faculty projects and partnerships. We would recommend that the position of Agricultural Studies coordinator be redirected to support the mapping exercises and hub with one course release (sufficient resources to do), but marketing resources would also need to be provided to help with layout and promotion of the hub. Additional help from a senior undergraduate student or graduate student is likely needed to complete the mapping and organize the data for the hub.

	We agreed there is a need for systematic tracking of alumni, and their outcomes, as well as collection of student success stories and feedback to help with ongoing improvement with program. However, this need is likely more widespread than just agriculture related programs at the University. We would suggest this issue be referred to Alumni Relations in Advancement, and could also provide valuable information for future reviews across all programs.
5. *Business should continue to be a focus of agricultural programs. There may also be opportunity to partner with Lethbridge Polytechnic to provide support for their second-year agricultural business diploma. This type of program could focus on the best of economics/business, management and agriculture and could incorporate international universities or local businesses as internship hosts with either commodity, agriculture or food businesses involved.*	We agree with this recommendation, but would suggest starting with agri-business or food management concentrations within existing B.Mgt/BBA majors, given limited faculty resources. If these approaches are successful in attracting students, a revised major in agri-business/food management could be developed. We agree such concentrations or majors should have an emphasis on technological innovation and sustainability, which are directions aligned with the DSB's strategic plan. In addition, such programs should highlight opportunities in digital agriculture, supply chain management, and agri-tech entrepreneurship to align with industry trends and regional needs. Agri-business/food management programs might be very attractive to international students, many of whom are coming from agricultural backgrounds. Current (as of November 2024) CIP code provisions for diploma programs that can result in Post-Graduate Work Permits do include agri-food and agri-business. We also agree with the recommendation to have discussions with Lethbridge Polytechnic to explore curricula partnerships related to agri-food, and to explore partnerships with other universities nationally and internationally for internships and possibly exchanges and curricula partnerships. These partnerships could include joint-degree programs or laddering pathways, where students begin their studies at Lethbridge Polytechnic and transition seamlessly into related business programs at the University, or do studies at the University and transition into graduate agri-food programs elsewhere. Any curricula in agri-business or food management should have a strong experiential component. This could include capstone projects, case competitions, or collaborations with local businesses to provide hands-on learning opportunities. The biggest constraint to development of curricula and partnerships is lack of human resources with the time to engage in discussions and develop the agreements, as well as the resources to implement such programs. However, efforts could be made to secure funding for infrastructure that would support digital innovation and analytics in business, with an emphasis on the agriculture industry, and that might also include support for administrative roles. The DSB does not currently have plans to develop course-based graduate programs focused on entrepreneurship and/or agriculture, but potentially a stream could be developed in the New Master of Management in the longer term, which is designed in part to enable focus on particular industries.
6. *There is a need to start thinking about metrics by program, not just at the entire university level. The institution needs to engage in a mapping exercise to understand the resources committed to agriculture and identify what is done now and what could be done in future. The objective of this exercise is to understand how many resources would be freed if the ARPs were terminated, including advising. This needs to be a comprehensive exercise including lab spaces, TA resources, sessional instructors, and student advising.*	The mapping exercise has been discussed in an earlier response. While we don't disagree with this recommendation, we don't feel the resource savings are necessarily significant. There are only a few courses exclusive to agriculture programs in Arts &Science – one course in agricultural biotechnology for example, plus half a lab section. The nature of the ARP in A&S is that many courses are shared across programs, so the number of dedicated courses is relatively small relative to many other majors. While there might be some re-assignment of academic staff and savings of TAs, in other areas such as advising we doubt there would be any significant effect on workload, with some time saved from things like not having to do grad checks or deal with appeals for students in the agriculture-related majors. If the institution is going to continue with graduate majors or support of graduate students working on agriculture related research, there may be no ability to re-allocate lab space.
7. *There is the opportunity to highlight the link between science and biotech and eventually agriculture as an entry into the University of Calgary Veterinary Degree and to provide animal experience as co-op with vet practices or farms for animal handling.*	We agreed with continuing conversations with the University of Calgary to explore opportunities and ways within existing resources and planned improvements to prepare students for the veterinarian medicine program and admission thereto. Those conversations have already started. We also see being more deliberate about pathways to veterinary medicine programs as a potential way to foster ties with the local veterinarian community, including their involvement in preparing students to apply and be accepted into veterinary

		medicine. However, pending further discussions with the University of Calgary, we don't feel the Biotechnology major would have any special advantages to prepare students for veterinary medicine, relative to a Biology major. We also note that the veterinary medicine pathway results in relatively small demand, compared to the many other occupations where we can prepare biology and biotechnology students to thrive.
8.	*It is worth rethinking the currently offered programs to provide degrees focusing on subjects with limited offering elsewhere. We would suggest having the first two years common with a biology degree as they are, with the last two years focused on agriculture-related course work with a concentration in either sustainable plants or animals to produce ARPs.*	We appreciate the suggestion. As previously noted, we don't know that sufficient resources will be freed by suspension of the agriculture related programs to engage in the development of new curricula. This recommendation seems aligned with the part of Recommendation 2 related to developing a major in the longer term. We agree it would make sense for any new major to be aligned with sustainability as a University strategic direction, as well as any new agricultural engineering program and curricula related to agri-business/food management in DSB, and to explore collaborations with other institutions with agriculture programs. In addition, any new program should emphasize interdisciplinary learning, integrating elements of biology, business, environmental science, and engineering to reflect the multifaceted challenges of sustainable agriculture. Development of stackable credentials within the institution could also be appealing (e.g., a diploma in sustainable agri-business/food management combined with a diploma in biology with a concentration in sustainable agriculture could result in a degree in sustainable agriculture and food management).
9.	*Forming a school or division of agriculture within the faculty of Arts and Science and Department of Biological Sciences would be useful and would serve to focus programming development efforts. Indigenous and EDIA perspectives are critical in program development, and program development needs to be looking at meeting the professional agrologist designation of Alberta Institute of Agrologists (AIA) and the ability to become certified crop advisors (CCA) similar to the system the University of Saskatchewan developed.*	While the development of a multi-disciplinary school to foster agriculture related programs at the University is interesting, we feel that starting with a hub (possibly with an underlying Centre or Institute) is more feasible given current resource constraints. Depending on what faculty structure is proposed to house agricultural engineering, combining other ARP with agricultural engineering in a new administrative structure might make sense. We agree Indigenous and EDIA perspectives need to be considered in future programming. It may be possible that we might be able to satisfy professional agrologist requirements with some changes to resourcing and scheduling of our courses, but otherwise can explore a collaboration with the Polytechnic to provide additional courses to enable students to be qualified for this designation, and the certified crop advisor designation. Once the opportunities for collaboration are explored, we would be in a better position to understand what the University needs to provide in terms of course content and instructor expertise. Perhaps the key inference to be drawn from this recommendation, which echoes the self-study report, is that there is a need for one or more individuals to manage agriculture related programs at the University, from a multi-faculty/multi-disciplinary perspective. The individual(s) must have as central responsibilities the following: updating and creation of new agricultural curricula, fostering of agriculture research, collaboration with other institutions, and engagement with the agricultural community. These should not be peripheral to other duties. The lack of this type of focused support has been a key contributor to the languishing of ARP at the University, and not directly addressing this is likely to lead to more of the same. Resources for this may come from resources that are freed by implementing some of the previous changes, though marketing, website expertise, and event coordination is likely to require support from non-academic staff. If resources are not available to support the development and operation of an Agricultural Hub, there may be little value in trying to have agricultural concentrations or graduate programs in agriculture, as we are unlikely to be able to address many of the issues raised in the last or existing external reviewer report.
10.	*Industry sees the 2 + 2 with Lethbridge Polytechnical desirable in strengthening the polytechnic students, and the competencies from Lethbridge Polytechnic would go a long way to making University of Lethbridge students eligible for professional designations. The industry sees much potential for success in an agri-tech program rather than what is offered at present. Food process engineers are needed, and maybe a*	We agree, and have discussed potential areas for collaboration in earlier responses.

sustainable agri-food engineer degree could address this gap in value-adding capacity in Alberta.	
11. *The University has some way to go with re-establishing connections with the agriculture industry as the agriculture industry did not feel heard. Now that Lethbridge Polytechnic is graduating degree students, University of Lethbridge could focus on its graduate studies in agriculture or stackable certificates.*	We agree that agricultural related graduate programs should be the primary focus of curricula in Arts & Science, and have responded to these points earlier. Developing an agricultural hub, as well as preparing students for and encouraging students to engage in Work Integrated Learning in agriculture would help solidify and expand agri-business.
12. *Graduate studies programming would be bolstered by the close association of University research with Agriculture and Agrifood Canada (AAFC).*	Approximately 11 researchers already routinely do work with the AAFC; AAFC and CFIA researchers are adjunct faculty at the University, and University graduate and undergraduate students routinely conduct research at AAFC and the Canadian Food Inspection Agency (CFIA). Development of the previously mentioned hub to emphasize agricultural related research at the University might help further expand this association, and help others external to the University to find collaborators and partners. We also need to review why only a few students are registering in graduate programs designated as being agricultural, and instead doing agricultural work in majors such as biology. This tendency makes it harder for the University to identify and highlight agricultural research being done by graduate students.

Dean's Response

The Deans of the Faculty of Arts and Science, the Dhillon School of Business, and the School of Graduate Studies responded to the twelve (12) recommendations from the External Review Report:

1. *We support: (a) the existing suspension of Agricultural Enterprise Management (AGEM), and (b) ending the Arts and Science Program concentration in agriculture in economics at the undergraduate level and redirecting resources elsewhere.*	With an insufficient faculty complement in the Dhillon School of Business (DSB) and declining undergraduate enrolments in Agricultural Studies B.A. and B.Sc. programs, suspension or elimination of programs is a possibility, though it is not entirely clear what is meant by the "concentration in agriculture in economics". Below, we respond to the two recommendations: (a) The DSB's Agricultural Enterprise Management (AGEM) major within the BMgt/BBA was suspended, and the one DSB faculty member teaching in that area has been reassigned to other programmatic areas within the DSB. If a graduate program that includes agricultural policy and economic analysis were to be developed in A&S, there is the possibility that DSB could contribute to such a program via the individual Agricultural Economics faculty member in DSB. (b) If the external reviewers are referring to the Concentration in Agricultural Business available to Agricultural Biotechnology and Agricultural Studies students, it should be noted that courses in the Concentration are economics and business courses without an agriculture focus. These are intended to add a business element to agriculture-related degrees, not to add an agricultural element to other degrees. As such, there would not be agricultural expertise to redirect by cancelling this concentration as none of the courses involved (Accounting 2100, Marketing 2020, Economics 3030 / 3780, Human Resources and Labour Relations 3050, Management 3010 and Political Science 2210) are primarily centered on agricultural themes. Whether the Concentration in Agricultural Business would continue in its current form would depend on whether we continue to run undergraduate programs in agriculture for which such a Concentration would be valuable. If we change programming to have a focus on agriculture-related Concentrations or Minors for other Majors (eg., Biological Sciences, Physical Geography, Economics, Environmental Science, B.B.A. programs etc.), then the Concentration(s) would need to be redesigned to consist of agriculture-related courses. It is unclear if this recommendation may refer to the suspension of the longstanding Agricultural Studies B.A. and B.Sc. programs, as outlined in Recommendation #2. Most of the courses in these programs would still be of value to related programs if such a curriculum recommendation were to be proposed and accepted, which would limit the redeployment of expertise toward alternative programs.

2. *The University of Lethbridge would likely benefit from suspending the agriculture undergraduate majors in Arts and Science and (a) focusing on graduate studies including MSc and PhD thesis-based studies and a course-based MSc in Sustainable Ag, and (b) taking time to revamp undergraduate offerings with a regional flavour and form meaningful partnerships with the local agriculture industry.*	**Recent Growth in Agricultural Expertise - Background** There has been a significant shift over the past five years in the distribution of faculty expertise in agriculture, with substantial growth in agricultural expertise the area of Biological Sciences. This has included dramatic growth in agricultural research funding and opportunities for HQP. We have added to existing expertise in fields such as but not limited to potato research and applications of epigenetics and impacts of agricultural activities on nutrient loading and aquatic ecosystem function, to include prominent, industry-relevant fundamental research supported by major funding in apiology, cattle feed and food-borne pathogens, regenerative agriculture and crop selection including new crops for southern Alberta and sustainable agriculture. This is not to mention the industry engagement and entrepreneurship we are seeing through Synbridge by undergraduate and graduate students in biochemistry, biomolecular science and bioengineering fields involving faculty members in Chemistry & Biochemistry or in Neuroscience, with the development of sensors to examine the health and behaviour of livestock from bees to cattle. We have also recently allocated a new CRC in Sustainable Agriculture and are greatly improving our agriculture-related facilities with major CFI funding contributing to a major refurbishment of Hepler Hall toward this end. Expertise on the B.A. side in Economics is intact as well, while our remote sensing and GIS experts with some of their research relevant to precision agriculture, have seen recent major funding successes that complements other agriculture expertise in the department related to entomology and climate change. There is, unfortunately, no central hub or even website where this diverse and extensive expertise can be easily observed by an outsider. Even within the university, there is some lack of understanding of our extensive agricultural research activity. Strategic investment in new faculty and overall growth in scientific agricultural expertise has rather dramatically increased extramural research funding in agriculture-related fields, with many millions of dollars in funding from RDAR, NSERC, Alberta Innovates and industry. These professors are taking on graduate students who provide teaching resources as well. However, there has been very little new program development and adjustment to reflect this new agricultural expertise because of the need for them to deliver courses toward degrees in their disciplines in an environment where there have been losses to the faculty complement through attrition. It is also of note that seven faculty members hold prestigious research chair positions, which decreases their assigned teaching load. **How Best to Adjust Agriculture-Related Programs** The key question is how our students and the southern Alberta community could benefit most from this growing and intentionally developed expertise in Agriculture. The external reviewers suggest that we suspend the B.A. and B.Sc. in Agricultural Studies and focus on graduate studies, including thesis-based M.Sc. and Ph.D. programs and a new course-based M.Sc. in Sustainable Agriculture. The external reviewers remark on the relative success of the B.Sc. in Agricultural Biotechnology which can lead to P.Ag. designation, but note that the program has less agricultural content than would be desirable. They suggest improved undergraduate offerings with meaningful connections to the local agriculture industry and involving socioeconomic, scientific and environmental elements under a new name. We generally agree with these recommendations. (i) Undergraduate Programming The external reviewers outlined the lack of a market for generalized agricultural degrees, and we were disheartened to learn of the extent of student dissatisfaction around the B.A. and B.Sc. programs in Agricultural Studies. The limited evolution of these programs to meet industry needs and AIA accreditation is a long-standing problem that was not successfully addressed following the previous review. We agree that the focus should now be on more specialized degrees, so that the two Agricultural Studies programs should be suspended. The difficulty of college transfer students to obtain AIA accreditation also suggests that the post-diploma program should be suspended, especially considering recent college investments into four-year baccalaureate degrees. The B.Sc. in Agricultural Biotechnology is a program that leads to a P.Ag., leverages the AAFC connections in Lethbridge, and is very rigorous in the

scientific background necessary for careers in related fields. This could serve as the backbone of a high-quality program that we maintain as an internal pathway to graduate education. This program could be adjusted to align with agricultural industry needs that relate directly to faculty research expertise, or, alternatively, a related replacement program encompassing more breadth or adding a distinct stream of agricultural themes could be considered. The B.Sc. in Agricultural Biotechnology needs to add agriculture-specific content to course descriptions and we need to add seats in agricultural courses beyond Biotech that could become recommended courses, such as in irrigation, plant production, precision agriculture and livestock, especially with local relevance. Ongoing and improved assessment of specific areas of expertise could be supported by agriculture-related lab activity in the Science Commons, AWESB, Hepler Hall and our external connections to AAFC and industry need to be maintained and expanded. Finally, the program needs to be better advertised. It is not easy to even find the program, unless a student first carries out a search in Biological Sciences. Correcting this problem will be critical to limit the short- to medium-term impact on enrolment that will result from the suspension of four programs, while we allow current students to complete their programs.

We also recommend that greater awareness of the many Ag-related coop jobs is needed. These opportunities were noted to be plentiful overall, but most of these jobs are going to students who are not in our agriculture-related programs, which is not surprising considering that only 1% of students are in such programs. Presumably, many students with interest in Agriculture are taking other programs they perceive as leading to greater opportunity. It was also revealed that there should be a greater focus on securing coop opportunities in animal-related programs.

With baccalaureate programs at Lethbridge Polytechnic and our recommendation to focus on only one (for now) high quality undergraduate program at the University of Lethbridge, from the current five, this clearly raises the potential to provide opportunity for students to receive specialized courses from each institution wherever there are gaps at one institution. We encourage collaborative discussions among the two institutions.

The Self-Study committee also supported Concentrations with agriculture-related courses that could be suitable for several degree programs (e.g. Biological Sciences and presumably Geography & Environment and others) if the B.A. and B.Sc. programs are discontinued. This is a viable option. The question is whether a Concentration is sufficient preparation for graduate programming and enhanced employment opportunity in agriculture-related fields. The courses required for any Concentration would not need to be added as the courses would be serving the needs of Majors. Additional suggestions included stackable credentials and co-developed programming with Lethbridge Polytechnic. All these options should be considered as we streamline any undergraduate programming into accredited opportunities.

The Dhillon School of Business does not currently have academic strength in agriculture beyond a single faculty member with a research background in agricultural economics. With extremely limited budgets for the foreseeable future, the DSB will not be in a position to develop new Agricultural Business programming, but there could be a contribution or cross-listing of courses from this individual that could count toward the new agriculture programs outlined here if there is a business-related component, as demanded by industry.

(ii) Graduate Programming

As a CARU, the University of Lethbridge has a mandate that includes graduate programming, unlike most other institutions in the region and we have seen declining enrolments in undergraduate Agricultural Studies as accredited programs are developed elsewhere. The reviewers, thus, challenge us to consider whether it would be a benefit to divert a greater proportion of our teaching efforts toward graduate programming. A market analysis would need to be performed to assess demand for a course-based M.Sc. in Sustainable Agriculture (or related), and there would be a need for faculty engagement and support for such an initiative.

		The development of a course-based Master's in Sustainable Agriculture will require a study of domestic and international student demand. The program could be of interest to those working in the Canadian agricultural industries or graduating from the many undergraduate-related programs in the region and beyond. Anecdotally, we have met industry leaders in southern Alberta have indicated a need for workers with advanced skills in both plant science and agribusiness/agricultural economics. There might also be interesting synergies with a proposed Engineering program. International demand might also be very high, considering that faculty members regularly receive inquiries about graduate programming from highly qualified students trained internationally in agricultural technologies at the undergraduate level, but most cannot be taken on because of limited capacity to supervise thesis-based graduate students. A course-based M.Sc. would provide these students with an alternative. A careful market analysis would be needed to assess the balance of cost and projected tuition revenue of various models. There are some efficiencies that we could explore to help get a course-based Masters launched without committing to unsustainable, additional and long-term resources. Firstly, there are already cross-listed courses that might be relevant at the 4000-level, and we are starting a course-based Master's in Economics, for which there is a possibility of some shared resources, especially if some agricultural teaching expertise is diverted from the current B.A. and B.Sc. programs in Agricultural Studies. We could make prerequisites more accessible or the courses accessible to students admitted to the master's students. We might also suggest that the Individualized Multidisciplinary MSc (IMMSc) degree option could be utilized during a pilot program, allowing the program to get started. We are already investing considerable CFI funding toward agriculture-related research facilities, which perhaps could be used for laboratory activities for Master's students as well as faculty, graduate and postdoctoral research. The Faculty of Arts & Science would be interested in investigating the potential of such a program.
3.	*An inter- and cross disciplinary research and outreach hub could be formed with its own administrative support. The hub could support teaching and learning at the graduate level and could serve as a platform for undergraduate theses and independent studies research projects with an agricultural focus for students in science or business programs.*	The University needs an obvious 'front door' for agriculture research and teaching a the UofL. We generally agree with the Self-Study committee on the potential for such a hub. For the time being, a website showcasing options for agricultural study, research outcomes and student and alumni successes, with a Program Coordinator serving as a contact, is a good place to start. A Hub, as recommended and supported by the Self-Study committee, would seem highly appropriate once programmatic changes are made, but how that is funded and staffed will be a critical challenge. A department in Arts & Science is a possibility as well, but the current faculty members have duties directed toward other Departments, so Program Coordination and a website showcasing our opportunities and successes is likely the place to start. We agree with the Self-Study committee that tracking of alumni through involvement with External Relations would be valuable. We note that the only undergraduate program described as a success by the external reviewers is not well advertised. A hub of some description and even a landing website outlining the incredible research expertise and related program options would help with this. At present, the B.Sc. in Agricultural Biotechnology is not easily noticed by students who do not carry out a search specifically related to their interest in Biological Sciences.
4.	*A mapping exercise needs to be performed to understand what the institution is doing in agriculture now. There is a need to establish statistics on where graduates from the programs land following graduation. Also, there is a need to understand and be aware of what kind of agricultural research projects the university has and who are their partners.*	Refer to recommendation 3.
5.	*Business should continue to be a focus of agricultural programs. There may also be opportunity to partner with Lethbridge Polytechnic to provide support for their*	While the recommendation makes sense, the one faculty member in the Dhillon School of Business with a specialist agricultural background is in agricultural economics, not agricultural business and management. This is the fundamental issue DSB has with developing any agriculturally related programming. The DSB

	second-year agricultural business diploma. This type of program could focus on the best of economics/business, management and agriculture and could incorporate international universities or local businesses as internship hosts with either commodity, agriculture or food businesses involved.	is open to re-engaging with Lethbridge Polytechnic and perhaps creating an integrated agricultural business degree program, similar to the partnership in supply chain management developed with Bow Valley College in Calgary. However, an integrated program with the then Lethbridge College was at the root of the AGEM major created and launched in 2017/2018, which did not prove successful.
6.	*There is a need to start thinking about metrics by program, not just at the entire university level. The institution needs to engage in a mapping exercise to understand the resources committed to agriculture and identify what is done now and what could be done in future. The objective of this exercise is to understand how many resources would be freed if the ARPs were terminated, including advising. This needs to be a comprehensive exercise including lab spaces, TA resources, sessional instructors, and student advising.*	The potential establishment of a course-based Master's program and / or the improvement of an agriculture-related B.Sc. program would require analysis of how resources are presently allocated and how to redirect them toward the new model. In addition to the assessment of lab spaces, teaching assistant resources, sessional instructors and student advising, as recommended by the external reviewers, this would involve financial analysis, credit hour distributions, tuition revenue projections and evaluation of student survey results. Institutional Analysis, SEARS and our Directors of Curriculum will be able to provide most of this information.
7.	*There is the opportunity to highlight the link between science and biotech and eventually agriculture as an entry into the University of Calgary Veterinary Degree and to provide animal experience as co-op with vet practices or farms for animal handling.*	We fully agree with the Self-Study response that, while we will engage with the University of Calgary to ensure our students are aware of this excellent and popular program, the focus of our agriculture-related degree programs is not specifically tailored to preparing of students for veterinary programs, though we have recently added some livestock and animal health monitoring expertise. We are preparing our students for a very wide variety of opportunities, and this is but one example.
8.	*It is worth rethinking the currently offered programs to provide degrees focusing on subjects with limited offering elsewhere. We would suggest having the first two years common with a biology degree as they are, with the last two years focused on agriculture-related course work with a concentration in either sustainable plants or animals to produce ARPs.*	This suggestion is appreciated and is a viable alternative to consider as an alternative to the option of revamping the B.Sc. in Agricultural Biotechnology or replacing this with a one new, unstreamed program with broader goals (or even suspending all ARPs). Considering that some of the courses in the B.A. and B.Sc. in Agricultural Studies programs would need to be maintained for other degree programs, and we are considering a recommendation for a course-based Master's program in an agriculture-related field such as Sustainable Agriculture, we are not convinced that sufficient resources would be freed up for both streams, especially if we keep the B.Sc. in Agricultural Biotechnology or equivalent. As noted above, the Dhillon School of Business has extremely limited resources for engaging in further agricultural programming of any kind. Depending on how the engineering program evolves, or in conversations with the Polytechnic, the DSB may be able to contribute to a collaborative program, but there are no current plans to expand current focused expertise in Agriculture. This limits our capacity to support the excellent idea proposed by the Self-Study committee for stackable credentials, unless there is interest in allocating central funds toward positions facilitating the agribusiness / food management diploma portion of such a degree.
9.	*Forming a school or division of agriculture within the faculty of Arts and Science and Department of Biological Sciences would be useful and would serve to focus programming development efforts. Indigenous and EDIA perspectives are critical in program development, and program development needs to be looking at meeting the professional agrologist designation of Alberta Institute of Agrologists (AIA) and the ability to become certified crop advisors (CCA) similar to the system the University of Saskatchewan developed.*	We fully agree with the Self-Study Committee's well-considered response to the External Reviewer report as it pertains to Recommendation 9.
10.	*Industry sees the 2 + 2 with Lethbridge Polytechnical desirable in strengthening the polytechnic students, and the competencies from Lethbridge Polytechnic would go a long way to making University of Lethbridge*	We agree that there is potential in collaborative program development with Lethbridge Polytechnic. It is our understanding, however, that we have one Agricultural Biotechnology program that leads to P.Ag. designation. We could find some efficiencies, over and above the elimination of the other four programs

students eligible for professional designations. The industry sees much potential for success in an agri-tech program rather than what is offered at present. Food process engineers are needed, and maybe a sustainable agri-food engineer degree could address this gap in value-adding capacity in Alberta.	related to Agricultural Studies, that would allow for collaboration on accredited programming at the undergraduate level.
11. *The University has some way to go with re-establishing connections with the agriculture industry as the agriculture industry did not feel heard. Now that Lethbridge Polytechnic is graduating degree students, University of Lethbridge could focus on its graduate studies in agriculture or stackable certificates.*	We agree that we should place a greater emphasis on graduate programming, given our role as a CARU and the existence of quality programs at the undergraduate level at partner institutions. We also agree with the assessment on the importance of engaging with, listening and responding to industry concerns. Whether or not we go with one unstreamed or streamed B.Sc., a collaborative program with LP, with stackable credentials, or some combination of the above is a matter that we need to study. What is clear is that the B.A. and B.Sc. in Agricultural Studies is not satisfactorily serving student needs. As noted in previous responses, the Dhillon School of Business could explore the creation of an undergraduate post-diploma program in 'Agri-Business' targeting Polytechnic and other College diploma graduates completing an Agriculture Business diploma. As noted, this would essentially be like the collaboration with BVC in terms of supply chain management, where the majority of the agriculture specialisation was developed in the diploma component.
12. *Graduate studies programming would be bolstered by the close association of University research with Agriculture and Agrifood Canada (AAFC).*	We greatly value our extensive research collaborations with AAFC, the CFIA and other federal bodies involved in agriculture research. However, we could do a much better job of publicizing such collaboration through the establishment of a hub, which would also serve to help identify partners. Nearly every graduate student working on agriculture-related research projects has an external member from one of these bodies as part of their supervisory committee as well, but most of them are not carrying out this work within graduate programs identifiable as agricultural in nature.

Provost's Action Plan

Consulting the External Reviewer Recommendations, the Program Response, Deans Matt Letts, Kerry Godfrey, and Jackie Rice, the Academic Quality Assurance Committee made the following five (5) recommendations for action which the Program must report on in 1 and 3 years:

1. Steps will be taken before the December 2025 deadline to officially terminate the AGEM program.
2. The process to suspend the B.A. Agricultural Studies should be made early in 2026.
3. The Deans of the Faculty of Arts and Science and the Dhillon School of Business will coordinate with the Provost's Office, and together we will structure a process to build *one* focused undergraduate agriculture B.Sc. degree program (with the possibility of concentrations), to replace both the B.Sc. in Agricultural Studies and the B.Sc. in Agricultural Biotechnology. This work will be guided by the following;
    a. All interested Faculty members teaching or researching within agricultural studies (broadly, and across Faculties) will be invited to be part of the process of creating the new single B.Sc. in Agricultural Studies.
    b. The new single B.Sc. will endeavour to:
        i. meet the needs of stakeholders, including working to align with the requirements of the Alberta Institute of Agrologists.
        ii. reflect the currently available faculty resources and leverage teaching and research strengths, and existing capacity, across Departments and Faculties.
        iii. Have a clear and simplified student pathway to an agriculture B.Sc.

4. The Provost's Council in consultation with Deans of the Faculty of Arts and Science, Dhillon School of Business, and School of Graduate Studies to appoint a Director for Agriculture Related Programs and to form a Centre for Agricultural Excellence (name to be determined). This director will be responsible for:
    a. Implementing and coordinating the new single B.Sc.
    b. Initiating conversations with Polytechnics across the province around collaborative efforts such as shared degree programs.
    c. Communicating with industry and community stakeholders, and developing partnerships where applicable, including creating an advisory council comprised of these stakeholders.
    d. Exploring the potential for Agricultural concentrations as part of other degree programs (Economics, Geography & Environment, Biology, etc.).
    e. Advertising Agricultural Related Programs to current and potential students, including coordinating with the Advising and Coop Offices.

    * The Centre will also have a substantial research coordination focus, but those responsibilities will be articulated elsewhere.
5. Planning should begin for a course-based M.Sc. in Agriculture/Sustainable Agriculture, beginning with a market analysis of potential demand and assessment of faculty availability to support such a program.

The Academic Quality Assurance Committee is satisfied that the Agriculture Programs academic quality assurance review has followed the U of L's academic quality assurance process appropriately, and acknowledges the successful completion of the review.

Sincerely,

Dr. Lynn Kennedy
Chair, Academic Quality Assurance Committee
Associate Professor, Department of History and Religion

cc Michelle Helstein, PhD.
Provost & Vice-President (Academic)