

Progress Report on the Implementation of Recommendations from the External Review

The Department of Mathematics and Statistics has made substantial progress in addressing the recommendations from the Academic Unit Review (AUR). This report highlights the achievements to date, acknowledges the challenges faced, and outlines next steps in key priority areas.

1. Undergraduate Program Updates

- **Progress:**

- Efforts are underway to clearly define the core structure of undergraduate programs, ensuring consistency across all degrees (UG-1). Updates to the calendar entries are being finalized to reflect these improvements.
- A comprehensive review of cross-listed courses is in progress to harmonize titles and numbers across ASCS, MATH, and STAT offerings (UG-7). Implementation is expected in the next academic cycle.
- The Actuarial Science program has launched targeted promotional campaigns to attract students from communities of similar size to Regina that lack equivalent programs (UG-6, UG-9). Recruitment efforts are leveraging alumni networks and strategic outreach initiatives.

- **Challenges:**

- Merging the Combined Major in Statistics and Economics and the Applied Mathematics and Statistics program into a single Statistics degree with concentrations (UG-8) requires extensive consultation with students and stakeholders to ensure that the change aligns with their academic goals and preserves the programs' success.
- Designing a fourth-year undergraduate research course that integrates computational and project-based learning (UG-10, UG-12) is progressing. However, its implementation requires significant restructuring of existing undergraduate programs. The department is carefully assessing the potential impact and exploring strategies to mitigate any negative consequences.

2. Infrastructure for the Data Science Program

- **Progress:**
 - Proposals for a new computer lab and additional infrastructure to support the rapidly growing Data Science program (FN-1) are being developed. Initial discussions with the Dean of Science have been promising.
 - The hiring of a new lab instructor to support lab-based courses has been approved, and interviews are currently underway as of this report's release date.
- **Next Steps:**
 - Continue advocating for university support while strengthening external funding proposals, including applications to NSERC RTI and CFI programs (FN-2).
 - Finalize the hiring process for the lab instructor and promptly onboard the successful candidate to address immediate instructional needs.
 - Engage key stakeholders to ensure timely completion of infrastructure projects, including staffing and technological resources for lab courses.

3. Graduate Program Revisions and Expansion

- **Progress:**
 - The MSc course-based programs in Statistics and Mathematics have been revised to better align with industry trends and student needs (GR-2, GR-3).
 - A new MSc in Statistics (co-op) program has been introduced, providing students with valuable practical experience. The proposed MSc in Actuarial Science is advancing through the university's approval process.
 - Graduate entrance requirements have been expanded to include students with minor degrees in Mathematics or Statistics, broadening the applicant pool (GR-1).
- **Challenges:**

- Ensuring sustainable funding for graduate students remains a top priority (GR-7).

- **Next Steps:**

- Focus on successful implementation of the revised and new programs, including appointing dedicated Degree Supervisors for course-based MSc students (GR-9).
 - Strengthen recruitment efforts with an emphasis on revising program descriptions to attract students interested in applied and computational topics (GR-3, GR-4).
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4. Enhancing Department Visibility

- **Progress:**

- Improved signage at College West has increased the department's visibility for students and visitors (VS-1).
- Faculty members have been encouraged to take on leadership roles in university committees and to present their research in accessible formats, contributing to the department's engagement with the wider university community (VS-2).

- **Next Steps:**

- Continue enhancing departmental visibility through additional signage and branding efforts.
 - Promote faculty involvement in high-profile initiatives and community events to further elevate the department's profile within the university.
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5. Research and Graduate Student Support

- **Progress:**

- The department has strengthened its research profile through affiliation with the Fields Institute and is actively exploring collaborations with organizations such as the Perimeter Institute and Vector Institute (RS-4).
- The Statistics Consulting Center is expanding its outreach, with plans to involve co-op students and leverage MITACS funding to support its operations (RS-2).

- **Challenges:**

- Diversifying funding sources remains a critical need (RS-1). Efforts to secure infrastructure funding through NSERC RTI and CFI programs require careful planning and coordination.

- **Next Steps:**

- Build stronger collaborative opportunities within the university and with external partners (RS-3).
 - Develop strategies to secure sustainable funding for HQPs and expand access to external grants.
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6. Indigenization and Community Outreach

- **Progress:**

- Indigenous perspectives are being embedded into programs, and collaboration with the First Nations University is ongoing (RS-6).
- The department actively participates in a variety of outreach initiatives, including Women in STEM events and Faculty of Science learning lunches. Faculty regularly engage in Mathematics Outreach at schools and libraries, participate in Treaty 4 Days in Fort Qu'Appelle, and host the annual Canadian Kangaroo Mathematics Contest on campus. Additionally, faculty work closely with high school Mathematics Teachers to help prepare Grade 12 students for the transition to university.

- **Next Steps:**

- Strengthen partnerships with Indigenous communities and institutions to deepen engagement and support for Indigenous students.
 - Expand outreach efforts and mentorship programs tailored to Indigenous students.
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7. Staffing Enhancements

- **Progress:**

- A new Assistant Professor in Data Science has been hired with support from SGI, bolstering the department's expertise in this growing field.
- Co-teaching initiatives with Computer Science, Engineering, and Federated Colleges have been proposed to expand course offerings and strengthen cross-disciplinary collaboration (STF-4).

- **Challenges:**

- Balancing faculty workloads and ensuring that new hires align with the department's evolving needs require ongoing attention.

- **Next Steps:**

- Integrate the new Assistant Professor into strategic initiatives for the Data Science program and other collaborative opportunities.
- Pilot co-teaching models to address gaps in applied course offerings.
- Prioritize tenure-track hires in applied mathematics and applied statistics (STF-1, STF-2) to strengthen the department's interdisciplinary expertise. In the future, the department plans to explore hiring opportunities in emerging fields such as machine learning, data analytics, and computational mathematics to meet evolving academic and industry demands.

8. Conclusion and Future Directions

The Department of Mathematics and Statistics is fully committed to addressing the recommendations from the AUR and aligning its efforts with the broader mission of the University of Regina. Key next steps include:

- Regularly reviewing progress to ensure continuous improvement.
- Strengthening collaborations with faculty, students, and external partners.
- Expanding initiatives that promote excellence in research, teaching, and community engagement.

This report reflects the department's dedication to growth and its proactive approach to achieving excellence. Ongoing stakeholder feedback will be instrumental in guiding future initiatives.