PRESENTED BY: Susan Detmer; chair, academic programs committee

DATE OF MEETING: January 16, 2020

SUBJECT: Changes to graduate programs in the Biomedical Science programs

COUNCIL ACTION: For Information Only

SUMMARY:
At its December 18, 2019 meeting, the academic programs committee approved the following motions:

- That the Academic Programs Committee approve the addition of Anatomy, Physiology, and Pharmacology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.
- That the Academic Programs Committee approve the addition of Biochemistry, Microbiology, and Immunology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.
- That the Academic Programs Committee approve the deletion of Anatomy and Cell Biology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.
- That the Academic Programs Committee approve the deletion of Physiology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.
- That the Academic Programs Committee approve the deletion of Pharmacology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.
- That the Academic Programs Committee approve the deletion of Biochemistry as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.
- That the Academic Programs Committee approve the deletion of Microbiology and Immunology as a field of study for the Master of Science (M.Sc.) and Ph.D. degree programs, effective May 2020.

In 2018, the five biomedical sciences (BMSC) departments were merged to form two new departments: the Department of Anatomy, Physiology and Pharmacology, and the Department of Biochemistry, Microbiology and Immunology. With the departmental mergers, the College of Graduate and Postdoctoral Studies proposed
changes to the names of their M.Sc. and Ph.D. programs to align with the new structures.

The two new graduate programs in 1) Anatomy, Physiology and Pharmacology; and 2) Biochemistry, Microbiology, and Immunology will utilize existing course offerings. It is anticipated that the merger of the programs will increase interdisciplinary opportunities, will help create a more cohesive student body, and will encourage faculty cooperation.

With the creation of the merged programs, the existing programs in 1) Anatomy and Cell Biology; 2) Biochemistry; 3) Physiology; 4) Pharmacology; and 5) Microbiology and Immunology are deleted. Students currently in these programs will be permitted to complete their program or to transfer to the new program, but no new students will be accepted into the existing programs.

These proposals were reviewed by the Graduate Programs Committee of CGPS on September 30, 2019 and by the Executive Committee of CGPS on November 26, 2019.

APC appreciated the thorough review that these proposals received at the committees of CGPS and that the new programs will mirror the undergraduate offerings as well as the departmental structures.

ATTACHMENTS:
1. Program Merger/New Field of Study – Anatomy, Physiology and Pharmacology
2. Program Merger/New Field of Study – Biochemistry and Microbiology and Immunology
MEMORANDUM

To: Academic Programs Committee of University Council

Copy: Dr. John Howland, Department of Anatomy, Physiology and Pharmacology

From: Martha Smith, Associate Dean, CGPS

Date: December 11, 2019

Re: Program Merger – Anatomy, Physiology and Pharmacology

As a result of the Graduate Program Review process and strategic planning processes in the College of Medicine, the three independent departments of Anatomy & Cell Biology, Physiology, and Pharmacology were merged effective July 1, 2018. Merging the three independent graduate programs would provide more cohesive programming and enrich the experience for the graduate students.

The merger of the three programs would have all graduate students entering a new field of study “Anatomy, Physiology and Pharmacology”. Existing students would have the option to remain in their current program or transfer to the new field. The CGPS requests that APC approve the proposal effective May 1, 2020.

The Graduate Programs Committee first considered the proposal to merge the programs during the 2018/2019 academic year; however, it was determined that additional information was needed to respond to the Graduate Program Review process. The proposal to merge the three programs was approved by the Graduate Programs Committee on October 21, 2019. The proposal was subsequently approved by the Executive Committee of CGPS on November 25, 2019. Note that all recommendations by CGPS committees were accepted by the proponents and incorporated into the proposal as submitted.

Attached please find the full program proposal and supporting documents.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229
Memorandum

To: Academic Programs Committee (APC)
CC: Heather Heavin, Chair, Graduate Academic Affairs Committee, CGPS
From: Trever Crowe, Chair, Executive Committee, CGPS
Date: December 9, 2019
Re: Merger of Anatomy, Physiology and Pharmacology graduate programs.

On November 25, 2019, the Executive Committee (EC) of CGPS considered a recommendation from the Graduate Programs Committee (CGPS) to merge the Anatomy, Physiology and Pharmacology graduate programs.

There was extensive discussion at the Executive that included graduate program review outcomes directly impacting these graduate programs in which this proposal begins to address.

**Accepted Motion:** To recommend approval of the merged Anatomy, Physiology and Pharmacology graduate programs on the condition that corrections and clarifications be made to the policy manual. The committee recommends that the language on the comprehensive exam indicate that the exam should be completed within the first 2 years in program. *Misra/ McIntyre*

The accepted motion was the followed up by a second motion tasking the Dean, CGPS to ensure a process is clearly established in response to graduate program review (GPR) outcomes.

**Motion:** The EC tasks the CGPS Deans Office to establish a process to ensure that units adequately respond to recommendations from program reviews with a commitment to ensure programs are meeting expectations. *Heavin/Newton*

The attached appendix provides additional background for consideration. If you have any questions, please contact Dean Trever Crowe at trever.crowe@usask.ca or by phone at 966-5759.

/II
MEMORANDUM

To: Executive Committee of CGPS

Copy: Dr. John Howland, Graduate Chair, Anatomy, Physiology & Pharmacology

From: Graduate Programs Committee

Date: October 28, 2019

Re: Merger of Graduate Programs in Anatomy & Cell Biology, Physiology, and Pharmacology

On October 21, 2019, the Graduate Programs Committee considered a proposal to merge existing programs in the fields of 1) Anatomy & Cell Biology, 2) Physiology, and 3) Pharmacology. The program merger proposal had been considered by the committee during the 2018/2019 year; however, there had been some concern that the proponents had not sufficiently responded to the graduate program review recommendations. The program merger was being proposed following the merger of the three departments that had been effective July 1, 2018. Overall, merging the graduate programs seemed logical to provide more cohesive programming for the graduate students.

Existing students would have the option to remain in their existing program, or transfer to the new field of study. New students would be admitted to the new field of study.

A graduate student handbook had been provided in the proposal, and that document was helpful in describing programmatic requirements and expectations.

The proposal included indication of existing course offerings along with indication of intended offerings for the future. It was noted that the new courses suggested would require approval, and since they would be elective options, the course proposals could be approved independent of the program merger.

The Graduate Programs Committee was satisfied with the proposal, and the following motion was passed unanimously:

Motion: To recommend approval of the merged Anatomy, Physiology and Pharmacology graduate programs on the condition that corrections and clarifications be made to the policy manual as noted in the minutes. The committee recommends that the language on the
comprehensive exam indicate that the exam should be completed within the first 2 years in program. Labrecque/Tanaka CARRIED

Following the motion, the following corrections and clarifications were incorporated into the policies and procedures section of the proposal:

- Information on the qualifying and comprehensive exams was revised for consistency with CGPS policy language and to provide additional information to students. Consistent with the recommendation from the Graduate Programs Committee, comprehensive exam language was revised to suggest the exam should be completed within the second year of the program.
- Information regarding defence processes was revised to align with CGPS policy changes that had occurred during the last year.
- Clarified that the program would require all admitted students to receive funding. Funding could be obtained through a variety of sources including scholarship, supervisor's research grant, devolved allocations, etc.

Attached please find the proposal for the program merger/name change including a comprehensive response to previous program concerns, as well as a handbook indicative of program expectations.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229
Proposal for Academic or Curricular Change

PROPOSAL IDENTIFICATION

Title of proposal: Program Merger/New field of study – Anatomy, Physiology & Pharmacology

Degree(s): Master of Science, Doctor of Philosophy

Field(s) of Specialization: Anatomy, Physiology & Pharmacology

Level(s) of Concentration: N/A

Option(s): N/A

Degree College: N/A

Contact person(s) (name, telephone, fax, e-mail):
Martha Smith, Acting Associate Dean, CGPS, 306-966-2229; kelly.clement@usask.ca

Proposed date of implementation: May 1, 2020

Proposal Document

Please provide information which covers the following sub topics. The length and detail should reflect the scale or importance of the program or revision. Documents prepared for your college may be used. Please expand this document as needed to embrace all your information.

1. Academic justification:
   a. Describe why the program would be a useful addition to the university, from an academic programming perspective.
   Merging the graduate programs was suggested in the Graduate Program Review process.
   Merging the three programs to a single program is expected to increase and improve opportunities for course delivery without duplication.
   With the rise in interdisciplinary research, the increased size and scope of the student population is expected to enrich the culture.
b. Giving consideration to strategic objectives, specify how the new program fits the university signature areas and/or integrated plan areas, and/or the college/school, and/or department plans.
The three independent departments were merged effective July 1, 2018. Merging the graduate programming was part of the planning process.

c. Is there a particular student demographic this program is targeted towards and, if so, what is that target? (e.g., Aboriginal, mature, international, returning)
There is no targeted demographic; however, discussions are underway regarding increasing indigenous student enrolment in graduate programming in the department.

d. What are the most similar competing programs in Saskatchewan, and in Canada? How is this program different?
Similar programming exists at almost all U15 institutions. Shared facilities, seminars, etc. provides increased opportunities for interdisciplinary work and novel research.

2. Admissions
a. What are the admissions requirements of this program?
Standard CGPS admission standards for Master’s and PhD programs.

3. Description of the program
a. What are the curricular objectives, and how are these accomplished?
Master’s students will complete coursework and other scholarly activities and complete the program by writing and defending a thesis to contribute knowledge to their discipline. Upon completion of a master’s program, graduates will be prepared for doctoral study or employment opportunities contributing knowledge to the discipline.

Doctoral students will complete coursework along with oral and/or comprehensive exams and will complete the program by writing and defending a dissertation that provides an original contribution to knowledge in the discipline. Upon completion of a doctoral program, graduates will be prepared for an academic or applied career in the discipline.

b. Describe the modes of delivery, experiential learning opportunities, and general teaching philosophy relevant to the programming. Where appropriate, include information about whether this program is being delivered in a distributed format.
The program will be delivered in a traditional format. Modular condensed class options will be introduced. Cotutelle programming is possible.

c. Provide an overview of the curriculum mapping.
Master’s students complete coursework, lab/field work, thesis proposal, thesis writing, and then oral thesis defence.

Doctoral students complete coursework and qualifying exams (where applicable), comprehensive exams, lab/field work, dissertation proposal, and then oral dissertation defence.

d. Identify where the opportunities for synthesis, analysis, application, critical thinking, problem solving are, and other relevant identifiers.
As these are research-based programs, those opportunities are woven throughout the program requirements.

e. **Explain the comprehensive breadth of the program.**
   Master’s graduates will be able to demonstrate mastery of a specific sub-field of the discipline, while PhD graduates will have made a novel contribution to a specific sub-field and demonstrated mastery of cognate sub-fields.

f. **Referring to the university “Learning Charter”, explain how the 5 learning goals are addressed, and what degree attributes and skills will be acquired by graduates of the program.**
   This question does not align with the current version of the learning charter.

g. **Describe how students can enter this program from other programs (program transferability).**
   Standard regulations for CGPS student program transfers would be applicable.

h. **Specify the criteria that will be used to evaluate whether the program is a success within a timeframe clearly specified by the proponents in the proposal.**
   The new program will be subject to program review processes managed through institutional planning and assessment.

i. **If applicable, is accreditation or certification available, and if so how will the program meet professional standard criteria. Specify in the budget below any costs that may be associated.**
   N/A

4. **Consultation**
   The program merger is a result of the Graduate Program Review process and strategic planning processes in the College of Medicine.
<table>
<thead>
<tr>
<th>Master of Science (MSc)</th>
<th>Existing Anatomy &amp; Cell Biology Programs</th>
<th>Existing Pharmacology Programs</th>
<th>Existing Physiology Programs/Proposed requirements for Anatomy, Physiology, and Pharmacology programs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students must maintain continuous registration in the 994 course.</td>
<td>Students must maintain continuous registration in PCOL 994.0.</td>
<td>Students must maintain continuous registration in the 994 course.</td>
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<td>• a minimum of 9 credit units</td>
<td>• a minimum of 9 credit units at the 800-level</td>
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<td>• ACB 990.0</td>
<td>• PCOL 990.0</td>
<td>• PHSI APPY 990.0</td>
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<td>• ACB 994.0</td>
<td>• PCOL 994.0</td>
<td>• PHSI APPY 994.0</td>
</tr>
<tr>
<td></td>
<td>• thesis defense</td>
<td>• Oral Comprehensive Exam¹</td>
<td>• Thesis Defence</td>
</tr>
</tbody>
</table>

¹ Oral comprehensive exams are not normally required in master’s level programs
² In a master’s program with less than 12 cu of minimum coursework required, all courses must be graduate (800) level
### Doctor of Philosophy (PhD) with earned Master’s degree

**Existing Anatomy & Cell Biology Programs**
- Students must maintain continuous registration in the 996 course.
  - GPS 960.0
  - GPS 961.0 if research involves human subjects
  - GPS 962.0 if research involves animal subjects
  - Minimum of 3 credit units (if M.Sc. already completed) otherwise 12 credit units
  - ACB 990.0
  - ACB 996.0
  - GPS 988.0 (if required)\(^4\)
  - Thesis defense
  - Comprehensive examination

**Existing Pharmacology Programs**
- Students must maintain continuous registration in PCOL 996.0
  - GPS 960.0
  - GPS 961.0 if research involves human subjects
  - GPS 962.0 if research involves animal subjects
  - Minimum of 3 credit units
  - PCOL 990.0
  - PCOL 996.0
  - Oral Comprehensive Exam

**Existing Physiology Programs**
- Students must maintain continuous registration in the 996 course.
  - GPS 960.0
  - GPS 961.0 if research involves human subjects
  - GPS 962.0 if research involves animal subjects
  - Minimum of 3 credit units
  - PHSI APPY 990.0
  - PHSI APPY 996.0
  - Qualifying Exam (may be waived if student successfully orally defended master’s thesis in research area)
  - Comprehensive Exam
  - Thesis Defence

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\(^3\) Master’s degree is required for admission; existing language regarding 12 cu is unnecessary

\(^4\) Outdated. Previously 988 was the animal ethics course that is currently GPS 962.
<table>
<thead>
<tr>
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<th>Existing Anatomy &amp; Cell Biology Programs</th>
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</tr>
</thead>
</table>
| **Direct-entry PhD**| N/A                                     | Students must maintain continuous registration in the 996 course.  
• At least 9 credit units of course work at the graduate level must be successfully completed in the first year of the program.  
• Within the first year of the program, successfully complete a Ph.D. Qualifying Examination that is at least as rigorous as the defence for a Master’s thesis in the program area.  
• GPS 960.0  
• GPS 961.0 if research involves human subjects  
• GPS 962.0 if research involves animal subjects  
• A minimum of 12 credit units at the 800-level  
• PCOL 990.0  
• PCOL 996.0  
• a comprehensive examination  
• Write and successfully defend a thesis based on original investigation. | Students must maintain continuous registration in **PHSI APPY 996.0**.  
• GPS 960.0  
• GPS 961.0 if research involves human subjects  
• GPS 962.0 if research involves animal subjects  
• A minimum of 9 credit units at the 800-level  
• **PHSI APPY 990.0**  
• **PHSI APPY** qualifying exam  
• comprehensive exam  
• thesis defence |

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5 CGPS maintains **minimum** programmatic requirements. Individual graduate programs may include requirements in excess of the minimum requirements listed.
<table>
<thead>
<tr>
<th>Transfer from MSc to PhD</th>
<th>Existing Anatomy &amp; Cell Biology Programs</th>
<th>Existing Pharmacology Programs</th>
<th>Existing Physiology Programs/Proposed requirements for Anatomy, Physiology, and Pharmacology programs</th>
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<tr>
<td>• a minimum of 12 credit units of 800-level coursework</td>
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<td>• a minimum of 12 credit units of 800-level coursework</td>
<td><strong>9 12 credit units at the 800-level, including relevant credit units taken before transfer</strong></td>
</tr>
<tr>
<td>• ACB 990.0</td>
<td>• PCOL 990.0</td>
<td>• PCOL 990.0</td>
<td>• PHSI 990.0</td>
</tr>
<tr>
<td>• ACB 996</td>
<td>• PCOL 996.0</td>
<td>• Oral Qualifying Exam$^6$</td>
<td>• PHSI 996.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Oral Comprehensive Exam</td>
<td>• Qualifying examination prior to transfer from M.Sc. to Ph.D</td>
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<tr>
<td></td>
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<td>• Ph.D. Comprehensive Exam</td>
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<tr>
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<td></td>
<td></td>
<td>• Thesis Defence</td>
</tr>
</tbody>
</table>

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$^6$ Qualifying exam required PRIOR to transfer

$^7$ A minimum of 9 credit units must be completed to be eligible for transfer
Program(s) to be deleted:  The fields of 1) Anatomy and Cell Biology, 2) Physiology, and 3) Pharmacology on the Master of Science and Doctor of Philosophy degree programs

Effective date of termination:  May 2020.  Students already enrolled will be permitted to complete their programs

1. List reasons for termination and describe the background leading to this decision.

2. Technical information.
   2.1 Courses offered in the program and faculty resources required for these courses.  All resources will be redirected to the new combined APPY graduate programs.
   2.2 Other resources (staff, technology, physical resources, etc) used for this program.  All resources will be redirected to the new combined APPY graduate programs.
   2.3 Courses to be deleted, if any.  Courses to be relabeled.  The individual 99X courses will be replaced with APPY 99X courses.
   2.4 Number of students presently enrolled.
   2.5 Number of students enrolled and graduated over the last five years.

3. Impact of the termination.
   Internal
   3.1 What if any impact will this termination have on undergraduate and graduate students?  How will they be advised to complete their programs?  Program mergers at the undergraduate level have already been approved.  The combined program is anticipated to be an improvement over the three independent programs.  Current students will have a choice to transfer to the new program or complete the program under the previous field of study.
   3.2 What impact will this termination have on faculty and teaching assignments?  Combining the programs is anticipated to result in better utilization of teaching resources.
   3.3 Will this termination affect other programs, departments or colleges?  No
   3.4 If courses are also to be deleted, will these deletions affect any other programs?  N/A
3.5 Is it likely, or appropriate, that another department or college will develop a program to replace this one?

No. Three independent programs are being replaced by one cohesive program. Other units will not be impacted.

3.6 Is it likely, or appropriate, that another department or college will develop courses to replace the ones deleted?

N/A

3.7 Describe any impact on research projects.

N/A

3.8 Will this deletion affect resource areas such as library resources, physical facilities, and information technology?

Changes to physical facilities for the combined department are already in place to support the new combined program replacing the program deletions.

3.9 Describe the budgetary implications of this deletion.

While there are some initial in-kind contributions for system related work, overall budget implications would be negligible.

External

3.10 Describe any external impact (e.g. university reputation, accreditation, other institutions, high schools, community organizations, professional bodies).

N/A

3.11 Is it likely or appropriate that another educational institution will offer this program if it is deleted at the University of Saskatchewan?

N/A

Other

3.12 Are there any other relevant impacts or considerations?

3.13 Please provide any statements or opinions received about this termination.

(Optional)

4. Additional information. Programs which have not undergone recent formal reviews should provide additional relevant information about quality, demand, efficiency, unique features, and relevance to the province.
Request for Change of Name

This Request form and attachments will be the basis for decision-making about this change.

Submitted by: John Howland Date: October 1, 2019

College: Medicine

College approval date: Documents have been submitted to College of Medicine Faculty Council for review.

Proposed effective date of the change: May 1, 2020

1. Proposed change of name

<table>
<thead>
<tr>
<th>From:</th>
<th>To:</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>CGPS</td>
</tr>
<tr>
<td>Department</td>
<td>no change</td>
</tr>
<tr>
<td>Program name</td>
<td>Anatomy, Physiology, and Pharmacology</td>
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<tr>
<td></td>
<td>no change</td>
</tr>
<tr>
<td>Degree name</td>
<td>M.Sc., Ph.D.</td>
</tr>
<tr>
<td>Name of Field of Specialization (major, minor, concentration, etc)</td>
<td>Anatomy and Cell Biology (1), Pharmacology (2), Physiology (3)</td>
</tr>
<tr>
<td></td>
<td>Anatomy, Physiology, and Pharmacology (1)</td>
</tr>
<tr>
<td>Course label (alphabetic)</td>
<td>ACB, PCOL, PHSI</td>
</tr>
<tr>
<td>Building</td>
<td>no change</td>
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<tr>
<td>Street</td>
<td>107 Wiggins Rd</td>
</tr>
<tr>
<td>Other</td>
<td>no change</td>
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</tbody>
</table>
2. Documentation

Rationale: Provide a rationale for the change and describe the background leading to this decision.

On July 1, 2018, the departments of Anatomy and Cell Biology, Physiology, and Pharmacology merged to become Anatomy, Physiology, and Pharmacology (APP). Before the merger, the three departments each had an existing graduate program, all three of which remain in place today. In the winter of 2018, an external review of the three ‘legacy’ graduate programs was conducted and a number of shortcomings of the programs were identified. These included deficiencies in the program objectives and curriculum, program enrolment and student funding, student outcomes, and administration (see the appendix ‘Response to Graduate Program External Review’ for more details). Discussions held in APP graduate committee and department meetings over the past 15 months have revealed that faculty acknowledge many of these deficiencies and show considerable enthusiasm for correcting them. The information in this package summarizes efforts the APP department has already made and also plan to make to improve graduate programming in the department.

The present request relates to merging the three legacy programs into one, which was the main option suggested in the external review for improving graduate programs in the department. There is strong support from faculty for merging the graduate programs for a number of reasons including:

- A larger graduate program would enable the APP department to offer a wider slate of graduate courses without duplication.
- The student culture of a larger, single department will be stronger than three separate departments.
- Maintaining the discipline-specific departments is not necessary as interdisciplinary research in biomedical sciences is more widespread than in the past.
- The budget for the legacy programs comes from the single APP budget. It would be considerably simpler if one graduate program was managed as the resources could be best allocated to benefit the most students.

Since our merger, the APP department has undertaken a number of initiatives to enrich graduate programming in the department, most of which are in direct response to the suggestions of the external review. Most of these initiatives are designed with a single graduate program in mind. These include:

1. Formation of a single APP graduate committee that oversees operation of the three graduate programs in our department (ACB, Pharmacology, and Physiology). While three legacy graduate chairs are still formally in place (Brian Eames – ACB; Kash Desai – Pharmacology; John Howland – Physiology), all decisions are vetted at the level of the APP graduate committee with a single chair (Howland).

2. We have compiled a point-by-point response to the external review of our graduate programs (see appended document). We believe that we have addressed the most substantive criticisms of our legacy programs with changes that have been/will be implemented during the 2018-2019, 2019-2020, and 2020-2021 academic years.

3. We developed a common graduate student handbook for the 3 programs (appended). In the handbook, we detailed the harmonized requirements and policies among the three existing programs (course requirements, comprehensive exam requirements, minimum stipend for MSc and PhD programs).

4. We developed a common 990 graduate seminar for the 3 programs (syllabus appended). It has been conducted in this manner last year and this year. Feedback obtained from students and faculty suggest that holding this common seminar has increased collegiality and interaction among the streams.
5. We have offered substantial slate of graduate courses this academic year and have plans to implement a series of 1 c.u. courses next year (see appendix ‘Response to External Graduate Program Review’). Our vision is to offer ‘modular’ courses in a manner similar to that which is in place in the Chemistry Department.

6. A signed student-supervisor agreement is required for any student starting after May 1, 2019 (see appended graduate student handbook).

**Impact of the change:** Please describe any potential impact of this change, including any of the following areas if relevant.

Graduate students enrolling in the new merged APP graduate program will benefit from the increase in course offerings, clearer statement of program requirements and expectations, more active culture, and increase in faculty complement of the APP department. Within the APP department, efficiencies in administration, course offerings, and financial issues identified in the previous section will be felt. The APP graduate committee perceives minimal changes to other units. Some additional notes are included below under each heading.

- **Impact on students:** Students already registered in one of the legacy programs will have the option to enter the new program or remain in the program in which they are currently enrolled. New, incoming students will enter the single APP graduate program. We expect the impact on existing students to be minimal as the general degree requirements for the three legacy programs are almost identical. The single merged graduate student handbook will be circulated to new students entering the program.

- **Impact on faculty:** Efforts will be made to advertise and promote the new program. Thus, faculty will see benefit in increased student applications and a stronger identity and culture of the program in the College and at the University. Faculty will also be expected to see larger enrolments in their graduate courses.

- **Impact on staff:** Impact on staff will be minimal as program requirements and numbers of students are unlikely to change dramatically.

- **Impact on alumni:** There will be no effect on alumni as the legacy program names and history are still captured in the new name. Increased efforts to engage past alumni and keep in contact with future alumni are being made (see appended Exit Interview).

- **Effect on other programs, departments, colleges, centres:** As the three legacy programs already exist, there will be minimal effect on other units.

- **Impact on university-wide systems (e.g. SiRIUS, UniFi, PAWS, U-Friend, Library, About US, etc.):** No change other than the administrative work required to update the systems and program of student enrolment.

- **Resource areas such as library resources, physical facilities, and information technology:** No effect as student needs will remain the same as if there were the three legacy programs operating.

- **External impact (e.g. reputation, accreditation, other institutions, high schools, community organizations, professional bodies):** In the future, it is our hope that a larger and more vibrant program will have a greater impact on external bodies than if the smaller legacy programs had remained intact. We believe that the diversity of research done in the larger program will attract more attention in Saskatoon and beyond.

**Please attach any statements or opinions received about this change.**
No formal statements of opinions have been received about this change. At a meeting the APP graduate committee held with the Dean of CGPS on August 27, 2019, Dean Crowe expressed his enthusiasm for merging the graduate programs and encouraged us to submit documentation supporting a name change to the CGPS during the fall, 2019. All APP faculty also support this name change request.

**Costs:** Please describe whether this change will result in any additional costs for the university (ie, repainting signs, technical changes in SiRIUS, PAWS, financial services, etc.).

Costs to the University will be minimal. Some changes to the course naming and course builds will be required. A new and improved website will also be needed but the costs for that will come from the department and college budgets.

**Consultation:** Please describe any consultation undertaken with other university offices, such as Student and Enrolment Services, Institutional Strategy and Analytics, Institutional Planning and Assessment, Financial Services, Facilities Management, Office of the University Secretary, Information Technology Services, etc. Please attach any memos or emails received about this consultation.

None attached. Discussions with the Dean of CGPS, Heather Lukey, and Kelly Clement were positive in this regard.

3. **Review and Approval Authority**

All changes of names for academic entities must be requested by the responsible college, following internal approval by its own approval procedures.

After submission of the Request by the College, the following approval procedures are used, and must be initiated by the College:

- **Changes of course labels** are approved by the Registrar in consultation with the college offering the courses. Any disputes arising over course label changes will be referred to the Academic Programs Committee for resolution. Course label changes are to be distributed for information through the Course Challenge system.
- **Changes of names for colleges and departments** are approved by University Council (following recommendation by the Planning & Priorities Committee) and by the Board of Governors, if the name is honorific.
- **Changes of names for degrees or a degree-level programs** are approved by University Council.
- **Changes of names for fields of specialization** are approved by the Academic Programs Committee of Council.
- **Changes of names for buildings, streets and other physical entities** are approved by the Board of Governors (following recommendation by the Naming Committee).

If you have any questions about this form or these procedures, please contact the Office of the University Secretary or email university.secretary@usask.ca.
Response to Graduate Program External Review (Winter, 2018)

Prepared by the APP Graduate Committee (October, 2019)

Chair: John G. Howland

Members: Stan Bardal, Lane Bekar, Julia Boughner, Veronica Campanucci, Kash Desai, Brian Eames, Helen Nichol, Juan Ianowski

Student members: Raphela Grecco Machado, Andrew Roebuck, Caitlin Wotton

Preamble:

Since merging of the three Departments into Anatomy, Physiology, and Pharmacology (APP) on July 1st 2018, a new APP graduate committee was formed that includes three faculty and one graduate student from each of the three legacy graduate programs (12 members in total). The committee has met every 1-2 months throughout the 2018-19 academic year and has both planned and instituted many changes to existing programs in an effort to: 1) ease a merger into a single APP graduate program; and 2) address deficiencies outlined in the Graduate Programs Review. The program review evaluated programs in six categories, in four of which our graduate programs did not meet the standards for a quality graduate program or there was insufficient data to evaluate. The weaknesses highlighted in each category are summarized below for reference, followed by a point-by-point discussion of changes we have made (or plan to make) to address these deficiencies. In addition, the external review offered two alternative suggestions for envisioning graduate training in the department. Both suggestions involved some effort to identify ‘graduate streams’ or areas of concentration within the graduate program. We are working toward these suggestions in a number of ways including the formation of new course modules which will help to define future streams. In addition, we will have 5 new tenure track faculty in the department within the next 2 years (2 of the 5 have already started). Therefore, we believe that these new faculty will play major roles in defining the future of graduate programming in the department including new streams. As a result of these changes, we have not identified any specific streams at this time. Rather, we are working toward a unifying the three existing ‘legacy’ graduate programs at this time.

From the External Review Report:

1. **Program Objectives and Curriculum** (Does not meet standards)
   a) MSc/PhD program descriptions do not clearly identify/differentiate program objectives.
   b) Student learning outcomes are not adequately or specifically identified.
   c) Lack of student handbook in two programs related to confusion among student expectations.
   d) Insufficient number of courses offered, and consistently scheduled, that highlight faculty expertise.
   e) No indication of any course or program evaluation by students in the program.

2. **Program Enrolment and Student Funding** (Does not meet standards)
   a) Funding packages do not cover minimum period of time in program.
   b) Enrolment is low and decreasing.
c) Low number of PhD students limit project complexity and thus limit contributions to faculty research.
d) Eligible students are not consistently applying for scholarships.
e) Little recruiting effort and poor on-line information and resources for potential graduate students.

3. **Student Outcomes** (insufficient data)
   a) Graduate students are not publishing peer-reviewed journal articles in great numbers.
   b) Emphasis on MSc programs (including BSc/MSc) result in limited opportunities to publish.
   c) Program completion times are long, raising concern about differential standards/requirements.

4. **Learning Environment** (meets standards)

5. **Faculty Profile** (meets standards)

6. **Administration** (Does not meet standards)
   a) No evidence of coordinated graduate student recruitment efforts. Recruitment is targeted towards the BSc/MSc program. Number of international students is low.
   b) No evidence of forward planning for program advancement/improvement (“where are we now?” and “where are we going?”)

**Point-by-point response:**

1a-c) Upon review of several graduate handbooks and information across campus (Anatomy & Cell Biology, Physiology, Veterinary Biomedical Sciences, College of Pharmacy and Nutrition), a new graduate student handbook for the APP graduate program has been created that clearly outlines and differentiates objectives and learning outcomes of both the MSc and PhD programs. This handbook outlines all timelines as well as student, supervisor, and advisory committee roles/expectations. A student/supervisor agreement form is also contained within this document as an appendix and is required for new students beginning a program after May 1, 2019. This handbook is sent to all (in-coming and current) graduate students each year in September and serves as the backbone of the programs to ensure consistency and reduce confusion surrounding expectations and timelines.

1d) For the 2019-20 academic year, 6 graduate courses are being offered by APP faculty (see list below). In addition, faculty commitments for the creation of 10 new single credit unit modules for 2020-21 academic year will further enhance student choice in graduate course selections.

**2019-20 course offerings:**
- ACB 801.6 (Gross Anatomy, Cooper)
- ACB 821.3 (Advanced Seminar in Developmental Biology, Boughner and Eames)
- ACB 824.3 (Current Topics in Myelinating Glia, Verge)
- ACB XXX.3 (Comparative Vertebrate Histology, Popescu)
- PCOL 850.6 (Graduate Pharmacology, Desai)
- PHSI 860.3 (Advanced Seminar in Neuroscience, Howland)

**2020-21 course offerings:**
- One-credit modules (committed):
  - Stan Bardal: Recent Advances in Drug Design
- Stan Bardal/Kash Desai/Lixin Liu: Advances in Cardiorespiratory Pharmacology
- Lane Bekar: Understanding Synaptic Electrophysiology
- Veronica Campanucci: Ion Channels and Receptors in Human Diseases
- Jen Chlan: Neuroanatomy
- Kash Desai: Role of Gastrotransmitters in the Cardiovascular System
- Brian Eames: Skeletal Cell and Developmental Biology
- John Howland: Systems Neuroscience I
- Juan Ianowski: Regulation and Coordination of Ion Channels, Transporters, and Pumps
- Val Verge: Basics of Cell Signaling in Neurobiology

1e) All students will be asked to complete course evaluations prior to submission of final grades to graduate studies. All students will be asked to evaluate the graduate program as part of a check list for completion of program requirements to be submitted with final thesis to graduate studies (see appended Exit Interview document).

2a) We have adopted a minimum funding model for all students in the APP graduate programs ($18,000/year for 2 years for the M.Sc.; $21,000/year for 4 years for the PhD).

2b,c) Despite the fact that the number of APP faculty taking on graduate students has been decreasing, the total student numbers within the three programs have remained consistent at around 40 for the past 5 years. It is true that the bulk of these are in the BSc/MSc and MSc programs. We hope the planned addition of the new one-credit module regarding careers in science will help show the students the value of obtaining a PhD and increase our PhD numbers. In addition, the hiring of new faculty (2 hires completed, 3 more expected in the near future) should increase the total number of students in our programs.

2d) Confusion surrounding scholarships will be reduced with the addition of a list of scholarships with typical deadlines as an appendix to our newly created Graduate Student Handbook (needs to be created). David Cooper, the Assistant Dean of Graduate Studies in the College of Medicine, has also worked to harmonize graduate scholarship applications with the College. However, it is really up to the Supervisors to ensure their students are funded to the minimum levels set out in the handbook. The required Student/Supervisor agreement at the outset of program study will help ensure these minimum funding levels are achieved and maintained.

2e) The first step required to improve recruiting is to overhaul the new APP program on-line information and resources. The College of Medicine has developed a new departmental website, which we will continue to update to provide the best information to prospective students. Unfortunately, we don’t have control over our departmental website.

3a) We have compiled a list of peer-reviewed publications for all graduate students who have graduated from our legacy programs over the past 6 years (2014 to the present). During this time, 60 students have graduated from our programs (38 MSc; 22 PhD). These students contributed 160 peer-reviewed publications that could be indexed on PubMed. Publications per student averaged 2.2/MSc student (82 papers) and 3.5/PhD student (78 papers).

3b) Addressed in 2c above.

3c) Addressed in 1a-c above. The new handbook with clearly defined timelines and expectations of advisory committees will help ensure timely completion going forward.
6a) Addressed 2 above.

6b) As outlined in 1d above, course development has the largest impact on where we are going. Creation of the one-credit module format greatly increases the flexibility within the different streams and program in general.

6) A general comment regarding administrative matters: we have been fortunate this past year to have a single graduate administrator for the three legacy programs which has made streamlining our programs considerably easier and more efficient.
Preamble. The Dept of APP is continuously striving to meaningfully improve our graduate program’s efficacy in teaching and training our MSc and PhD students in scientific research and communication. One the most effective ways for our Grad Program to improve is to hear and thus have the opportunity to act upon constructive critiques from students who have recently journeyed through our program.

Collecting feedback, positive and negative, is the aim of this exit interview. You are not obliged to complete this form, but it would really help us if you accepted our invitation to do so.

Disclaimer: Completing this form will in no way affect your capacity to graduate from our program. All responses will be collated, anonymized and held by the Dept. of APP Graduate Program Administrator. Anonymized feedback will be shared and used within the Dept. of APP only.

Thanks in advance for your input!

Reflecting on your time in-program, including grad coursework, instructional training (e.g., T.A.’ing), hands-on research experience, mentoring in data collection and analysis, research article publication, thesis writing, and other skill development, as well as the administration of the grad program at the level of APP and at the level of the CGPS, what would you suggest that the APP Graduate Program:

(Please feel free to list more than one action item per category. It would be extra helpful if you would also share the reasoning behind your recommendations.)

STOP doing immediately?

START doing immediately?

CONTINUE doing?
Dear Recent Graduate of Anatomy, Physiology & Pharmacology,

CONGRATULATIONS on completing your graduate program of study in our department!

Keeping in touch with Alumni helps us to develop a more enriching, effective graduate program. This includes inviting our Alumni to come back and provide career advice to students; as well as helping us to understand the types of jobs and careers that our Alumni pursue and succeed in.

To that end, do we have your permission to contact you in future? Please circle your preference:

YES       NO

If “YES” (thank you!), then please provide your preferred means of contact and contact details below:

Email ___________________________________________________________

Phone (_____) __________________________

Mailing address:

Street/house or apt #: ____________________________________________

City: _______________ Province/State: _______________ Postal/Zip code: ________

Country: __________________________

Other contact info (including social media accounts) __________________________

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Policies and Procedures

Graduate Program in

Anatomy, Physiology, and Pharmacology

University of Saskatchewan
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1. Introduction

Welcome to graduate studies in the Department of Anatomy, Physiology and Pharmacology!

The purpose of this handbook is to provide you with basic information on the services available to you in your graduate program, as well as the duties and requirements that you will need to fulfill to complete your graduate degree in the Department of Anatomy, Physiology and Pharmacology. The Department offers opportunities to transition BSc. Hon. work into an MSc, along with regular MSc and PhD graduate programs. The Department has faculty and students with diverse research interests in neuroscience as well as cardiovascular, metabolic, developmental and respiratory sciences. You are expected to gain a detailed understanding of your area of research. Our graduate program consists of independent research as well as didactic work involving academic courses and reading of relevant literature. The didactic component is intended to provide a knowledge framework upon which your research is based. Nevertheless, your efforts in research training and preparation in your area of specialization are of paramount importance. In addition, every effort is made in this department to prepare you to teach and communicate scientific information.

The departmental Graduate Program Committee develops policy and administers the graduate program. Immediate oversight for each student is provided by a faculty Supervisor, and a faculty Advisory Committee. Direct financial support to graduate students is derived from a variety of sources. All aspects of the program, including conferral of degrees, are ultimately governed by the College of Graduate and Postdoctoral Studies, which sets or approves the policies and procedures that departments follow. The Policies and Procedures Manual of the College of Graduate and Postdoctoral Studies can be found at:


2. How do I apply for graduate studies at the University of Saskatchewan?

There are three potential graduate training programs within the greater Department of Anatomy, Physiology and Pharmacology graduate program:

1. **Combined Bachelor of Science/Master of Science (B.Sc./MSc):** This is a project- and thesis-based program only offered to outstanding students enrolled in an APP undergraduate honours program. Students should inform their supervisors early in their program (first term) of their interest in continuing into the B.Sc./MSc Program. Admissions will be reviewed on a case-by-case basis by the Graduate Committee based on academic performance. Students must be admitted to the graduate program (and submit a program of studies) by June 1st. This combined program allows students to continue their undergraduate research project and fulfill additional requirements to obtain an MSc. A strict timeline is expected to not exceed 12-15 months immediately following BSc graduation.

2. **Master of Science (MSc):** This is a project- and thesis-based program offered to students holding a four-year degree from a recognized university in an academic discipline relevant to the proposed field of study. The expected length of the program is 2 years.

3. **Doctor of Philosophy (PhD):** This is a project- and thesis-based program offered to students holding a Master’s degree, or equivalent, from a recognized university in an academic discipline relevant to the proposed field of study. The expected length of the program is 4 years.

Before applying for admission to graduate studies, prospective graduate students must first contact individual faculty members with research interests compatible with their own, to determine if that faculty member is willing to supervise the student. Information about the research interests of departmental faculty can be obtained from the Department web site (http://medicine.usask.ca/department/schools-divisions/biomedical.php). When you contact your prospective supervisor, include your career goals, your academic credentials, and curriculum vitae. Once a supervisor has been identified and they agree to supervise your graduate program, you should access the
website of the College of Graduate Studies and Postdoctoral Studies (CGPS) (http://www.usask.ca/cgps/) where complete information on requirements and procedures for admission are available. Those International students who must meet English Proficiency Requirements should arrange for testing in their home country. Please note that international students are charged additional fees. Students with external scholarship support are encouraged to include this information with their application.

After you are accepted into the CGPS, you will need to register with the University of Saskatchewan and pay your tuition and fees. Complete information is available at the CGPS website: http://grad.usask.ca/admissions/how-to-apply.php#Beforeyouapply. Students in the MSc programs need to register for APP 994 and APP 990. Students in the PhD program need to register for APP 996 and APP 990. You will need to register for additional courses throughout your graduate program according to your Program of Studies (see sections 4B and 6B below). Upon your arrival at the University of Saskatchewan, you will need to meet with the departmental Graduate Assistant who will help you get settled in the Department.

3. Who is involved in my graduate program?

In addition to yourself, your graduate program involves your research supervisor, your advisory committee members, the Department graduate chair, the Department graduate assistant and staff in the CGPS. As a graduate student at the University of Saskatchewan, you are enrolled in the CGPS, but your graduate program is administered at the Department level, which operates within the regulations provided by the CGPS.

A. Your role as a graduate student

You are responsible for the success of your program, although your supervisor, research advisory committee, the graduate chair and the graduate assistant will always be available to help with problems. Graduate students are specifically responsible for:

1. demonstrating a commitment to research through diligent and conscientious lab and/or field work
2. maintaining a spirit of collegiality with peers, laboratory co-workers, and faculty
3. adherence to University regulations concerning work safety, biosafety, ethical treatment of research animals, and Academic Integrity http://www.usask.ca/integrity/
4. timely registration for courses and payment of fees owing
5. maintaining of appropriate academic performance (minimum 70% GPA in coursework)
6. attending and participating in the departmental seminar series (APP 990)
7. in consultation with supervisor, establish members of advisory committee and arrange advisory committee meetings (minimum once/year) (see FAQ How do I set up a committee meeting?)
8. seeking advice from members of their advisory committee where appropriate
9. timely submission of scholarship applications/renewals and awareness/attendance to the stipend funding periods
10. timely submission of research proposal, annual progress reports, manuscripts, thesis, etc.

B. Your supervisor's role

The supervisor is responsible for providing supportive advice and discussions about the research, assistance with research design, and for timely review of research proposals, manuscripts and thesis drafts. Supervisors are also required to provide sufficient resources to ensure that the research can proceed as effectively as possible. These resources include research operating funds, and access to research space and equipment as necessary. Additional clarification of roles can be achieved by filling out the Student-Supervisor Agreement (Appendix C) and filing it along with your program of studies.
C. The roles of advisory committee members

The guiding principle underlying the advisory committee is that the student needs sustained advice from the beginning of their program if they are to move expeditiously and constructively through the program requirements. The advisory committee meets at least once each year to review and assess student progress and to offer advice. However, students are encouraged to arrange more frequent meetings and/or to contact individual members of their committee whenever they need assistance. The advisory committee also plays an important role in assessing student performance in qualifying and comprehensive examinations and thesis defenses.

The advisory committee consists of the following members (minimum of 3 for MSc, 5 for PhD):

1. Supervisor - a member of the faculty of the CGPS (adjunct professors included). Co-supervisors are counted along with the Supervisor as one member.
2. Advisory committee chair – the Department Graduate Chair or designate (typically a member of committee)
3. Additional Members - a minimum of 1 (MSc) or 2 (PhD) faculty members of the Department of Anatomy, Physiology and Pharmacology. Must be members of the graduate faculty of CGPS, adjunct professors, or professional affiliates.
4. Cognate Member – a minimum of one for a PhD program. The cognate member cannot be a member of the Department of Anatomy, Physiology and Pharmacology but must be a member of the graduate faculty of CGPS or else granted permission by the Dean, CGPS.

The supervisor, the student and the graduate chair most often guide the decision-making process for committee member selection. Collectively, committee members should have sufficient experience and knowledge to be able to effectively assist the student with research design, background, methods, and analysis.

D. Anatomy, Physiology and Pharmacology graduate chair

The graduate chair offers advice and information regarding Department and CGPS regulations to ensure consistency among advisory committees and among students within the Department. The graduate chair should be viewed as an advocate for the student and should be the first person that the student consults should problems arise that cannot be resolved with the supervisor and/or committee members. On an administrative level, the graduate chair is responsible for ensuring chairing and recording the minutes for annual advisory meetings, qualifying and comprehensive exams and defenses. The graduate chair also oversees administrative aspects of scholarship and stipend awards/distribution. At the university level, the chair acts as liaison between the Department and the CGPS.

E. Graduate assistant

The graduate assistant acts as the graduate student resource person, providing advice and guidance on procedures related to the Department, the graduate program, and CGPS requirements. The graduate assistant is responsible for scheduling meetings, exams/defenses, and for maintaining and submitting appropriate paperwork to CGPS, including relevant information regarding scholarships.

F. The Department graduate committee

The graduate committee meets as necessary to make decisions regarding the Department’s graduate program, including decisions on scholarship competitions. In some cases, decisions made by the graduate committee are submitted for approval to Department faculty. Members of the graduate committee include the graduate chair,
The primary responsibility of the Department of Anatomy, Physiology and Pharmacology toward its graduate students is the provision of an environment that fosters scholarly development and experience that will enable gainful employment or continued training at an advanced stage. Additionally, the Department has the responsibility of ensuring that its graduates will reflect credit upon the Department and on the University. Below you will find specific student objectives for the graduate programs offered in the Department of Anatomy, Physiology and Pharmacology. A general description of learning outcomes are found in the College of Graduate and Postdoctoral Studies policy and procedure documents (https://cgps.usask.ca/policy-and-procedure/governance-membership/degree-level-learning-outcomes.php).

**MSc Student Objectives:**

The overarching goal of the MSc program is to ensure that students are exposed to the scientific method and procedures/skills important in producing and publishing novel scientific information. Although publication at this level is not mandatory, demonstration of knowledge and skills necessary to take an experimental question to publication must be evident. In order to meet this goal, MSc students should:

1. Develop a generalized knowledge base sufficient for design, conduct, analysis and reporting of scientific experiments surrounding a well-defined experimental question/hypothesis.
2. Obtain practical experience in laboratory skills necessary to address the proposed experimental questions/hypotheses.
3. Develop proficiency in the collection, analysis and presentation of data to aid in final publication.
4. Acquire experience with oral presentation of scientific information sufficient to enable preparation and delivery of reports or presentations at scientific meetings.

**PhD Student Objectives:**

In addition to meeting the main goal and specific objectives of the MSc program stated above, the major goal of the PhD program is to develop students into trained problem-solvers. This will include the development of a broadened knowledge base beyond their primary research focus and a mature understanding of the process of scientific inquiry sufficient to enable the assessment and constructive criticism of the work of others. Publication and presentation of results at scientific meetings is mandatory at this level. Given an experimental question in any scientific field, a PhD student should be able to:

1. Find relevant information to create/rationalize a hypothesis that will address the experimental question.
2. Seek out relevant information/resources concerning methodology necessary to adequately test the hypothesis.
4. Analyze, interpret and discuss the results in the context of the current literature leading to publication.
5. Obtain familiarity with the process of scientific reporting sufficient to enable the independent preparation of manuscripts for journals, applications for research grants, and technical reports.

**B. Within the first month of starting your program**

1. You and your supervisor should meet to decide on committee members and identify some of the academic courses you feel that you need. Departmental course requirements for the MSc program is 9 credits at the...
graduate level. Additional courses can be taken from any academic unit on campus as deemed appropriate to the students’ specific program of studies. Students transferring to the PhD program from the MSc program do not require, but may be subject to, additional coursework if the advisory committee deems it appropriate.

2. Arrange and hold your first introductory committee meeting (see FAQ How do I set up a committee meeting?). At this meeting, you will discuss your proposed research and the committee will provide advice on coursework. A progress report is not required for this meeting but you will need to send an email to your committee members prior to the meeting which indicates the area of your research and your proposed coursework, both credit and non-credit.

3. Coursework will include:
   - A list of academic courses which fulfill the credit requirements for your program.
   - Graduate Research (APP 994 for MSc or 996 for PhD) and Graduate Seminar (APP 990) courses.
   - Additional requirements such as Graduate Research Ethics and Integrity Training Course (GPS 960) required for all students, UCACS Education and Training Program (Animal Care/Handling GPS 962) required for students conducting research involving animal subjects, and/or Tri-Council Policy Statement: Ethics Conduct for Research involving Humans (TCPS) Tutorial (GPS 961) required for students conducting research involving human subjects.
   - Laboratory Safety, Biosafety, Radiation Safety and Ethics courses as required.
   - Students may also elect to complete non-credit courses offered by the CGPS, such as Thinking Critically: Professional Skills for Global Citizens (GPS 984); Introduction to University Teaching (GPS 989); Academic Preparation for International Graduate Students (GPS 981). These courses have no credit or fees, but require registration. Registration in these courses is limited to current graduate students and postdoctoral fellows and graduate students are encouraged to participate in these courses. The courses will appear on students’ official transcripts.

C. Within the first 4 months of starting your program

1. Write your brief research proposal (see FAQ, what should I include in a research proposal?).
2. You will need to have a committee meeting to have your Program of Studies (POS) approved by your advisory committee (see FAQ How do I set up a committee meeting?). The Program of Studies lists courses required for your individualized research program, as well as the research proposal. When the committee has approved it, the POS is submitted to the graduate chair and graduate assistant who will submit it to CGPS.

D. Each year of your program:

1. Maintain your registration in the program, pay tuition and fees.
2. Call an advisory committee meeting. It is a requirement of your graduate program to have at least one advisory committee meeting each year (typically in May/June). Call extra advisory committee meetings as deemed necessary. It is the responsibility of the student and the supervisor to call the meeting (see FAQ How do I set up a committee meeting?). At least 5 working days prior to meeting, provide your committee and the graduate assistant with an annual progress report (see FAQ What should I include in my annual progress report?). The Supervisor should review the written progress report before it is submitted. At this meeting, you will normally be expected to give a short (e.g. 20 min) presentation on your research progress. This presentation should provide a brief overview of your research but should focus on those issues which require input from your committee members. Remember that your committee members have already received and reviewed your progress report.

E. In the final year of your program

1. Call a permission-to-write meeting. The purpose of the permission-to-write meeting is to survey the structure and content of the thesis as a unified piece of work. The committee needs to be provided with a standard permission-to-write document at least 5 working days before the meeting. The Supervisor should review the permission-to-write document before it is submitted. For details on what to include in
the document, see FAQ: *What should I include in my Permission to Write report?* At the meeting, you will normally be expected to give a short (less than 20 min) presentation on the proposed structure and content of your thesis.

2. Write your thesis (see FAQ: *How should I format my thesis?* and the CGPS website https://students.usask.ca/graduate/thesis-preparation.php#Before beginning and review recent theses from the Department available online through the library (http://ecommons.usask.ca/handle/10388/381).

3. Once your supervisor has provided feedback on the written thesis and has approved it, the document is submitted to advisory committee members for reading and approval. Please allow the committee at least 2 weeks for MSc and 4 weeks for PhD to review the thesis.

4. After feedback from committee members (written and/or verbal) has been incorporated into the thesis, and each committee member has individually advised the committee chair that the thesis has met their approval, the thesis needs to be submitted to the graduate assistant who will deliver the thesis to the external examiner for MSc students, or submit it to CGPS for PhD students. External examiners participate in the examination of theses to provide an independent assessment of the quality of the graduate research. The external examiner, (faculty member at the UoS external to the department for MSc; external to University for PhD), will have been previously selected by the advisory committee as per CGPS guidelines. The student will not have any formal or informal communication with the external examiner until the date of the defense. CGPS requires 3 weeks’ notice for an MSc thesis defense and 6 weeks’ notice for a PhD thesis defense.

5. Defend the thesis. Students are required to give a public seminar (~20 minutes) prior to the defense of the thesis. After the seminar, the examining committee reconvenes with the student for the oral defense of the thesis. The oral defense can be open to the public, or can be closed, including only the student, advisory committee members and the external examiner. Open defenses are encouraged. The decision to have an open or closed defense lies with the student.

6. After successful defense of the thesis, students should be prepared to edit the final version of the thesis as directed by committee members and the external examiner. The normal recommendation is to allow either 2 or 6 weeks for the student to make the appropriate changes to the thesis. For full list of potential outcomes, consult CGPS guidelines.

7. Once the recommendations of the thesis examining committee have been met and the final version is approved by the supervisor, students who have met all other graduate program requirements on or before the April 15 (or the previous Friday if that date falls on a weekend) will be eligible to receive their degree at Spring Convocation. Note that an online application to graduate must be submitted online through PAWS by March 31. For Fall Convocation, the application to graduate must be submitted by August 31, and all graduate program requirements must be satisfied by the September term add/drop deadline. Students are responsible for ensuring the final copies of the electronic thesis submitted to the CGPS and members of their advisory committee meet all regulations as posted on the CGPS website. Students will arrange for hard copies of the thesis to be bound. The supervisor is normally expected to provide funds to cover the binding costs for copies of the theses (If requested). The student also should work closely with their advisory committee and with the graduate assistant in order to ensure all necessary documents have been received in Anatomy, Physiology and Pharmacology and in the CGPS office. Following the thesis defense, students will receive a *Convocation Checklist*. Students are strongly advised to pay close attention to this useful information.

8. Graduate!

### 5. Transfer from an MSc program to a PhD program

CGPS regulations regarding transfer from an MSc program to a PhD program state the following:

Transfer from an MSc program to a PhD program should take place after the end of the first year and no later than the end of the second year in the program. Recommendation to transfer from an MSc program to a PhD program must be initiated through a formal meeting of the student's advisory committee that forwards its recommendation through the academic unit to the CGPS. The following conditions must be met:
1. The student shows great promise both in terms of academic accomplishments and in potential for research. The student has completed at least 9 credit units, and has achieved a high-academic standing (>80% GPA) in these 9 credit units.
2. There is evidence of good writing and oral communication ability.
3. There is evidence the student has requisite research skills and knowledge to be able to successfully complete a PhD dissertation.
4. The student has successfully completed the PhD Qualifying Examination (see section 6 below) prior to being recommended for transfer.

Once permission to transfer is given, a new Program of Studies form must be submitted if applicable.

6. **Qualifying and Comprehensive Examinations**

Students in the MSc program are not required to take a qualifying or comprehensive examination.

Results of qualifying or comprehensive exams may be appealed on substantive or procedural grounds.

**Qualifying Examination**

This exam is used for MSc students wishing to transfer to a PhD program as outlined above (section 5), and it is a requirement for all PhD students; however, for student’s with a defended MSc thesis in the research area, the advisory committee may waive that requirement. The Qualifying Examination is designed to test the student’s general scientific knowledge, familiarity with the scientific literature in his or her area of interest, and suitability for study at the PhD level. It has both written and oral components. The written component is a formal proposal for the PhD research project. It must be given to members of the Advisory Committee a minimum of one week beforehand, and should contain the following components:

A. Descriptive Title, Name, and Date  
B. Background  
C. Specific Aims  
D. Rationale  
E. Preliminary Results (MSc work if transfer)  
F. Proposed Research Plan and Methodology  
G. Significance

The oral component includes a 15 – 20 minute oral presentation of the proposed research plan and methodology. This is followed by questions from members of the Advisory Committee. Questioning by the Advisory Committee is designed to determine whether the student has a sufficient command of the area of research interest to ensure that there is a high probability of success at the PhD level.

If the student fails the qualifying examination on the first try, a second examination can be undertaken within three months, with permission of the Dean of CGPS. Note that for the purpose of transferring from an MSc to a PhD, there is no opportunity for a second attempt. A second failure disqualifies the student from continuing in a PhD program.

**Comprehensive Examination**

The CGPS guidelines for PhD comprehensive examinations state that the comprehensive examination should cover topics cognate to the candidate’s field of research and is used to determine whether the student has a mature and substantive grasp of the field as a whole. The Department should establish and make available clear, written and specific regulations regarding the comprehensive examination, within CGPS regulations.

All students in a PhD program are required to pass a Comprehensive Examination. The examination will be given by the advisory committee, with additional examiners added at the discretion of the advisory committee, and/or the Departmental Graduate committee (see below). The examination should be conducted after all course work has been completed and the research is well underway. The examination should be completed within the second year of the program, and not later than the third year in program. Sufficient time should be allotted in case there is a need for a re-examination. The student may choose (with approval of
Supervisor) to be examined in either an oral examination format, or a written/oral grant proposal format. The student should meet with their Advisory Committee to select their choice of exam format. The student will have a minimum of 60 days’ notice for the comprehensive examination. The student must stop lab work four weeks prior to the exam and concentrate on studying for the oral or written examination.

1) ORAL EXAMINATION FORMAT

The oral format of the comprehensive examination is designed to test the student’s general competence in three major sub-disciplines in one of anatomy, physiology or pharmacology cognate to the candidate’s field of research chosen from a list provided by the thesis advisory committee. The student is also tested for specific knowledge in the area of research specialization.

The examining panel will be chaired by the Chair of the Advisory Committee. The Examiner in the area of research specialization will be the student's Supervisor. Additional Examiners will be chosen as appropriate for the selected sub-disciplines. The student should meet with the additional examiners assigned to the sub-discipline to determine the scope of the questions – usually a textbook is recommended. In general, questions of increasing difficulty are asked to assess the breadth of student knowledge. Following the oral examination, the examining panel assigns a grade of Pass or Fail. In the event of a failure, the student may request to retake the comprehensive examination in those sub-disciplines where performance is judged to be inadequate. A second attempt must be approved by the Dean of CGPS or designate. In this case, the second attempt must take place within two to six months following the first examination, depending on how many sub-disciplines require re-examination. The student will be required to discontinue and exit the PhD program in the event of a second failure.

2) GRANT PROPOSAL FORMAT

The objective of this examination format is to provide PhD candidates with an opportunity to apply their academic and practical scientific training toward the development and defense of a scientific research proposal. The examination will have both an oral and a written component. The written component will be a completed NSERC Discovery Grant application (Common CV, Research Proposal, Research Summary, Budget, etc.). The topic of the Research Proposal should be within the broader area of the student’s training but should not be directly related to the thesis research. Prior to grant preparation, the student will identify 3 research ideas they would be interested in pursuing and will circulate the title and major objectives for each project to their advisory committee members. Committee members will decide collectively on one of the topics and the student will then proceed to prepare the grant application. During grant preparation, the graduate chair can serve as a mentor but no intellectual input is allowed from committee members or other faculty members. The oral component of the comprehensive examination will be based on a defense of the grant application, and on knowledge of background information associated with the proposal and with the student’s area of specialization. Other related research areas, and pertinent topics such as scientific methodology, experimental design, hypothesis formulation and testing, and statistical analysis would be included as appropriate. Depending upon the grant topic and the range of expertise of the advisory committee, members of the advisory committee and/or the Departmental Graduate committee may choose to select additional examiners. In addition, the student is required to present a brief (15 minute) summary of the research proposal at the beginning of the examination. The written component, grant application and proposal, must be provided to the committee members 5 working days prior to the comprehensive exam meeting. The Comprehensive Examination may be repeated once with permission of the Dean of CGPS or designate. A second failure will result in the student being required to discontinue from the program.

7. Information on scholarships and graduate student stipend funding

The following list identifies the most common sources of stipend funding for graduate students in Anatomy, Physiology and Pharmacology, although they are not the only sources. Eligibility, stipend amounts, and application procedures for these and other sources of stipend funding are available on the CGPS website https://grad.usask.ca/funding/scholarships.php#University. The graduate student funding situation should be clearly stipulated in the Graduate Student-Supervisor Agreement (Appendix C) that is signed and
filed with your program of studies with CGPS. The Department will not allow a student to proceed with
the formal application process until funding required for student stipend and operating funds for the
project are secured. Students will not be admitted without funding.

a. Application to the College of Medicine Graduate Awards program (CoMGRAD) is strongly encouraged
as this can be used as matching funds or top-up if other external awards are also granted.

b. NSERC/CIHR – The CGPS provides a $6,000 annual award for holders of NSERC-PGS and CIHR
scholarships.

c. U of S Dean’s scholarships, including International Dean’s scholarships, are open to new students with a
GPA of 85% or better. Students are nominated by faculty or the Department.

d. U of S Awards - open to all graduate students. Requirements for U of S Scholarships and Fellowships
include a minimum 80% GPA. A call for applications from the Graduate chair is sent out to graduate
students in March each year.

   i. U of S Graduate Scholarships (College of Medicine Devolved Scholarships)
   ii. GTF – Graduate Teaching Fellowships
   iii. GTA – Graduate Teaching Assistantships

e. College Awards – open to graduate students in the College of Medicine. Eligibility varies between
awards. These awards are administered through the Vice Dean Research office, and a call for
applications is made each year.

f. Research grants of supervising faculty – In some cases, student stipends arise solely from research grants.

8. **Teaching opportunities**

Graduate students, particularly those in the PhD program, are offered the opportunity to participate in teaching
or to serve as demonstrators in laboratory sessions. To this end, the College of Medicine offers a number of
Graduate Teaching Assistantships each year to students deemed to be making excellent progress in their thesis
research.

Participation as a Graduate Teaching Assistant will bring the student into direct contact with undergraduate
students and afford an appreciation of the complexities associated with the administration of courses. Individuals
are typically offered teaching in specific courses within their general area of competence. The duties and
approximate hours of the appointment will be outlined in writing in a letter of offer for casual employment
through the collective agreement (PSAC). These duties may include attendance at lectures and meetings of
course committees. Employees will complete and submit time sheets reporting actual hours worked.

Students who wish to obtain more extensive teaching experience may wish to apply for a Graduate Teaching
Assistantship or a Graduate Teaching Fellowship (see Section 7.) A maximum of 10 hours/week may be spent
in teaching. Duties assigned to students holding Graduate Teaching Appointments will be in accordance with
collective agreement guidelines. Teaching assignments will be determined by the Department Head.

9. **Time in program, leaves of absence**

Official program time limits (maximum) are five years for the MSc program, and six years for the PhD program.
However, the Department recommends a typical time of less than two years for an MSc and less than five years
for a PhD. This time is measured from the beginning of the first term of registration for work which is included
in the Program excluding any periods of approved leave. Typically May 1st following program completion for
students transitioning from the BSc to the MSc program, or May 1st, September 1st or January 1st for MSc and
PhD programs.
Leaves of absence are available to students for compassionate, medical, or parenting reasons (See parental leave policy - Appendix B). Reasonable accommodation is normally made. Where possible, leaves of absence from CGPS are granted in four-month blocks to coincide with the registration terms (Sept. 1 to Dec. 31; Jan. 1 to Apr. 30; May 1 to Aug. 31). Parental leave may be granted for up to 16 months.

Requests for leaves should be discussed as early as possible with supervisors so that appropriate accommodations can be made prior to the beginning of the leave. Requests should be made in writing by the student. The Dean of the CGPS, or designate, will consider any petitions arising from students whose request for leave has been denied by the supervisor or academic unit. The leave period is not included in the time period for completion of the degree, and tuition fees are not assessed during the leave though nominal student fees are assessed. While a student is on leave, all supervisory processes are suspended. Financial support offered to the student as a full-time, fully-qualified student is not normally available to students on leave. Every possible accommodation should be made, however, in assisting the student to delay for the period of the leave, rather than having to decline offers of financial assistance. Letters of support in this regard will be sent to external funding agencies. Additional information regarding registration, fees, and funding for students on leave may be obtained from CGPS.
Appendix A: Frequently Asked Questions (FAQ)

A.1 How do I set up a committee meeting?

In consultation with your supervisor, you are responsible for deciding when you should have a committee meeting. Remember that you are required to have at least one meeting each year to review your progress (typically May/June), although you can hold as many meetings per year as is deemed necessary. All scheduling should be done by the Department graduate assistant. Please refrain from scheduling your own meetings. When you have decided to have a meeting, contact the Departmental graduate assistant and provide the approximate dates (usually a 2-week window) and an agenda for the meeting. The graduate assistant will schedule the meeting when all or most of your committee members can attend and will find an available room. Suggested agendas are:

- For the first meeting (at 1 month):
  - Introduction of student
  - Introduction of research topic (be prepared to present an introduction and summary of the proposed research)
  - Proposed coursework
  - Source of research and stipend funding
- For the second meeting (within 4 months):
  - Proposal defense and approval
  - Program of Studies approval
- For annual meetings
  - Research progress
  - Progress in coursework
  - Stipend funding

A.2 What should I include in my research proposal?

The following is a suggested format for the research proposal – this can be modified as needed to adapt to different research questions and approaches.

1. Background information. (2 – 5 pages)
   The literature review should outline the relevant literature framework into which your work will fit. This review should essentially set up and provide a rationale for the experimental hypothesis (i.e. what you are setting out to demonstrate).

2. Experimental hypothesis and summary of rationale for the hypothesis.
   A hypothesis is a proposed, falsifiable explanation, made on the basis of limited evidence, as a starting point for further investigation. For example: **Estrogen maintains bone density**. Rationale for this hypothesis would be published studies that show a relationship between estrogen and bone density. A test of the hypothesis would be to manipulate estrogen and evaluate bone density. A prediction of the hypothesis would be that if you block estrogen, then you would lose bone density.

3. Objectives – how you will address your hypothesis
4. For each objective
   a. Rationale for experiment, and experimental hypotheses, if appropriate.
   b. Design of experiment, including suitable control groups, sample sizes
   c. Proposed methods, including statistical analysis, power calculations if possible
   d. Anticipated results
   e. Anticipated problems and proposed solutions
   f. Proposed timeline

5. Actual results, if available.

6. Interpretation of results.

A.3 What should I include in my annual progress report?

A. Research Progress (4 pages max, excluding references):

1. Abbreviated literature review, providing the rationale for experiments
2. Thesis Objectives, Hypotheses
3. Progress on each objective – include summary of methods, provide results, indicate whether manuscript is being drafted, under review or published
4. An updated timeline.
5. Research presentations – posters or seminars, conferences attended, awards received etc.

B. Summary of non-research activities

1. Courses completed and marks, if available
2. Teaching responsibilities
3. Stipend funding
4. Any other activities which have an impact on your graduate program.

A.4 What should I include in my permission to write report?

The Permission-to-Write meeting allows the advisory committee to survey the structure of the thesis as a unified piece of work and allows committee members to provide input on how the student intends to structure the thesis. With this in mind, the Permission-to-Write report should include:

9. A 1-2 page summary for each proposed chapter, each of which should include
   a. the rationale, specific objectives and hypotheses for that chapter (if not included in (2) above) and
   b. a summary of the most significant findings for each chapter, illustrated with 1 - 3 pertinent figures with complete captions (i.e. NOT all the figures for each chapter). There should be an indication of which chapters are published, which are submitted and which have not yet been submitted for publication.
10. A final summary statement indicating whether the overall objectives/hypotheses of the thesis have been addressed.
**A.5 How should I format my thesis?**

Theses must follow a consistent editorial format. You should consult the CGPS guidelines (available at https://students.usask.ca/graduate/thesis-preparation.php, and review recent theses from the Department available through CGPS (http://ecommons.usask.ca/handle/10388/381).

Normally the order in which the items are presented in the thesis is as follows:
1. title page,
2. abstract,
3. "permission to use the thesis",
4. table of contents,
5. list of tables,
6. list of figures, and
7. list of abbreviations.
8. The body of the thesis
   a. Introduction that gives in 1-2 paragraphs an overview of the rationale for the project
   b. Literature review, which should outline the relevant literature framework into which your work will fit. This review should in essence set up and provide a rationale for the experimental hypothesis (i.e. what you are setting out to demonstrate)
   c. Hypothesis and objectives. Remember, a hypothesis is a statement of what you predict will happen.
   d. The next portions of the thesis present your research, in one of two formats:
      i. If you have published much of your research, you may wish to use these publications as the individual chapters of your thesis. Within the thesis, each publication (or ‘data chapter’) therefore has its own introduction, materials and methods, results and figures/tables, and discussion section.
         A few important points:
         1. The references from each of the data chapters should not be included at the end of each chapter but be collected together in one common bibliography at the end of the thesis.
         2. Normally, methods common to different chapters should not be repeated in each chapter but included only once, and then cited as appropriate for subsequent chapters.
      ii. If you have not published your work, you may elect to use a more traditional thesis format, with one common material and methods section, several results subsections.
   e. A general discussion chapter is required following the last data chapter (i, above) or results section (ii, above). You will need to present a coherent discussion of all of your work in one common discussion, which needs to be more in-depth and insightful than a simple summary of the discussions of each of the data chapters, for example.
   f. Conclusions, future directions
   g. Bibliography
   h. Appendices

**A.6 Going to conferences – who pays?**

Your attendance and presentation of your research results at local, national and/or international scientific conferences is strongly encouraged. Normally, decisions on whether you will attend a particular conference are made jointly between you and your supervisor. It should be made clear in these discussions whether part or all of your expenses (e.g. registration, travel, accommodation and meals) will be paid through your supervisor’s research grants, including how and when these expenses will be paid and/or reimbursed. In addition, travel awards are available from CGPS or from the College of Medicine. For information on these, contact the graduate assistant.
Appendix B: College of Medicine Parental leave policy

College of Medicine (CoM) Graduate Parental Leave Grant
This is a trial program being launched for a three year term beginning September 2018 and extending to August 2021. This program may be superseded by a University-level program during this term, at which point the CoM program will be revised and possibly withdrawn.

Description: A CoM graduate student may apply for financial assistance during a leave to serve as the primary care-giver immediately following the birth of a child occurring prior to the completion of the student’s program.

Amount: $4000/6 month period paid via monthly installments. Renewable once with a lifetime total of $8000 per student.

Funding Source: OVDR (Assistant Dean Graduate Studies Discretionary Fund).

Eligibility Criteria:
- CoM Graduate Student in good standing for at least two terms (8 months) prior to the start of the leave
- M.Sc. student within first two years at start of leave
- Ph.D. or M.Sc./Ph.D. transfer student within first five years at start of leave
- Funding level of $16,000/yr or greater from scholarship(s), stipend, or employment in the CoM (e.g. as a TA or graduate teaching fellowship)
- Leave granted by CGPS
- Expected to return to full-time studies following the leave
- Primary caregiver
- Not receiving any additional parental benefits (e.g. Parental funding from Tri-council scholarships, EI etc.).

How to Apply:
- Completed CoM Graduate Parental Leave Grant Form
- Letter from Supervisor confirming funding level and duration for the student, student progress in program and expected time needed to complete their program upon the completion of the leave
- Doctor’s note

Note: CoMGRAD scholarships may be deferred for the period of a leave approved by CGPS for parental reasons.
NOTE:

The student should be the main party responsible for the study program and the performance of related activities, such as the submission of a Master's or Doctoral thesis, and should demonstrate a deep commitment to the program of study and interest in the selected research topic.
**Introduction**

- This form is designed to provide a framework for discussion between the Supervisor(s) and the Graduate Student and to establish guidelines to govern their relationship. It may be revisited at any stage of the Student’s graduate program to accommodate for changes in the Student-Supervisor(s) relationship and/or the research project.

- The Supervisor(s)-Student relationship involves mentoring, support, career development, as well as academic oversight. The Supervisor(s) and Student should work together to arrive at jointly acceptable terms to establish their relationship.

- The completed form is to be regarded as an aid to planning and finishing the thesis project. It is not intended to be legally binding.

- It's anticipated that the discussion between Student and Supervisor(s) while completing this form will contribute to a healthy relationship, but completion of this agreement is not mandatory. This agreement is not a required element of a graduate student's program.

- The Supervisor and the Student are free to add items to the form to tailor it to their joint purposes.

- The Supervisor(s) is/are responsible for supervising the Student’s graduate program. The Supervisor(s) is/are the Student’s primary contact(s) at the University of Saskatchewan, and should be familiar with the general policies and regulations of the College of Graduate and Postdoctoral Studies as well as the specific supplementary regulations of their academic unit. This form does not replace official University of Saskatchewan statements of policy and procedure.

- If the Student or Supervisor(s) have any questions or concerns regarding their graduate program or this form, advice may be sought from the program graduate chair, unit head, or the College of Graduate and Postdoctoral Studies.

- Please visit the College of Graduate and Postdoctoral Studies website to find more information and guidance for both the Supervisor(s) and Student.

- The Supervisor(s) and the Student should review each of the points listed below and check off each box to confirm that the items have been discussed and understood by the Supervisor(s) and the Student. **Ideally, this document should be completed prior to the commencement of any research and no later than the submission of the first Progress Report for the Student.**
Part 1 | Supervisor(s) and Student

a. The supervisor(s), (the “Supervisor(s)”) is/are a member/s of the College of Graduate and Postdoctoral Studies and agree(s) to supervise the graduate program of the Student named below; and

b. The student (the “Student”) is registered in the College of Graduate and Postdoctoral Studies, studying in at the University of Saskatchewan and wishes to carry out a graduate program under the supervision of the above named Supervisor(s).

Part 2 | General Roles and Responsibilities

2.1 The Supervisor(s)

Please review the following points, and click each box to acknowledge that it was discussed. The Supervisor(s) will:

- Guide the Student on degree requirements, appropriate elective course work, research, thesis proposal, thesis writing, suitable resources, and workspace.

- Assess and confer appropriate and fair acknowledgment of Student contributions to scholarly activity.

- Give reasonable notice to the Student of extended absences from campus, such as research leaves, and make satisfactory arrangements during such absences.

- Provide advice on the composition of the advisory and examining committees.

- Disclose any conflict of interest that may arise with respect to the Student.

The following are optional points to be discussed. If relevant, please review the following points, and click the box to acknowledge that it was discussed.

- Provide guidance on how to work effectively as a member of a team.

- Assist in providing infrastructure and facilities required for the Student to undertake scholarly activities.

- Any other mutually agreed upon responsibilities:
2.2 **The Student**

Please review the following points, and click each box to acknowledge that it was discussed.

The Student will:

- Familiarize themselves with the policies, procedures, regulations and deadlines established by the University of Saskatchewan, the College of Graduate and Postdoctoral Studies, and their respective unit.

- Seek the advice of the Supervisor(s) regarding required course work including appropriate electives, research, thesis proposal, thesis writing, suitable resources, and workspace.

- Demonstrate appropriate professional judgment, collegial behavior, academic rigor and integrity at all times and in every facet of the graduate program.

- Dedicate time to the graduate program to make timely and effective progress towards degree completion.

- Maintain contact with the Supervisor(s) and provide any changes in contact information.

- Consult with the Supervisor(s) regarding graduate program examiners and assessors.

The following are optional points to be discussed. If relevant, please review the following points, and click the box to acknowledge that it was discussed.

- Keep laboratory, research, and computer areas tidy, and respect the space and property of others.

- Strive to work effectively as a member of a team.

- Any other mutually agreed upon responsibilities:

2.3 **The College of Graduate and Postdoctoral Studies**

The College of Graduate and Postdoctoral Studies holds primary responsibility for ensuring that program policies, including admission criteria, program timelines, and requirements are clearly articulated and duly followed. The College also facilitates access to funding sources. Students and Supervisor(s) should be familiar with the College website, regulations, and resources. See [http://www.usask.ca/cgps/](http://www.usask.ca/cgps/)
**Part 3 | Meetings**

Please review the following points, and click each box to acknowledge that it was discussed.

- The Supervisor(s) and Student will arrange and attend regular meetings. The frequency of the meetings may vary, but at a minimum, meetings normally will be held every [indicate weekly or monthly intervals and/or frequency].

- The Supervisor(s) will respond in a timely manner (normally not to exceed 30 days) with constructive suggestions/revisions to written work (including proposals, literature reviews, analysis, chapters), as well as research and scholarship applications, reports, manuscripts, or scholarly presentations.

- The Supervisor(s) and Student will organize and schedule an in-person meeting with the entire advisory committee at least once annually. Additional meetings may be held at the request of either the Student or the Supervisor(s). If appropriate, the Student will distribute reports in advance of scheduled meetings with the advisory committee.

- Any other mutually agreed upon responsibilities:

**Part 4 | Publications**

Please review the following points, and click each box to acknowledge that it was discussed.

- The Supervisor(s) will acknowledge the contribution of the Student in any publications and/or presentations, as appropriate.

- Order of authorship and the criteria to determine the order of authorship on any shared publications will be established.

- All University policies pertaining to attribution and/or authorship will be followed.

- The Student and the Supervisor(s) will discuss the patentability of any invention arising out of the research before any publication or presentation of the research in order to ensure that the patentability of the invention is not jeopardized.

- Any other mutually agreed upon responsibilities:
Part 5 | Intellectual Property, Academic Integrity, and Ethics

Please review the following points, and click each box to acknowledge that it was discussed.

☐ The Student will hold the copyright of their thesis.

☐ The Supervisor(s) and Student will abide by the specific guidelines and rules for copyright and intellectual property at the University of Saskatchewan.

☐ The Student will keep orderly records of all research data produced or developed.

☐ Where research data is produced or developed, both the Student and Supervisor(s) will have access to the data at all times.

☐ Both Student and Supervisor(s) understand that the provisions of the University’s Intellectual Property Policy pertaining to work done while a graduate student, as well as the guidelines around publication and access to research data, remain in place even after the Student is no longer attending the University.

☐ The Student is responsible for understanding the meaning of academic integrity at the University of Saskatchewan and ensuring it is applied to all their work.

☐ The Supervisor(s) and the Student will adhere to the University’s policies and procedures related to the conduct of research, including any necessary human ethics review procedures, and animal care ethics, that must be completed.

☐ Where the Supervisor(s) is/are a member(s) of the University of Saskatchewan Faculty Association (“USFA”), the provisions of the USFA collective agreement will apply to the Supervisor(s).

☐ The following are optional points to be discussed if relevant. Please review the following points and click the box to acknowledge that it was discussed.

☐ The Student must complete appropriate courses on the use of animals or humans in research. Any other mutually agreed upon responsibilities:
**Part 6 | Timelines and Completion**

Please review the following points, and click each box to acknowledge that it was discussed.

- Progress Report forms are to be submitted at least once per 12-month period. More frequent updates may be necessary. The Advisory Committee and the Supervisor(s) must jointly complete this form.

- The maximum time period, including course work, examinations, research, thesis writing and defence (if applicable) permitted for the Student’s graduate program is ___ years (please consult your specific program regulations as set by the College of Graduate and Postdoctoral Studies). It is anticipated that the Student should complete the graduate program within ___ years.

The following are optional points to be discussed. If relevant, please review the following points, and click the box to acknowledge that it was discussed.

- Student commitments for other duties such as non-degree research, teaching and teaching assistantships, or other responsibilities, should not delay efforts to complete the graduate program.

- Any other mutually agreed upon responsibilities:

**Part 7 | Funding**

Please review the following points, and click each box to acknowledge that it was discussed.

- The Student will seek opportunities for scholarships appropriate to their program, aided by the Supervisor(s).

If relevant, please review the following points, and click the box to acknowledge that it was discussed.

- The student will receive $___ per month for ___ (duration) from ___ (source) subject to satisfactory progress in program requirements.

- Any other mutually agreed upon responsibilities:
Part 8 | Safety

If relevant, please review the following points, and click the box to acknowledge that it was discussed.

☐ The Student will be subject to appropriate safety courses or requirements at the University of Saskatchewan, including those pertaining to workplace and fieldwork protection, hazardous materials, radioisotopes, laboratory and environmental waste management, or others.

☐ The Supervisor(s) and Student will seek input and direction from safety officers or other appropriate personnel within their unit if further training is required.

Part 9 | Privacy and Confidentiality

Please review the following points, and click each box to acknowledge that it was discussed.

☐ If confidential information is provided to a student in the program, the student will not disclose the confidential information to any third parties, except as required by law or as permitted by agreement pursuant to which the confidential information was shared.

☐ The U of S Freedom of Information and Protection of Privacy Policy applies to the Student’s program along with provincial and federal legislation.

Part 10 | Professional Development

Please review the following points, and click each box to acknowledge that it was discussed.

☐ Opportunities for the Student to attend suitable conferences and present scholarly work will be sought.

☐ Sources of funding for Student travel should be investigated and applied for.

☐ Professional development programs, such as effective writing courses, teaching training, academic integrity, and workshops on research grants and career opportunities will be encouraged.

☐ Any other mutually agreed upon responsibilities:

Part 11 | Vacation

Please review the following points, and click each box to acknowledge that it was discussed.

☐ Graduate students are entitled to a minimum of 2 weeks vacation per year in addition to weekends, statutory holidays, and university closures. Vacation time will be scheduled at times that are mutually agreed upon by the student and supervisor(s).

☐ Where program requirements necessitate working during weekends, statutory holidays, or university closures, alternate time off will be provided as mutually agreed.

☐ Students receiving funding with a service requirement may not take vacation at a time that causes disruption to the service requirement unless approved by the person/unit in charge of
the service.

**Part 12 / Other**

Any other mutually agreed upon responsibilities:

Any text can be written here.

The Student and Supervisor(s) have reviewed and understand these guidelines.

By checking this box, you agree that you have read and understood this form, and that the information provided within is true and accurate to the best of your knowledge.

![Signature fields](image)

Date: ________________

![Signature fields](image)

Date: ________________

![Signature fields](image)

Date: ________________

Copies of these signed guidelines will be kept by the Supervisor(s) and the Student, the unit (in the Student's file), and the College of Graduate and Postdoctoral Studies.
Appendix D: List of available scholarships

To be developed
Consultation with the Registrar Form

This form is to be completed by the Registrar (or his/her designate) during an in-person consultation with the faculty member responsible for the proposal. Please consider the questions on this form prior to the meeting.

Section 1: New Degree / Diploma / Certificate Information or Renaming of Existing

1. Is this a new degree, diploma, or certificate? Yes [ ] No [x]
   Is an existing degree, diploma, or certificate being renamed? Yes [ ] No [x]  
   If you've answered NO to each of the previous two questions, please continue on to the next section.

2. What is the name of the new degree, diploma, or certificate?

3. What is the credential of this new degree, diploma, or certificate? [Example - D.M.D. = Doctor of Dental Medicine]

4. If you have renamed an existing degree, diploma, or certificate, what is the current name?

5. Does this new or renamed degree / diploma / certificate require completion of degree level courses or non-degree level courses, thus implying the attainment of either a degree level or non-degree level standard of achievement?

6. If this is a new degree level certificate, can a student take it at the same time as pursuing another degree level program? Yes [ ] No [ ]

7. If YES, a student attribute will be created and used to track students who are in this certificate alongside another program. The attribute code will be:

8. Which College is responsible for the awarding of this degree, diploma, or certificate?

9. Is there more than one program to fulfill the requirements for this degree, diploma, or certificate? If yes, please list these programs.

10. Are there any new majors, minors, or concentrations associated with this new degree / diploma / certificate? Please list the name(s) and whether it is a major, minor, or concentration, along with the sponsoring department. [One major is required on all programs [4 characters for code and 30 characters for description]]

11. If this is a new graduate degree, is it thesis-based, course-based, or project-based?
Section 2: New / Revised Program for Existing or New Degree / Diploma / Certificate Information

1. Is this a new program?  
   Yes ☑️ No ☐
   Is an existing program being revised?  
   Yes ☑️ No ☐
   If you’ve answered NO to each of the previous two questions, please continue on to the next section.

2. If YES, what degree, diploma, or certificate does this new/revised program meet requirements for?

3. What is the name of this new/revised program?

4. What other program(s) currently exist that will also meet the requirements for this same degree(s)?

5. What College/Department is the academic authority for this program?

6. Is this a replacement for a current program?  
   Yes ☑️ No ☐

7. If YES, will students in the current program complete that program or be grandfathered?

8. If this is a new graduate program, is it thesis-based, course-based, or project-based?
Section 3: Mobility

Mobility is the ability to move freely from one jurisdiction to another and to gain entry into an academic institution or to participate in a learning experience without undue obstacles or hindrances.

1 Does the proposed degree, program, major, minor, concentration, or course involve mobility?  Yes [ ] No [x]

If yes, choose one of the following:
- Domestic Mobility (both jurisdictions are within Canada)
- International Mobility (one jurisdiction is outside of Canada)

2 Please indicate the mobility type (refer to Nomenclature for definitions).
- Joint Program
- Joint Degree
- Dual Degree
- Professional Internship Program
- Faculty-Led Course Abroad
- Term Abroad Program

3 The U of S enters into partnerships or agreements with external partners for the above mobility types in order to allow students collaborative opportunities for research, studies, or activities. Has an agreement been signed?  Yes [ ] No [x]

4 Please state the full name of the agreement that the U of S is entering into.

5 What is the name of the external partner?

6 What is the jurisdiction for the external partner?
Section 4: New / Revised Major, Minor, or Concentration for Existing Degree Information (Undergraduate)

1. Is this a new or revised major, minor, or concentration attached to an existing degree program?  
   Yes [ ] No [X] Revised [ ]
   If you've answered NO, please continue on to the next section.

2. If YES, please specify whether it is a major, minor, or concentration. If it is more than one, please fill out a separate form for each.

3. What is the name of this new / revised major, minor, or concentration?

4. Which department is the authority for this major, minor, or concentration? If this is a cross-College relationship, please state the Jurisdictional College and the Adopting College.

5. Which current program(s), degree(s), and/or program type(s) is this new / revised major, minor, or concentration attached to?

Section 5: New / Revised Disciplinary Area for Existing Degree Information (Graduate)

1. Is this a new or revised disciplinary area attached to an existing graduate degree program?  
   Yes [X] No [ ] Revised [ ]
   If you've answered NO, please continue on to the next section.

2. If YES, what is the name of this new / revised disciplinary area?

   Anatomy Physiology Pharmacology [APPY - Anat Physio Pharma - code and description for student system]

3. Which Department / School is the authority for this new / revised disciplinary area? (NOTE - if this disciplinary area is being offered by multiple departments see question below.)

   Anat Physio Pharma [APPY] - currently exists in student system

4. Which multiple Departments / Schools are the authority for this new / revised disciplinary area?

4a. Of the multiple Departments / Schools who are the authority for this new / revised disciplinary area and what allocation percentage is assigned to each? (Note - must be whole numbers and must equal 100.)

4b. Of the multiple Departments / Schools who is the primary department? The primary department specifies which department / school policies will be followed in academic matters (ex. late adds, re-read policies, or academic misconduct). If no department / school is considered the primary, please indicate that. (In normal circumstances, a department / school with a greater percentage of responsibility - see question above - will be designated the primary department.)

5. Which current program(s) and / or degree(s) is this new / revised disciplinary area attached to?

   Master of Science-Thesis [MSC-T-GP], Doctor of Philosophy (Transfer) [PHD-TRANS-GP], Doctor of Philosophy [PHD-GP]
Section 6: New College / School / Center / Department or Renaming of Existing

1 Is this a new college, school, center, or department? Yes [ ] No X
Is an existing college, school, center, or department being renamed? Yes [ ] No X
Is an existing college, school, center, or department being deleted? Yes [ ] No X
If you’ve answered NO to each of the previous two questions, please continue on to the next section.

2 What is the name of the new (or renamed or deleted) college, school, center, or department?

3 If you have renamed an existing college, school, center, or department, what is the current name?

4 What is the effective term of this new (renamed or deleted) college, school, center, or department?

5 Will any programs be created, changed, or moved to a new authority, removed, relabelled?

6 Will any courses be created, changed, or moved to a new authority, removed, relabelled?

7 Are there any ceremonial consequences for Convocation (i.e., new degree hood, adjustment to parchments, etc.)?
Section 7: Course Information

1. Is there a new subject area(s) of course offering proposed for this new degree? If so, what is the subject area(s) and the suggested four (4) character abbreviation(s) to be used in course listings?
   Yes - Anatomy Physiology Pharmacology [APPY - Anat Physio Pharma - code and description for student system]

2. If there is a new subject area(s) of offerings what College / Department is the academic authority for this new subject area?
   College of GP / Department of APPY - both currently exist in student system

3. Have the subject area identifier and course number(s) for new and revised courses been cleared by the Registrar?
   Yes

4. Does the program timetable use standard class time slots, terms, and sessions?
   Yes [X] No [ ]
   If NO, please describe.

5. Does this program, due to pedagogical reasons, require any special space or type or rooms?
   Yes [ ] No [X]
   If YES, please describe.

NOTE: Please remember to submit a new "Course Creation Form" for every new course required for this new program / major. Attached completed "Course Creation Forms" to this document would be helpful.
Section 8: Admissions, Recruitment, and Quota Information - as per current set-up

1. Will students apply on-line? If not, how will they apply?

2. What term(s) can students be admitted to?

3. Does this impact enrollment?

4. How should Marketing and Student Recruitment handle initial inquiries about this proposal before official approval?

5. Can classes towards this program be taken at the same time as another program?

6. What is the application deadline?

7. What are the admission qualifications? (IE. High school transcript required, grade 12 standing, minimum average, any required courses, etc.)

8. What is the selection criteria? (IE. If only average then 100% weighting; if other factors such as interview, essay, etc. what is the weighting of each of these in the admission decision.)

9. What are the admission categories and admit types? (IE. High school students and transfer students or one group? Special admission? Aboriginal equity program?)

10. What is the application process? (IE. Online application and supplemental information (required checklist items) through the Admissions Office or sent to the College/Department?)

11. Who makes the admission decision? (IE. Admissions Office or College/Department/Other?)

12. Letter of acceptance - are there any special requirements for communication to newly admitted students?

13. Will the standard application fee apply?

14. Will all applicants be charged the fee or will current, active students be exempt?

15. Are international students admissible to this program?
Section 9: Government Loan Information - as per current set-up

NOTE: Federal / provincial government loan programs require students to be full-time in order to be eligible for funding. The University of Saskatchewan defines full-time as enrollment in a minimum of 9 credit units (operational) in the fall and/or winter term(s) depending on the length of the loan.

1. If this is a change to an existing program, will the program change have any impact on student loan eligibility?

2. If this is a new program, do you intend that students be eligible for student loans?

Section 10: Convocation Information (only for new degrees) - not applicable

1. Are there any 'ceremonial consequences' of this proposal (ie. New degree hood, special convocation, etc.)?

2. If YES, has the Office of the University Secretary been notified?

3. When is the first class expected to graduate?

4. What is the maximum number of students you anticipate/project will graduate per year (please consider the next 5-10 years)?

Section 11: Schedule of Implementation Information

1. What is the start term?
   202005 [May 2020]

2. Are students required to do anything prior to the above date (in addition to applying for admission)?
   Yes [ ] No [x]
   If YES, what and by what date?
Section 12: Registration Information - as per current set-up

1 What year in program is appropriate for this program (NA or a numeric year)?
(General rule = NA for programs and categories of students not working toward a degree level qualification.)

2 Will students register themselves?
   If YES, what priority group should they be in?

Yes ☐ No ☐

Section 13: Academic History Information - as per current set-up

1 Will instructors submit grades through self-serve?

Yes ☐ No ☐

2 Who will approve grades (Department Head, Assistant Dean, etc.)?

Section 14: T2202 Information (tax form) - as per current set-up

1 Should classes count towards T2202s?

Yes ☐ No ☐

Section 15: Awards Information

1 Will terms of reference for existing awards need to be amended?

Yes ☐ No ☐

2 If this is a new undergraduate program, will students in this program be eligible for College-specific awards?

Yes ☐ No ☐

Section 16: Government of Saskatchewan Graduate Retention (Tax) Program - as per current set-up

1 Will this program qualify for the Government of Saskatchewan graduate retention (tax) program?
   To qualify the program must meet the following requirements:
   - be equivalent to at least 6 months of full-time study, and
   - result in a certificate, diploma, or undergraduate degree.

Yes ☐ No ☐
Section 17: Program Termination

1. Is this a program termination?
   Yes [x]  No [ ]
   If yes, what is the name of the program?

Majors of Anatomy and Cell Biology [ACB], Physiology [PHSI], and Pharmacology [PCOL] in the Master of Science-Thesis [MSC-T-GP], Doctor of Philosophy (Direct) [PHD-DIRECT-GP], Doctor of Philosophy(Transfer) [PHD-TRANS-GP], Doctor of Philosophy [PHD-GP] programs

2. What is the effective date of this termination?
   Yes [x]  No [ ]
   202005 [May 2020]

3. Will there be any courses closed as a result of this termination?
   Yes [x]  No [ ]
   Will be closed through the moribund process

4. Are there currently any students enrolled in the program?
   Yes [x]  No [ ]
   Students will be allowed to complete their current program or move to the new program

5. If not, what alternate arrangements are being made for these students?

6. When do you expect the last student to complete this program?
   Yes [x]  No [ ]
   2025 - students have 6 years to complete

7. Is there mobility associated with this program termination?
   Yes [x]  No [ ]
   If yes, please select one of the following mobility activity types.
   - Dual Degree Program
   - Joint Degree Program
   - Internship Abroad Program
   - Term Abroad Program
   - Taught Abroad Course
   - Student Exchange Program

Partnership agreements, coordinated by the International Office, are signed for these types of mobility activities. Has the International Office been informed of this program termination?
Section 18: Proposed Tuition and Student Fees Information - as per current set-up

1. How will tuition be assessed?
   - Standard Undergraduate per credit
   - Standard Graduate per credit
   - Standard Graduate per term
   - Non standard per credit
   - Non standard per term
   - Other
   - Program Based

   * See attached documents for further details

2. If fees are per credit, do they conform to existing categories for per credit tuition? If YES, what category or rate?

3. If program based tuition, how will it be assessed? By credit unit? By term? Elsehow?

4. Does proponent’s proposal contain detailed information regarding requested tuition?
   - Yes
   - No

5. What is IPA’s recommendation regarding tuition assessment? When is it expected to receive approval?

6. IPA Additional comments?

7. Will students outside the program be allowed to take the classes?

8. If YES, what should they be assessed? (This is especially important for program based.)

9. Do standard student fee assessment criteria apply (full-time, part-time, on-campus versus off-campus)?

10. Do standard cancellation fee rules apply?

11. Are there any additional fees (e.g. materials, excursion)? If yes, see NOTE below.

12. Are you moving from one tuition code (TC) to another tuition code?
   - Yes
   - No

13. Are international students admissible to the program? If yes, will they pay the international tuition differential?

NOTE: Please remember to submit a completed "Application for New Fee or Fee Change Form" for every new course with additional fees.
Section 19: TLSE - Information Dissemination (internal for TLSE use only)

1. Has TLSE, Marketing and Student Recruitment, been informed about this new / revised program?
   - Yes
   - No

2. Has TLSE, Admissions, been informed about this new / revised program?
   - Yes
   - No

3. Has TLSE, Student Finance and Awards, been informed about this new / revised program?
   - Yes
   - No

4. Has CGPS been informed about this new / revised program?
   - Yes
   - No

5. Has TLSE, Transfer Credit, been informed about any new / revised courses?
   - Yes
   - No

6. Has ICT-Data Services been informed about this new or revised degree / program / major / minor / concentration?
   - Yes
   - No

7. Has the Library been informed about this new / revised program?
   - Yes
   - No

8. Has ISA been informed of the CIP code for new degree / program / major?
   - Yes
   - No

9. Has Room Scheduling/Scheduling Hub/Senior Coordinator of Scheduling been informed of unique space requirements for the new courses and/or informed of program, course, college, and department changes?
   - Yes
   - No

10. Has the Convocation Coordinator been notified of a new degree?
    - Yes
        - No

11. What is the highest level of financial approval required for this submission? Check all that apply.
    a. None - as it has no financial implications
    b. Fee Review Committee
    c. Institutional Planning and Assessment (IPA)
    d. Provost's Committee on Integrated Planning (PCIP)
    e. Board of Governors
    f. Other

SIGNED

Date: December 9, 2019

Registrar (Russell Isinger): Russell Isinger

College / Department Representative(s): Martha Smith

IPA Representative(s):
MEMORANDUM

To: Academic Programs Committee of University Council

Copy: Dr. Jeremy Lee, Department of Biochemistry, Microbiology & Immunology

From: Martha Smith, Associate Dean, CGPS

Date: December 11, 2019

Re: Program Merger – Biochemistry and Microbiology & Immunology

As a result of the Graduate Program Review process and strategic planning processes in the College of Medicine, the two independent departments of Biochemistry, and Microbiology & Immunology were merged effective July 1, 2018. Merging the two independent graduate programs would provide more cohesive programming and enrich the experience for the graduate students.

The merger of the two programs would have all graduate students entering a new field of study “Biochemistry, Microbiology & Immunology”. Existing students would have the option to remain in their current program or transfer to the new field. The CGPS requests that APC approve the proposal effective May 1, 2020.

The proposal to merge the two programs was approved by the Graduate Programs Committee on September 30, 2019. The proposal was subsequently approved by the Executive Committee of CGPS on November 25, 2019.

Attached please find the full program proposal and supporting documents.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229
On November 25, 2019, the Executive Committee (EC) of CGPS considered a recommendation from the Graduate Programs Committee (CGPS) to merge the Biochemistry and the Microbiology & Immunology graduate programs.

There was extensive discussion at the Executive that included reminders that multiple graduate programs can be housed within the same academic unit. The EC tasked the Dean to ensure clarification on the program merger process has a clear process. The question at hand is that this is not ‘new programming’ but rather merged programming within an already established administrative structure.

**Accepted Motion:** To approve the merger of Biochemistry and Microbiology & Immunology graduate programs on the condition that the corrections and clarifications to their policies identified by the graduate programs committee be incorporated and on the condition that BIOC/MCIM have identified the duration of financial support and the process of renewal of support at the Masters and at the PhD level. *Heavin/Misra*

*Members agreed that this merger* makes a lot of sense as one of the reasons for the amalgamation of BIOC and MCIM in the first place was to have a stronger department and stronger graduate student base while increasing collaborative efforts between the legacy departments.

The attached appendix provides additional background for consideration. If you have any questions, please contact Dean Trever Crowe at trever.crowe@usask.ca or by phone at 966-5759.
MEMORANDUM

To: Executive Committee of CGPS

Copy: Dr. Jeremy Lee, Graduate Chair, Biochemistry, Microbiology & Immunology

From: Graduate Programs Committee

Date: October 28, 2019

Re: Merger of Graduate Programs in Biochemistry and Microbiology & Immunology

On September 30, 2019, the Graduate Programs Committee considered a proposal to merge existing programs in the fields of 1) Biochemistry and 2) Microbiology & Immunology. The program merger proposal follows the departmental merger that was effective July 1, 2018. Overall, merging the graduate programs seemed logical to provide more cohesive programming for the graduate students.

Existing students would have the option to remain in their existing program, or transfer to the new field of study. New students would be admitted to the new field. The new field of study would have options for Master of Science and Doctor of Philosophy program. While previously, the Biochemistry program had opportunities for Postgraduate Diploma and Direct-entry PhD admissions, those options were not utilized, and the department does not wish to offer those options at this time.

The Graduate Programs Committee was satisfied with the proposal, and the following motion was passed unanimously:
To recommend approval of the merger of Biochemistry and Microbiology & Immunology graduate programs on the condition that the corrections and clarifications to their policies be incorporated. Tanaka/Morrison CARRIED

Following the motion, the following corrections and clarifications were incorporated into the policies and procedures section of the proposal:

- Information regarding leaves of absence was removed and replaced with language to indicate that leaves could be granted in accordance with CGPS policies.
- Information regarding qualifying exams was clarified to indicate that a second attempt was not possible for the purpose of transferring from a master's program to a PhD program.
- Information regarding comprehensive exams was clarified to indicate that students had an option to choose from two format options, and additional information on each format option was incorporated.
- Additional minor changes were incorporated for readability and language currency.

Attached please find:

- The proposal for the program merger with a table demonstrating existing requirements of the two separate fields in comparison to the new merged field.
- Support from David Cooper, Assistant Dean of Graduate Studies in the College of Medicine.
- The Graduate Program Reviews for each of the independent programs are included as well as the responses.
- The policies and procedures for the merged program provide more comprehensive information on the program.

If you have any questions, please contact Kelly Clement at kelly.clement@usask.ca or 306-966-2229
Biochemistry, Microbiology and Immunology Graduate Programs—
Request for name change/program merger/replacement program

The following documents are attached:

1. Request for program merger (Form).
2. Biochemistry, Graduate program review 2018.
4. Microbiology and Immunology Graduate Program Review.
5. Comments on Microbiology and Immunology Program review – May 2018
Graduate Program in Biochemistry, Microbiology and Immunology.

Commentary

The intention is to merge the existing programs into one to align with the departmental merger that became effective July 1, 2018. The current Biochemistry program will be the model for the proposed BMI program. Students in both the current Microbiology and Immunology program as well as the Biochemistry program will have the opportunity to complete their program under the new BMI field of study. If any do not wish to transfer to BMI, they will have the opportunity to complete their program under the field of study they were admitted. All new students would enter the BMI program.

As can be seen from Documents 2 and 4, the external reviews of both Departments were generally favourable. The rebuttals (Documents 3 and 5) outline the issues and how they are going to be addressed.

Perhaps the most important issue is faculty renewal. Fortunately, BMI has been given permission to hire two new faculty and three more positions are under discussion (one a Canada Research Chair in cancer biology; a retirement, and a replacement for a member who moved to a clinical department who is also retiring). Also when the Departments were reorganized, one faculty from the original Department of Anatomy decided to move to BMI. Therefore, we are expecting an influx of 5 new faculty members within 2 years. Since the total faculty at present is 28 (with 5 retiring within 2 years) this represents a large turnover. It should also be pointed out, that the issue of new faculty also drove the decision to merge the graduate programs. Simply put, it would be difficult to have a cohesive Department with new faculty having to choose between two graduate programs with which to be affiliated. Moreover, there are a number of shared research interests that span both disciplines. Additionally, the joint graduate program is expected to have 40-50 students which will provide a dynamic research force.

The need for student recruitment was also mentioned as an important issue. To address this we have already recruited 9 new students to the current MCIM M.Sc./Ph.D program this past year. Similarly, 5 have been added to the current Biochemistry program.

In September 2019, the seminar programs (990.0) for the existing programs will be merged so that each student will present their research once per year to the whole Department.
We expect that this will help to forge a Departmental unity and enhance graduate program cohesiveness, another issue that was identified and needed to be addressed.

Another gap identified by the Graduate Review was Professional Development. In 2018, Microbiology and Immunology started to offer some Professional Development and Skills lectures (some with outside speakers) as part of their 990.0 course. This was well received and we intend to have a stand-alone PDS course for BMI graduate students (perhaps with APP graduate students as well) beginning in September 2019. The intention is to involve the students in the choice of some of the speakers as recommended by the reviewers.

Finally, Document 6 is the new Policy and Procedures manual for the merged programs. In general, the Qualifying and Comprehensive exams have been made more flexible as recommended by the reviewers and admission requirements are expected to be tightened subsequent to the merger (e.g. the TOEFL test and GPA averages). As well we have introduced minimum stipends for graduate students which will be consistent across the merged program.
Proposal for Academic or Curricular Change

PROPOSAL IDENTIFICATION

Title of proposal: Merging of the Biochemistry and the Microbiology and Immunology Graduate Programs

Degree(s): MSc., PhD.

Field(s) of Specialization: Biochemistry, Microbiology and Immunology.

Level(s) of Concentration:

Option(s):

Degree College: CGPS

Contact person(s) (name, telephone, fax, e-mail): Jeremy Lee (4371) and Sylvia van den Hurk (1559)

Proposed date of implementation: May 1 2020.

Proposal Document

Rationale
The Biochemistry Department and the Microbiology and Immunology Department merged on July 1st 2018 to form a new Department called BMI. The new BMI Department will offer a single undergraduate program in 2021 which prompted consideration for merging the Graduate programs as well. At the first meeting of the new Department in September 2018, there was a proposal for merging the graduate programs for which there was a positive unanimous vote. It is anticipated that there will be several positive impacts as detailed below.

Impact of the change
- impact on students: It is envisaged that many graduate student activities will be merged. These include seminars, research presentations, professional development and faculty/student BBQ’s. The merger will help to provide a more cohesive student body with increased morale.
- impact on faculty: Improved faculty cooperation is to be expected.
- impact on staff: At present the two graduate programs are administered differently. E.g Admissions and regulations for the qualifying and comprehensive exams have different requirements. Merging the programs will lead to simplified procedures and administrative efficiency.
- impact on alumni: None
- affect on other programs, departments, colleges, centres: None
- impact on university-wide systems (e.g. SiRIUS, UniFi, PAWS, U-Friend, Library, About US, etc.):
  implementation of new program and course codes, and possible one-time update to existing student records
- resource areas such as library resources, physical facilities, and information technology: None
- external impact (e.g. reputation, accreditation, other institutions, high schools, community organizations, professional bodies): A larger merged program is expected to have a larger impact.

Costs
Please describe whether this change will result in any additional costs for the university (ie, repainting signs, technical changes in SiRIUS, PAWS, financial services, etc.):
There will be minor in-kind costs associated with modifications to the Graduate Programs listed in the University Catalogue and updates to the student information system.

Consultation
Please describe any consultation undertaken with other university offices, such as Student and Enrolment Services, Institutional Strategy and Analytics, Institutional Planning and Assessment, Financial Services, Facilities Management, Office of the University Secretary, Information Technology Services, etc. Please attach any memos or emails received about this consultation.

Please also note the “Commentary” and other attached documents.
<table>
<thead>
<tr>
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<th>Existing Biochemistry Programs</th>
<th>Existing Microbiology and Immunology Programs</th>
<th>Proposed Biochemistry, Microbiology and Immunology Programs</th>
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<tbody>
<tr>
<td><strong>Postgraduate Diploma</strong></td>
<td><strong>Admission Requirements</strong></td>
<td><strong>N/A</strong></td>
<td><strong>We wish to delete this program. There have been very few students (perhaps 2?) in the last twenty years and it does not serve a useful purpose.</strong></td>
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<td>• Language Proficiency</td>
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<td>• A four-year honours degree, or equivalent, from a recognized college or university in an academic discipline relevant to the proposed field of study</td>
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| • GPS 962.0, if research involves animal subjects | • GPS 962.0, if research involves animal subjects | • BMIS 990.0 |
| • BIOC 990.0 | • MCIM 990.0 | • BMIS 994.0 |
| • BIOC 994.0 | • MCIM 994.0 | a minimum of 9 credit units at the 800-level |
| • a minimum of 9 credit units at the 800-level | • a minimum of 9 credit units of graduate courses | • thesis defense |
| • thesis defense | • thesis defence | We have decided not to allow direct entry without a MSc. |
**Degree Requirements**

Students must maintain continuous registration in the BIOC 996 course.

- GPS 960.0
- GPS 961.0, if research involves human subjects
- GPS 962.0, if research involves animal subjects
- At least 9 credit units of course work at the graduate level must be successfully completed in the first year of the program.
- Students must enroll in BIOC 990.0 in the Fall and Winter terms.
- BIOC 996\(^2\)
- comprehensive examination
- qualifying examination
- thesis defense

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**Doctor of Philosophy (with earned admission)**

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| Master's degree | international applicants and for applicants whose first language is not English.  
- Master's degree, or equivalent, from a recognized university in a relevant academic discipline  
- A cumulative weighted average of at least a 70% (U of S grade system equivalent) in the last two years of study (i.e. coursework required in Master's program) | Degree Requirements  
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- A minimum of 9 credit units at the 800-level including any such courses | Degree Requirements  
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3 This language is unusual. There is no minimum cu required for PhD students in Biochem currently.
Programs to be deleted: The fields of 1) Biochemistry, and 2) Microbiology on the Master of Science and Doctor of Philosophy degree programs

Effective date of termination: May 2020. Students already enrolled will be permitted to complete their programs.

1. List reasons for termination and describe the background leading to this decision.

2. Technical information.
   2.1 Courses offered in the program and faculty resources required for these courses. All resources will be redirected to the new combined BMIS graduate programs.
   2.2 Other resources (staff, technology, physical resources, etc) used for this program. All resources will be redirected to the new combined BMIS graduate programs.
   2.3 Courses to be deleted, if any. Courses to be relabeled. The individual 99X courses will be replaced with BMIS 99X courses.
   2.4 Number of students presently enrolled.
   2.5 Number of students enrolled and graduated over the last five years.

3. Impact of the termination.
   Internal
   3.1 What if any impact will this termination have on undergraduate and graduate students? How will they be advised to complete their programs?
   Program mergers at the undergraduate level have already been approved. The combined program is anticipated to be an improvement over the three independent programs. Current students will have a choice to transfer to the new program or complete the program under the previous field of study.
   3.2 What impact will this termination have on faculty and teaching assignments?
   Combining the programs is anticipated to result in better utilization of teaching resources.
   3.3 Will this termination affect other programs, departments or colleges?
   No
   3.4 If courses are also to be deleted, will these deletions affect any other programs?
   N/A
3.5 Is it likely, or appropriate, that another department or college will develop a program to replace this one?
No. Three independent programs are being replaced by one cohesive program. Other units will not be impacted.

3.6 Is it likely, or appropriate, that another department or college will develop courses to replace the ones deleted?
N/A

3.7 Describe any impact on research projects.
N/A

3.8 Will this deletion affect resource areas such as library resources, physical facilities, and information technology?
Changes to physical facilities for the combined department are already in place to support the new combined program replacing the program deletions.

3.9 Describe the budgetary implications of this deletion.
While there are some initial in-kind contributions for system related work, overall budget implications would be negligible.

External

3.10 Describe any external impact (e.g. university reputation, accreditation, other institutions, high schools, community organizations, professional bodies).
N/A

3.11 Is it likely or appropriate that another educational institution will offer this program if it is deleted at the University of Saskatchewan?
N/A

Other

3.12 Are there any other relevant impacts or considerations?

3.13 Please provide any statements or opinions received about this termination.

(Optional)

4. Additional information. Programs which have not undergone recent formal reviews should provide additional relevant information about quality, demand, efficiency, unique features, and relevance to the province.
November 05, 2018

Kelly Clement
Assistant to the Associate Dean, Graduate Academic Affairs and Programs
College of Graduate and Postdoctoral Studies
University of Saskatchewan

RE: College of Medicine Support for the BMI graduate programs merger

Dear Ms. Clement:

I am writing to confirm that the College of Medicine supports the proposed merger of graduate programs within the new Department of Biochemistry, Microbiology and Immunology (BMI). This fusion of their two graduate programs has long been anticipated as an outcome of the BMI merger.

Sincerely,

David M.L. Cooper, PhD
Assistant Dean Graduate Studies College of Medicine
Professor & Canada Research Chair
Department of Anatomy, Physiology and Pharmacology
College of Medicine
University of Saskatchewan
107 Wiggins Road
Saskatoon, SK, S7L 5E5
SUMMARY ASSESSMENT - BIOCHEMISTRY

Does this program, as it is resourced, meet the expectations of quality as compared to other similar programs delivered at other institutes across Canada?

☒ Meets the expectations for a quality graduate program

What did you find most commendable about the program (maximum two)?
1. High quality of graduate students in the program.
2. Access to high quality equipment and resources for many research areas

What, if any, enhancements would you recommend at this time (maximum two)?
1. Renewal of faculty complement.
2. Continue to improve graduate student funding.

Would you recommend that students apply to this program? Would you considering hiring, recommending, or recruiting one of its graduates to your academic or research unit?

Yes

We provide a summary assessment in each sub-category, with further details provided in the full report.

1. Program Objectives and Curriculum

The program meets the standards expected of a modern graduate program in Biochemistry, with clear goals and a solid curriculum. Some minor adjustments might be considered, as detailed in the attachment.

2. Program Enrolment and Student Funding

The overall quality of the graduate student population was impressive as was their devotion to the Department. The Review Committee (RC) was concerned about the clear downward trend in student numbers, which is likely linked to reduced levels of research funding and the number of research active faculty in this Department. Recent improvements to graduate student funding is very good, and should continue. The international student tuition differential poses a very significant threat to this program and this must be seriously reconsidered.

3. Student Outcomes

Overall student outcomes, including number of publications upon graduation and fraction of cohort who find work in relevant fields appears entirely reasonable. The RC had some concerns about typical time in program for the MSc, while the typical time in program for the PhD was appropriate.
4. Learning Environment

There was a strong sense of program ownership, pride and identity amongst the graduate students, which belied the concerns of the faculty noted in the self-assessment document. The RC had major concerns about the current and proposed methods for allocating student office space; this has the potential to be very negative for the Department and must be reconsidered.

A small number of alumni raised the spectre of discriminatory treatment of some international students. Discussions with current graduate students, including a one-on-one conversation with an international student who claimed knowledge of the source of these complaints, strongly suggests this is a case of a very small number of disgruntled former students. To the best of our ability to judge, current international students feel both supported and respected by the faculty and there is no systematic issue to be addressed. There was strong support from the graduate students in favour of the current two committee meetings per year format.

5. Faculty Profile

The faculty demonstrate research strength as evidenced by a good publication record, both in terms of quality and quantity of publications in the peer-reviewed literature. As noted above, faculty renewal will be crucial for continued success of the Department. Enhancing faculty diversity will also be critical, and there is significant support in the Department for this renewal.

6. Administration

Administrative support for the program appears to be adequate, though the upcoming merger of the Department with Microbiology and Immunology might cause significant administrative challenges. The faculty have a number of concerns as to how this merger will be carried out and affect the graduate program. Significant care and attention will be required in order to ensure what is a successful research program in the College of Medicine continues and builds upon its success.

REVIEWERS

<table>
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<tr>
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<tr>
<td>Mark Glover, Dept. of Biochemistry, University of Alberta.</td>
<td>May 3rd / 2018</td>
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<tr>
<td>Matthew Paige, Dept. of Chemistry, University of Saskatchewan.</td>
<td>May 3rd / 2018</td>
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<tr>
<td>Jan Rainey, Dept. of Biochemistry and Molecular Biology, Dalhousie University.</td>
<td>May 3rd / 2018</td>
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Overview

Over a period of two days, the Review Committee (RC) met with members of the College of Graduate and Postdoctoral Studies (CGPS) – namely, the Interim Dean and Associate Acting Dean – and the College of Medicine (CoM) – namely, the Assistant Dean Graduate Studies. The RC also met with the Departmental Graduate Studies and Research Committee, including the Department Head as an ex officio member, and with members of the faculty. Facility tours of the Health Sciences complex and of the Canadian Light Source, a unique and internationally-renowned research facility that provides strong support to the graduate program, were also valuable components of the review. Finally, opportunities to meet with students from all stages of the graduate program were provided, both in an informal (lunch) setting and in a more formal session open to any interested students. The latter session was very well attended, with ~12 graduate students, giving the RC an opportunity to discuss the program with almost 2/3 of the current graduate student roster. The review concluded with exit meetings with representatives of the Department (Head and Graduate Chair) and with the CGPS (Acting Associate Dean). In all, the RC felt that it was able to develop an excellent understanding of functioning of this graduate program over the course of this intensive visit. The RC was particularly appreciative of the efforts of Mr. Nathan Risling from CGPS in coordinating the review.

The RC’s overall assessment is that the Department of Biochemistry runs a strong graduate program that is generating well-educated and trained students, produces high-quality research and provides adequate financial support to its students. Overall student outcomes are positive and the students have a strong sense of pride, program ownership and unit identity. The principal challenge faced by this program going forward is that enrollment is systematically dropping and there is an increasingly urgent need for faculty renewal to re-invigorate graduate research. Financial support for graduate students must be maintained and scaled with cost of living, which may be difficult given the current state of federal research grant support. Continued CoM graduate funding support will be crucial here, as will re-consideration of the international student differential tuition. The RC also reviewed available data to assess several alumni comments related to potential discrimination against international students. The RC was of the opinion that this was likely a case of a very small number of disgruntled students and that international students generally felt respected and supported within the Department of Biochemistry.

1. Program Objectives and Curriculum

The program meets the standards expected of a modern graduate program in Biochemistry. The curriculum is very solid with a diverse and fairly comprehensive set of course offerings. Courses are typically cross-listed with upper year undergraduate courses, with most offered every year. Students typically had no issues finding courses to complete their program though, as is often the case, available courses were not always aligned with their specific research interests. Some specialized areas were mentioned as lacking by faculty members, for example plans are in the works for an additional graduate-level course offering in the field of metabolism. Students coming from the Biochemistry BSc program at U of S also noted issues in finding courses, given the cross-listing of almost all courses with undergraduate courses. This is not an unusual situation, however, and students noted that appropriate courses were always found following some searching of offerings in other academic units. Students noted that information regarding which courses are available outside of the Department and appropriate for their programs of study is not always
communicated as effectively as possible. The Department should consider mechanisms to improve this communication.

Both students and faculty showed significant interest in developing a professional skills course. Such a course could include training in grant writing, presentation skills, teamwork, career advancement and similar areas. Direct exposure to people in the field who have chosen a variety of career paths, both the “traditional” academic stream and those outside of academia, was also considered to be an important element of such a course. The Department might consider offering this as a mandatory course for all entry level graduate students, which would serve a dual-purpose of helping to build a sense of community within a given cohort of students and in the Department more generally. There was little enthusiasm amongst the graduate students to make this an additional course requirement, as this would cut into research time; instead, students felt that this should replace one of the more traditional courses required by the program. This latter point may be particularly beneficial to students coming from the U of S BSc program, where course selection is sometimes already noted as a challenge. Faculty might consider this replacement of a traditional course, but there is reasonable concern about overly diluting core academic content.

Some students were concerned that the current structure of the qualifying exam was too focused on memorization of undergraduate-level information and not particularly useful for modern research. The faculty did not necessarily agree, seeing much of the material in the exam as core, essential biochemistry content. The RC members certainly see both sides of this issue and recognize that this is not an easy balance to maintain but encourage the faculty to ensure that the content of the qualifying exam is well-matched to the admissions expectations of the program. For example, if a BSc degree in a field other than biochemistry is considered as appropriate preparation for the graduate program, is it reasonable to expect that [all] students in the program have a comprehensive knowledge of the field or would a somewhat more focused examination that targets testing of knowledge in appropriate sub-disciplines be equally beneficial?

Finally, improvements might be made in how program guidelines and expectations are communicated to the students. Whilst a written PDF description of the program is generally given to new students, this can often be lost, forgotten or become quickly outdated. From student descriptions of the general process, it seems to often fall upon supervisors to provide program guidance. This leads to considerable variability in the quality and quantity of guidance provided. It is recommended that the new Department website provide a detailed guide to the graduate program, as well as clearly state performance expectations on programmatic exams and other formal program requirements. Having formal expectation documents readily available might help to alleviate any perception of unfairness in evaluation of students. Having clear program expectations articulated to incoming students would be likely to minimize potential issues before they arise.

2. Program Enrolment and Student Funding

While the Biochemistry graduate program continues to be one of the strongest in the College of Medicine, there is a clear downwards trend in student numbers over the last few years. This worrisome trend appears to be linked to reduced levels of external research funding, which is a problem across the country, not just in this program. However, another important factor here is a documented decrease in the number of research active faculty. Beyond recent retirements, a significant fraction of the faculty are approaching retirement age and have ramped down research intensity. Thus, there is a clear and urgent need for faculty renewal in order to ensure a vibrant graduate program. This will also provide an opportunity to improve diversity of the faculty which might, in turn, be a major asset for graduate student recruiting.
The Department offers a nationally-competitive annual stipend to its students, particularly those in the PhD program, through a combination of external scholarships, internal scholarships, devolved funds and supervisor research grant contributions. There have been recent advances in terms of student support through CoM Graduate Scholarships. This program, in particular, is an excellent initiative by the CoM and should be continued. The graduate students appreciated the recent improvements to stipend levels, and are grateful that their stipends are at the highest level in the CoM. Students also appreciated recent changes to Department policies that allowed major scholarship winners to see an increase in take-home stipends as opposed to simply benefiting their supervisors’ grant.

The Department must avoid complacency here, however. Stipend levels should be reviewed regularly to ensure that they keep pace with cost of living and fee increases. There are also major concerns related to future tuition hikes and the associated fee differential for international students. This effectively leads to an increased per-student operating grant cost to researchers, an increasingly problematic situation in the present national funding climate. This differential fee was also specifically highlighted by faculty members as a policy that is making it increasingly difficult to attract top-caliber international graduate students, particularly in a landscape where some other U15 universities have entirely done away with graduate student differential fees. The graduate students themselves also noted this as being a major barrier for recruitment and attracting students to U of S. The argument that these fees increase availability of scholarships and potentially improve funding opportunities for international students was viewed by the RC as disingenuous and that the international tuition differential represents a significant threat to this graduate research program.

The RC was somewhat surprised by the complete lack of tri-council scholarships held by graduate students in the Department. This is a concern, but not entirely surprising given the relatively small total number of students in the program and the ineligibility of international students for these awards. RC members from outside of Saskatchewan also noted that an apparent lack of graduate scholarships from the Province is unusual. This is an area of government support where the RC feels that the CGPS and/or University upper administration could seek improvement, assisting in sustainability and competitiveness of the Biochemistry graduate program.

Lack of funding for conference travel for students is an ongoing concern for the Department and students. There are clearly too few opportunities for students to network and present their work at international venues, but again, funding remains an ongoing challenge. There were several locally-organized symposia which were noted by the RC as being very positive. The RC encourages organizers to continue this very solid initiative. The CoM and/or CGPS could also consider providing additional travel support opportunities for graduate students; this would, in turn, be likely to augment tri-council scholarship success rates.

3. Student Outcomes

Outcomes for graduates from this program are in line with typical outcomes in Canada, with a high percentage of graduates being employed and a reasonable number being employed in a field related to their research. Students generally published a good to very good number of papers in peer-reviewed journals during their degree, which improves potential employment outcomes. As noted in section 2, conference participation levels are less competitive; however, the development of high-quality local symposia is a noted significant improvement given an ongoing lack of travel funds.
The RC’s main concern in this evaluation area was the length of time in program for MSc students, which has historically been too long. The cause of the long time in program was unclear, but the RC recommends that careful attention be paid by the Department to this issue. The recently implemented increase in frequency of advisory committee meetings to twice per year might help keep students’ programs on track. The time to completion for the PhD program did not suffer from this issue and meets typical program expectations.

4. Learning Environment

The self-study document suggested that the Department is suffering from low morale and is in danger of losing cohesion as a unit because of the CoM-level decision to merge Biochemistry with Microbiology and Immunology, and because the spatial separation between different labs provided minimal opportunities to interact as a single unit. However, the graduate students still had a clear sense of belonging to the Department and, indeed, strongly identity as members of the Biochemistry Department as opposed to with their various research clusters that span Departments.

The students had a strong desire to build on this sense of community within the Department. Suggestions for how to do this included consistently having graduate students take visiting speakers out to lunch; implementation of one or more student organized and hosted seminar speaker visits per academic year; and, a common course that all incoming graduate students are required take. The latter may fit well with the desire for a professional skills course, as described in section 1. The RC feels, in particular, that efforts to increase student involvement with and engagement in seminars by external speakers should be a short-term priority for the Department as this is something that could be implemented very rapidly; a common year-one course would be a longer-term priority.

There was also a strongly-expressed desire for visible celebrations of student success. For example, successful PhD defences should be publically recognized, as should publications, scholarships and similar positive results. It was also suggested that the presentation portion of thesis defences should be public, to increase visibility. The RC supports these suggestions and believes that these are simple and inexpensive ways of building a sense of community within the Department. A common poster board, computer display or similar in a prominent location might be well-suited to some of this. E-mail digests of “good news stories” to the Department as a whole would also be an effective means of communicating, given the non-centralized location of students and faculty.

An important issue that drew the RC’s attention was a small number of comments from the alumni poll that suggested the existence of discrimination against international students. The RC took this very seriously and discussed the issue with faculty, administration and graduate students. All of these meetings were informative, and we found the gravity with which these comments were treated reassuring. In particular, the RC found the meeting with graduate students to be highly informative. The RC invited international students who might have concerns about discrimination to meet with us individually, and one student approached the RC for a private discussion. The student believed they knew the source of the claims of discrimination (likely two or three students who had struggled academically with the program) and passionately defended the Department’s support for international students. As an example of this support, the student had developed some communication problems with their supervisor, and sought assistance from the Department Head to help resolve the issue. The student felt that they were listened to and treated very respectfully by all parties involved, particularly the Head, and the issue was successfully resolved. The end result was a productive, healthy and mutually-respectful student-supervisor relationship. In total, the RC
found no evidence of systematic discrimination in the Department and while our ability to thoroughly assess this during a brief review is limited, we can reasonably attribute the comments on this subject to a small number of disgruntled students. While this is not ideal, of course, it is an almost inevitable occurrence in any graduate program.

The RC has major concerns as to the current and future approach to allocating space to student offices. At present, four students are assigned to an office, with new students typically assigned to the next available space in the building, without any clear priority to locate them with group members. Available space is often far from their group’s laboratory. There appears to be a seniority system in place where students who arrived earlier are moved to more “prime” space first regardless of whether this will locate them with their research group or not. As a whole, centralized decisions of where to locate students seems deleterious. Newly arrived students, many of whom are new not only to the Department but also to Canada, are those in most need of peer-support and development of working relationships with their research group. Instead, these students appear to have the absolute lowest priority for being situated with their research group even when, anecdotally, there is a free desk available in an office where they would be co-located with their group. The RC strongly recommends decentralization of control over office space to the Department; this will allow for research groups to have their own office space and foster a closer sense of community. Issues were also raised by students about a lack of personalization of office space being allowed (e.g., nothing on the walls, no window coverings allowed despite students being required to sit next to windows that allow anyone walking by to look in, etc.) These concerns are independent of the lack of control over space allocation, but are very “real” in terms of student comfort, academic experience and overall productivity.

The RC also heard from faculty, students, and administration about a proposed initiative for “hoteling” office space, with students no longer having an assigned desk but rather a locker. In this initiative, students would simply take whichever desk was available when they arrived in their office on a given day. In our view, this is potentially very negative for the students and the Department as a whole. An even further eroding of the sense of “home” for students (notwithstanding the issues noted above) would be extremely off-putting and risks entirely disrupting any sense of ownership and community. This goes against what the Department hopes to achieve. Students and faculty alike were highly dismayed by this idea; students want a “home” in the Department and a permanent office is essential for this. The RC strongly recommends that hoteling not be implemented, at least in Biochemistry where students generally need to spend a great deal of time in the office as well as in the lab and require a dedicated space for data analysis, literature research and writing.

The Department recently changed their program to require two advisory committee meetings per year. This as seen by both students and the RC as a positive development, and this policy should continue.

5. Faculty profile

Despite the challenges associated with faculty renewal (section 2), there is still significant research strength within the Department. This is evidenced by a strong ongoing publication record in high-quality, peer-reviewed journals. While this is a relatively small department and graduate program, it nevertheless represents a broad range of biochemical research areas, with corresponding graduate teaching covering most of these, and does so successfully. There are particular strengths and, perhaps, opportunities related to the Canadian Light Source and these might be pursued more closely. Nonetheless, the challenges posed by imminent retirements and difficult federal and provincial funding environments are growing and faculty renewal will be crucial for the continued success of the Department. As noted above, a more gender-diverse
faculty complement is of growing importance with the faculty complement currently being entirely male. Faculty members also noted that some particularly important infrastructure supports are currently lacking (e.g., proteomics capabilities). This, correspondingly, was noted as a limiting factor in past recruitments which have been seen as infeasible at the CoM-level due to the up-front cost required in order to successfully develop a research program in these areas. The RC recommends that the CoM consider the degree to which infrastructure may have widespread applicability (vs. only the cost-intensive nature), even if this is initially required primarily to support a given faculty recruitment, rather than dismissing proposals for hiring outright simply based on up-front costs of that recruitment.

6. Administration

Administrative support for the program appears to be adequate, though this may change if the graduate program shows future growth. In addition, the upcoming merger of Departments could result in further stress on administration of the program, though inadequate information is currently available to analyze this in any depth. Concerns were expressed by current faculty about how the graduate program will have to change and how the merger will be carried out. The RC is of the opinion that this must be done with great care and attention to ensure that the program retains its Biochemistry focus. Recruitment and program structure both strongly hinge upon program identity as a Biochemistry program and the RC is concerned that, for example, a “Biochemistry, Microbiology & Immunology” program would not serve either academic unit well. Further loss of identity in a broader “Medical Sciences” graduate program, one of the options that the RC heard mentioned, would likely be even more deleterious for recruitment of students with the requisite training and motivation to succeed in a rigorous biochemistry-focused research-based graduate degree. The graduate program is very solid and with thoughtful renewal could further improve its success. This should be viewed as a priority for the CoM, given its stated desire to improve research intensity within the CoM. The Department of Biochemistry’s graduate program is a true research asset that can be further improved through CoM support.
In general, the Biochemistry Department is in agreement with the findings of the Review Committee. The following comments apply to the review assessments in each sub-category.

1. **Program objectives and curriculum.** (a) The department agrees that improved communication to students and faculty about graduate courses that are available to students is required. A strategy to achieve this will be developed. (b) We agree that development of a “Professional Skills Course” would be helpful in broadening the student’s perspective. The format is currently under discussion, with possible solutions being to develop a stand-alone course(s) which deals with this, incorporating Professional Skills into some of the existing courses, and/or using some of the Mitacs workshops that are available. (c) The qualifying exam may be too broad-based and might be better if it concentrated on the student’s sub-specialties in their area of research. This concern has in the past been expressed by some faculty in the department, and given the comments by the review team, is something that the Graduate Committee will investigate in earnest. (d) The review team suggested that better communication of program guidelines and expectations be provided to students, and not rely solely on supervisors who themselves may be unclear on some aspects. This may include placing some detailed documents on the department website. The department has been frustrated with the College by the lack of control it has over content placed on the Departmental website. A more general concern is the poor design of the College website. The Assistant Dean of Grad Studies in the College is aware of our concerns and has committed to improving the department’s ability to control its content on the College website.

2. **Program enrollment and student funding.** (a) We agree that the only way to reverse the downward trend in enrollment is to reverse the loss of faculty which has occurred over the last 5 years and rapidly replace retiring faculty. (b) The department commits to regularly reviewing the stipend levels to ensure that they keep pace with inflation and tuition increases. It should be noted that the department in the last year established minimum stipend levels of $19,000 and $24,000 for MSc and PhD students, respectively. (d) The differential tuition fee for foreign students is a major concern for both students and faculty. Ultimately, this money will be paid from research funds, further reducing our competitiveness.

3. **Student outcomes.** While we agree that the average length of the MSc. is too long and needs to be addressed, at least some of this problem can be attributed to a number of unusual cases that fell within the time period assessed. These included several cases of students transferred from a PhD to a MSc program, and a case of plagiarism that resulted in a significant extension to the time in program. We are hoping that increasing the advisory committee meetings to two per year will help to keep the students on track. We also feel that an area where we have been too complacent is the monitoring of thesis writing. Past practice has often been to essentially ignore student progress in thesis writing once permission to write has been granted, and this has often resulted in students taking far too long to complete the writing process. It is clear that we cannot rely on supervisors alone to monitor this progress, and some policy regarding monitoring of thesis writing by the advisory committee will be looked into.
4. **Learning environment.** (a) We agree that increasing student interaction with visiting speakers, and having students organize and host a seminar speaker, are great ways to build a sense of community amongst the students themselves and the department in general. This will be pursued in the upcoming year. (b) We agree that finding ways to celebrate student successes is a great idea and will implement some of the suggestions in the upcoming year. (c) We agree that the “hotel” model for student office space is a major concern for students and faculty and must be reconsidered. It will only lead to further erosion of a sense of “home” for students. The department, however, has little if any control over this and thus needs the attention of senior administrators in the College. (d) We were pleased to hear that complaints of systemic discrimination were likely restricted to a few disgruntled former students.

5. **Faculty profile.** As noted above, the aging faculty profile is a very serious issue and faculty renewal should start immediately.

6. **Administration.** (a) There is uncertainty as to what impact the merger of the Biochemistry and Microbiology & Immunology departments will have on the administrative load of the graduate secretary. This will be closely monitored by the two graduate chairs and the department head. (b) We agree that given the strength of the Biochemistry graduate programs, that they should be maintained separate from those of the Microbiology & Immunology department. Any future consideration of merging the graduate programs will be done with great care and attention, and should only be pursued if clear and tangible benefits can be identified.
SUMMARY ASSESSMENT - MICROBIOLOGY AND IMMUNOLOGY

Does this program, as it is resourced, meet the expectations of quality as compared to other similar programs delivered at other institutes across Canada?

☒ Meets the expectations for a quality graduate program

What did you find most commendable about the program (maximum two)?

1. **High caliber junior faculty**: The department has attracted and retained several high caliber junior faculty members over the last 10 years who continue to receive funding from several national agencies. These faculty are actively training graduate students and are contributing new expertise to the department.

2. **Impressive science** is being done by these scientists and their trainees despite the fairly modest facilities available to them.

What, if any, enhancements would you recommend at this time (maximum two)?

1. **Continue to rejuvenate the faculty**, increase research income and graduate student numbers

2. **Enhance graduate student program cohesiveness** (exams, scheduling of meetings, clear articulation of expectations, timeliness of programs) and strengthen pipeline to attract undergraduates into graduate programs

Would you recommend that students apply to this program? Would you considering hiring, recommending, or recruiting one of its graduates to your academic or research unit?

Yes. The best students from the department would be competitive in the field, nationally and internationally.

REVIEWERS

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
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<tbody>
<tr>
<td>Sabine Banniza (University of Saskatchewan)</td>
<td>April 26, 2018</td>
</tr>
<tr>
<td>Tom Hobman (University of Alberta)</td>
<td>April 26, 2018</td>
</tr>
<tr>
<td>Alice Telesnitsky (University of Michigan)</td>
<td>April 26, 2018</td>
</tr>
</tbody>
</table>
1. Program Objectives and Curriculum

1.1 Do the program objectives and the program curriculum meet the expectations of the discipline in terms of breadth, depth of coverage and interdisciplinary nature; currency of content and theory; research design and analysis (where appropriate)? To what extent does the curriculum demonstrate innovation and creativity in program design?

We don’t think so. The program purports to offer graduate studies in four general areas; Diagnosis, Epidemiology and Pathogenesis of Infectious Disease, Immunology/Virology, Molecular Genetics/Microbial Physiology and Tumor Biology/Immunology. With only 7-8 faculty members with active research programs it does not seem feasible to maintain cutting edge expertise in all of these areas. It would be better to recruit strategically and align with other microbiology/immunology strengths on the U of S campus (Veterinary College and VIDO) to develop true areas of strength.

1.2 Is the curriculum effective in content and/or delivery? Are courses sequenced and offered such that students are able to complete their programs in a timely manner? Does the program offer opportunities for meaningful specialization within the discipline?

Courses are currently taken within the first 18 months but appear to be selected based on availability rather than the specific needs of a student or his/her program. In general, the curriculum is strong but has an obvious gap in statistics/bioinformatics/big data management, which will be of increasing importance with the ubiquity of growing data sets. This has been recognized by the department, but it is not clear how the gap will be filled.

1.3 Does the program engage in a breadth and depth of interdisciplinary collaboration that stimulates the intellectual development of students and program faculty?

Considering expertise in the field is dispersed across Colleges and VIDO, better integration of the personnel, resources and facilities available on campus could build synergy and create a unique and exciting environment for graduate training in microbiology and immunology. Faculty are certainly aware of this (in part through associate appointments in other departments), but other than participation in a seminar series, students do not appear to have regular interactions with faculty members from these other programs.

1.4 Are the degree requirements appropriate in the academic context of the discipline and/or the expectations of the profession?

Yes

1.5 Are students engaged in various activities to develop and demonstrate learning (e.g. experiential learning, practica, field experiences, internships), where appropriate?

Travel grants are available to students to attend conferences and they are encouraged to do so as evidenced by the 11 to 18 conference presentations per year. Other such opportunities appear to have not been tapped into and students primarily learn in their research groups and through their course work.

1.6 Are the student learning outcomes (SLOs), knowledge and attributes for the program clearly articulated (e.g. conceptual and critical thinking, research skills and methodologies, specific skills and abilities central to the discipline, ethics, written and oral language abilities)?

Students were somewhat unsure what the expectations (e.g. manuscripts, conference papers) were in their
programs. Nonetheless, the publication records for several of the research groups appears to be strong so we are left to conclude that there is an implied expectation by supervisors in some groups.

1.7 Are the SLOs evaluated in a manner that is effective and representative of the progressive learning outcome expectations between Masters’ and PhD programs?

The program descriptions of both degrees only differ in admission standards and degree requirements. Students in both programs have to provide annual progress reports to their advisory committees through which SLOs are assessed. MSc students transitioning into a PhD program must pass a qualifying exam after 18 months that requires the critical reading of selected manuscripts and answering questions either orally or both orally and in writing. PhD students undergo an additional comprehensive exam, usually administered towards the end of the degree. Both examinations evaluate SLOs, but comprehensive exams elsewhere are considered candidacy exams and are scheduled in the first trimester of a PhD degree. PhD stream students may be better served by a qualifying/candidacy exam earlier in the program (in 3rd year for example) rather than having to pass two separate exams.

2. Program Enrolment and Student Funding

2.1 Is the quality of the applicants regarding admission averages; proportion of students with national scholarships acceptable? Is the unit making decisions that are consistent with attracting students of promise?

Students admitted to the program often have averages below 80% and thus do not qualify for a number of internal awards such as the Dean’s Scholarship and devolved scholarships. It was felt that the expansion of the medical school from 50 to 100 seats and lowering of the average to 78% for entry has diverted students away from M&I, and the success rate of attracting students from the U of S M&I undergraduate degree has decreased. Furthermore, the majority of students in the graduate program are international students and thus do not qualify for national scholarships. Faculty members felt that students with a 78-79% average are still of high quality, but their ineligibility for scholarships complicated securing financial support for them. It will be imperative to explore other avenues to ensure adequate and secure financial support for desirable students who do not meet the minimum 80% average for internal scholarship programs.

2.2 Does this program have a national reputation as a high quality program that attracts students from outside Saskatchewan or from outside of Canada?

The interest in the program from outside the country appears to be strong, but faculty struggle to attract national and U of S undergraduate students into the graduate program. While the program is rigorous in nature, it would not be considered in the top 5 programs of its nature in Canada. Unfortunately, many of the local undergraduate and MSc students transfer into professional colleges, possibly because they are unaware of the diverse career opportunities for microbiology and immunology PhDs inside and outside of academia. Strengthening undergraduate and graduate interactions and including undergrad students in upcoming seminar series in which alumni are invited back to speak about their career paths and successes may attract more local students into the PhD program.

2.3 What is your assessment of the level of graduate student support from external awards? Is it what you would expect given the scope and profile of the program?

It is below average, in part because of the difficulty to attract students with above 80% averages, and because the majority of students are international students who are not eligible for national scholarships. Furthermore, the rule of not admitting international students directly into PhD programs has prevented admission of students with international scholarships in some cases.
2.4 Is the level of student funding available through internal scholarships, awards and teaching fellowships and other sources within the norm of what is available to comparable programs at other institutions?

Yes, at present, adequate funding appears to be in place for the duration of graduate programs, but concerns were raised that impending changes in department-specific funding may jeopardize this in the near future.

3. Student Outcomes

3.1 Are the learning outcomes for the graduate degrees in the program clearly identified and comparable to other similar graduate programs?

No. At least not to the review committee. Moreover, based on our discussions with representative graduate students in this program, there is significant confusion among the trainees as well. For example, major outcomes of graduate research are publications and conference presentations. Neither we nor the students were clear as to whether first or co-author publications are a requirement or expectation for a PhD or MSc degree.

3.2. Are the student outcomes assessed regularly and effectively, with evidence that the outcome assessment is being used to inform changes or enhancements to the program?

No. Students are required to have yearly supervisory committee meetings however, these meetings do not seem to adequately fulfill their intended purposes. For example, some students expressed uncertainty and angst about moving goal posts that would extend their programs. Again, this relates back to lack of clarity with respect to expected outcomes.

3.3 Are completion rates and times reasonable in light of national or international standards?

For PhD programs yes, but MSc completion times (~35-36 months average based on last 5 years) is too long. One would expect average time of no more than 30 months to complete a MSc program.

3.4. Are the percentages of students who withdraw from the program reasonable in light of national or international standards?

No concerns.

3.5 Is the quantity and quality of student publications, presentations and awards reflective of a top quality program? Are student’s works published in peer-reviewed journals and conference proceedings.

The review committee was not provided with a separate list of student publications and without student names, it was not possible to cross reference this information from the faculty CVs of which we received only 8 of 13 faculty members. However, the aggregate total publications indicated in Table 3.4 of the Self-Study Report suggest strong productivity from the faculty of this department. But, without doing extensive Pubmed searching, it is not possible to assess the quality of student publications. We suggest that a list of student publications be provided for subsequent reviews.

3.6 Are graduates from the program successful in gaining entry into advanced graduate study (doctoral study, postdoctoral fellows, research in industry, or research institutes), entering academia, being licensed to practice or accredited for service? (whichever is discipline appropriate)

The committee felt that the information provided in Table 3.6 of the Self-Study Report was not sufficient
to understand how many MSc student applied to PhD programs but rather, only those that were admitted to PhD programs. Furthermore, the response rate (<25%) of the alumni (Table 3.7) is too low to gauge how successful graduates were in the work place.

3.7. Are the employment prospects in the areas of concentration [Microbiology and Immunology] and emphasis on this program the same, better or worse than those of comparable programs?

Because of the relation to health, agriculture, biotech, government and funding administration, the employment prospects for Microbiology and Immunology graduates is very high. This should be stressed to incoming graduate students and senior undergraduate students to retain and attract talent in this discipline.

3.8. Is the level of student satisfaction with their graduate experience and learning outcomes reflective of a quality program and a quality educational experience?

There is definitely room for improvement in this area. While the representative students were very proud of their association with the Microbiology and Immunology program, there was a palpable lack of social engagement among the trainees and faculty. This could be improved by providing regular and structured venues to facilitate more interaction between students and faculty and just as importantly, among trainees themselves.

4. Learning Environment

4.1 Are students adequately prepared and mentored in the development of critical thinking and research skills, and teaching and supervisory skills? Are there sufficient opportunities for knowledge transfer and are students participating in these activities to a high degree?

Unclear. The review committee is under the impression that this type of evaluation normally occurs during qualifying exams. However, based on student responses, it was unclear whether or not this is the case at U of S. Coupled with the fact that the comprehensive exam often occurs late in the program, the ability to assess students’ critical thinking at an early stage may be lacking. All students mentioned positive experiences in TAing.

4.2 Is there an appropriate ratio of students to active graduate faculty?

Yes. Based on the information provided to us, the department has ~20 graduate students and 7 highly active research faculty. The ratio of 3 students/faculty member seems like a healthy ratio. Please note that our assessment of the faculty members research programs was based on the 8 faculty CVs that we had access to.

4.3 What is the quality of supervision students receive from their supervisor and advisory committee? Is there sufficient evidence for appropriate oversight of graduate student mentoring and scholarly and creative activities?

While the students appreciated the ability to approach and interact with their supervisors and committee members, on a variety of topics, the expectations with respect to publications, supervisory committee meetings and completion timelines were not clear to the students that we met with. In fact, there was a notable collective frustration among the students in this regard.

4.4 How accessible and effective are the information tools (website, graduate handbook, etc.) used by the program to inform students?

Again students were confused about these issues even though much of the information is readily available
on the department website. Some of these gaps may be related to the fact that the department shares a Graduate Secretary with other departments and furthermore, this person is new in the role. Also, we were initially concerned by the fact the Graduate Chair (Sylvia) spends most of her time at VIDO however, the students were adamant that they had ready access to her and that this geographical situation was not viewed as a negative.

4.5 Do the students and faculty have access to appropriate learning and information resources such as library resources, computers, classroom equipment and laboratory facilities?

Yes except that students were very concerned about losing their “permanent” desk space. The review committee shares these concerns and challenged the students to provide alternative solutions. They responded by suggesting smaller desks and more students per office is one possible solution.

4.6 How effective are the steps being taken to improve instruction based on regular and appropriate evaluation of graduate course instruction?

We were not provided with sufficient information to answer this question.

5. Faculty Profile

5.1 Is the level of overall faculty scholarship and creative productivity within the norms for a program of this size and scope, with respect to both the quantity and quality of the work?

No. The department includes some very productive junior to mid-career investigators. However, overall, they are underachieving as a department and fall below the norms for a program of this size and scope. It appears that some members of the department are on subsistence funding. Presently, there is not enough funding to allow research expansion in the department.

5.2 Are the faculty sufficiently engaged in research, scholarship or artistic work such that the environment created enables high quality theses and dissertations?

No. A number of faculty are very active in research, but this does not seem to translate into a vibrant and exciting atmosphere in the department. The students appreciate the approachability and informal nature of faculty-student interactions, but the students convey that they are not adequately challenged and scientific passion is uneven but overall seems low.

5.3 Is the majority of graduate teaching and supervising of graduate students being done by faculty with active and productive research programs?

Yes. Because of the linkage of funding with admission, most graduate students are engaged in active and productive labs.

5.4 Is there integration between scholarship and teaching? Does faculty bring their scholarship to their graduate teaching and mentorship?

Most of the graduate courses taught in the department are essentially dual undergraduate/graduate courses. As such, graduate students who attended the U of S as undergrads took departmental offerings as undergrads and therefore do not enroll in M&I graduate courses for the most part. In this sense, teaching and scholarship are separated, but this is fairly standard for a Canadian system.

5.5 Is the number of faculty members holding grants proportionate to the averages of other units in the discipline in competitive awards?
No, this is due to the current demographics where about 40% of the faculty appear to be winding down their programs. This underscores the urgent need to recruit new research-intensive faculty.

**Active:**
- Linda Chelico - CIHR funding
- Joyce Wilson - CIHR funding
- Silvia van den Hurk - NSERC funding, recent CIHR
- Jo-Ann Dillon - recent CIHR funding NSERC
- Wei Xiao - large NSERC grant, recent foundation support. Significant contributions to collaborations and solid contributions as corresponding author in signalling and FEBS journals.
- Kerri Kobrin: NSERC good recent papers (NAR, etc)
- Sidney Hayes: low recent NSERC funding; smattering of first author virology papers—looks unlikely to renew

**Newly recruited:**
- Kerry Lavender

5.6 Is the level of unit and/or faculty contribution to graduate student support reflective of discipline appropriate norms?
Yes, the well-funded faculty are devoting appropriate funds to graduate training.

### 6. Administration

#### 6.1 Is the financial assistance package (scholarships, GTFs, GTAs) available to graduate students adequate?
Yes, students are currently supported through scholarships, GTFs and GTAs, as well as stipends paid from grants. Concerns were expressed that withdrawal of $87K for GTAs by the College will jeopardize the financial stability for graduate student support.

#### 6.2 Are the operating procedures and structures of the unit sponsoring the program consistent with discipline appropriate norms?
We are not sure what information is being sought here and as such, are not able to provide an informed opinion.

#### 6.3 Does the grad program engage, appropriate to the norms of the discipline, in a self-reflection on “where are we now” and in a planning effort on “where do we want to go” within the discipline?
We got the impression that the department is aware of its weak points and have put thought into strategies to change this. They recognize that a major impediment for further development will be the hiring of new faculty, which may or may not happen considering the financial situation of the university. They were less aware of how the department is perceived by the graduate students who thought that although faculty members were very approachable, the department as a whole did not feel like one unit. They thought that more social interactions as a group would be very good.
6.4 Is there concern with the number of problems or issues referred to the College of Graduate and Postdoctoral Studies?

The self-study document did not indicate any unusual problems and the drop-out number and causes appear to be within the norms of similar programs.

6.5 Are there sustained, effective and purposeful recruitment and admission efforts?

The department is very keen to increase the number of local students and has been engaging more with undergraduates through presentations on research programs, hiring undergraduate students as summer students, and establishing an undergraduate research project course. Regarding the latter, they are developing a third-year research-based course that will allow students to connect with the ongoing research in the department. Enhancing interactions with second-year students enrolled in a popular M & I course during their annual poster session also is encouraged.

6.6 Is there evidence that the unit sponsoring the program is dealing with program and students issues effectively and efficiently?

In general, yes. The six graduate students (out of 20 total) that attended the meeting with the review committee were happy to be in the department. However, contact with alumni appears to be weak considering the low response to the survey.

6.7 Is there evidence that the strategic vision of the program is aligned with the broader integrated planning environment at the university?

Yes, young and mid-career faculty have tri-council funding, they are keen to attract undergraduate students and the large cohort of international graduate students certainly contributes to the internationalisation of the university.
MEMORANDUM

TO: Dr. Sylvia van den Hurk – Graduate Chair, Microbiology and Immunology

CC: Dr. Jo-Ann Dillion – Department Head, Microbiology and Immunology
     Dr. David Cooper – Assistant Dean Graduate Studies, College of Medicine
     Dr. Preston Smith – Dean, College of Medicine

FROM: Dr. Trever Crowe – Interim Dean, College of Graduate and Postdoctoral Studies
      Dr. Tony Vannelli – Provost and Vice-President Academic

DATE: 29 October 2018

SUBJECT: Graduate Program Review of M.Sc. and Ph.D. in Microbiology and Immunology

The University of Saskatchewan is committed to being a major presence in graduate education and adhering to international standards in all that we do. Graduate Program Review is an important tool for measuring our success against those goals. We would like to take this opportunity to thank you and your colleagues for participating in this review process.

The reviewers stated that your program meets expectations for a quality graduate program. The Review Report provided evidence of program quality in several key areas, including:

- the Department’s success in attracting and retaining high quality junior faculty
- the “impressive science” being done by faculty and students

The Report also provides recommendations to help the program evolve and grow. These recommendations include:

- a need for faculty renewal
- a need for increased recruitment of undergraduate and M.Sc. students
- a need to clarify student expectations and enhance program cohesiveness

You have acknowledged the validity of these concerns and provided additional clarification where necessary. Several initiatives to improve the student experience were identified in your response to the review. You might consult with the Gwenna Moss Centre for Teaching and Learning to support your plans for curriculum enhancement. There may be mechanisms to support student recruitment, and we invite you to engage with the College of Graduate and Postdoctoral Studies on this topic. Consistent with targets set out in the University’s Strategic Enrolment Management plan, we expect that the Microbiology and Immunology program will support the College of Medicine’s efforts to increase graduate student enrolment. We encourage the College of Medicine to promptly respond to concerns about the general issue of space allocation for graduate students and research activity within the college.

Though the schedule has not been confirmed, it is likely that the next review of your program will take place in 2025-26. In advance of your next review, we anticipate that you will have systematically and strategically explored ways to incorporate the reviewers’ recommendations into the development of your program.

We encourage you to engage the College of Graduate and Postdoctoral Studies in your program improvement processes. The College is eager to support in the continued growth of your program. In
addition, you may be able to draw on financial support from the Curriculum Innovation Fund. The fund will provide matching contributions to unit investments in program enhancements. The fund is coordinated through the office of the Vice-Provost, Teaching, Learning and Student Experience.

In addition, you may be able to draw on financial support from funds coordinated by the Gwenna Moss Centre for Teaching and Learning. These funds include the Experiential Learning Fund, the Provost’s Prize for Collaborative Teaching and Learning, and the Open Educational Resources Fund.

In closing, we would like to again thank you for your very effective engagement in the graduate program review process over the past year.

Sincerely,

[Signature]

Trever Crowe
Interim Dean, College of Graduate and Postdoctoral Studies

[Signature]

Tony Vannelli
Provost and Vice-President Academic
Policies and Procedures

Graduate Programs in Biochemistry, Microbiology and Immunology.
University of Saskatchewan

September 2019
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1. Introduction

The Biochemistry, Microbiology and Immunology (BMI) Department offers both M.Sc. and Ph.D. degrees. The purpose of this manual is to provide additional information concerning these programs which may not be available on the College of Graduate and Postdoctoral studies (CGPS) web site (see https://www.usask.ca/cgps/policy-and-procedure/index.php) or the Departmental web site (https://medicine.usask.ca/department/schools-divisions/biomed/biochemistry,-microbiology-and-immunology.php).

2. Application and admission

Prospective students interested in BMI should learn about the department, its research activities, and the availability of opportunities by visiting its web site at: https://medicine.usask.ca/department/schools-divisions/biomed/biochemistry,-microbiology-and-immunology.php. This site also provides a list of “research-active” faculty.

[a] Eligibility:

*note: current CGPS minimum admission standards apply. The qualifications indicated below are being proposed for the 2021-2022 admission cycle. They indicate standards to be competitive.

M.Sc. admission requires an honours Baccalaureate (or equivalent) from a college or university of acceptable standing, and equivalent to the degree at this university with a specialization in BMI or a related discipline. A cumulative weighted average of at least 75% (U of S grade system equivalent) is the minimum standard. (Students with a lower average may be accepted under exceptional circumstances).

Ph.D. admission requires a Master's degree, or equivalent, from a recognized university in an academic discipline relevant to the proposed field and a cumulative weighted average of at least 80% (U of S grade system equivalent) In order to assess the quality of the student’s M.Sc. degree the BMI Graduate Committee will review the thesis and any published papers. If the M.Sc. is not deemed to be equivalent, then the applicant must enroll as a M.Sc. student and take a Ph.D. qualifying exam within the first 2 years (see regulations for this below).

If English is not your native language, you must arrange for a certified result of the "Test of English as a Foreign Language" (TOEFL) or International English Learning Test Score (IELTS) to be sent directly to us. Note that our department requires a minimum score of 90 (TOEFL, with a minimum of 20 in each area) and 6.5 (IELTS, with a minimum of 6.5 in each area). For those who are unable to get access to TOEFL or IELTS exams, alternative English language exams recognized by the CGPS are acceptable. Please visit the above web site for more information https://grad.usask.ca/admissions/admission-requirements.php#11Englishlanguageproficiencyrequirements.

[b] How to apply:

1. If you intend to apply to the BMI graduate program, it is required that you first find a faculty member in our Department who will agree in advance to be your research supervisor (assuming that all other conditions are met). Please contact those individuals whose research you find interesting. Applications can be made at any time.

2. Once you have identified a faculty member who is willing to be your supervisor, you will have to formally apply to the graduate program through the CGPS. The graduate studies application fee is $90 CDN and is NOT refundable. Completion of CGPS’s online application form requires that original academic transcripts and formal proof of English proficiency be provided.

3. Once the BMI Department has recommended admission to CGPS, the CGPS will need to
approve the admission and issue an offer of admission before you can begin your studies.

Although students may apply to enter our graduate program at any time, the university calendar year begins in September and graduate classes are offered either in September (Term 1) or in January (Term 2). The first round of the Dean’s Scholarship is due on December 1st but in any event, complete applications for admission must be received by February 1 in order to be considered for scholarship funding beginning the following September. North American applicants should apply a minimum of 4 months prior to anticipated start date, while due to visa processing, international applicants should apply a minimum of 6 months prior to your anticipated start date.

3. Graduate program

[a] Minimum program requirements;

At the beginning of the program, the student in consultation with the supervisor will prepare a research proposal that will be submitted to the graduate advisory committee to assess its suitability (Guidelines attached). A new graduate student should have the first Advisory Committee meeting within four months after registration to establish a Program of Studies (POS) outlining the research, ethics requirements, course work, and committee members.

For both M.Sc. and Ph.D. programs the major requirement for continuation in the program is progress in all components. This includes progress in course work, research, written and oral presentation skills, and thesis writing. If, at any time, the supervisor, committee chair or any other member of the student’s advisory committee has reason to believe that progress is not satisfactory then a committee meeting should be called immediately to discuss and address the issue(s).

Course work: For the M.Sc. program the student must take 9 credit units consisting of graduate level (800) courses with a 70% cumulative grade point average, with no individual mark being below 60%. The committee may recommend additional courses at any level in order to bolster a student’s knowledge in perceived areas of weakness and/or to complement the research program.

For the Ph.D., no graduate level (800) courses are required. In some cases, additional courses may be recommended by the student’s committee to bolster a student’s knowledge in perceived areas of weakness and/or to complement the research program. (Note: It may be beneficial for students to take several 800 level courses to increase their chances of winning scholarships but a cumulative gpa of 80% is required with no individual mark being below 70%).

Graduate Student seminars: Graduate students are required to present one seminar each year on their research progress as part of a graduate seminar course (BMI990). Yearly registration and attendance in BMI990 is required throughout the graduate program.

Research progress: Progress in research will be assessed by the committee annually (usually in May) on the basis of a short but formal presentation and by submission of a progress report to the advisory committee at least one week before the scheduled committee meeting. The written report should contain a brief overview of relevant background, hypotheses, experimental methods, results and future plans. A list of
references is required. The report should include background, hypotheses, experimental methods, results and future plans. A list of references is required. The report should also include a list of courses completed and those remaining to be taken, and achievements (e.g., publications, conferences and awards) during the past year.

The students should address the questions raised in previous meeting(s) in their progress report. It is the responsibility of the supervisor to make sure that the questions previously raised have been addressed. (A section “issues to be addressed prior to next meeting” will be added to the minutes to help address this problem.)

Please remember to follow the guidelines (see attached). The report is not supposed to be a mini-thesis so the introduction should be brief (maximum 4 pages, 1.5 spacing). The committee is trying to assess the progress in the last year so it is helpful to start the results with a brief overview of the previous results. Please make it absolutely clear which are the new results.

The Progress report should be submitted to the supervisor in early April at least 3 weeks before the meeting date for a thorough review and suggested revisions should be made before it is submitted to the members of the committee at least 7 days before the meeting date. If the guidelines are not followed it will be returned to the student for revision and the meeting will be rescheduled. The main committee meeting will be held in May.

In addition, there will be a second, shorter meeting in November at which the student will again present a short talk and an addendum to the progress report (submitted by November 1st) which only describes progress in the last 6 months (maximum 2 pages, 1.5 spacing, + figures).

Presentation skills: Oral communication skills will be assessed on the basis of the talks to the committee as well as the formal presentations in journal club (BMI890 or equivalent). Written communication skills will be assessed on the quality of the initial proposal and the subsequent progress reports. If required, the committee should expect to see a significant improvement in both oral and written abilities as the student progresses through the program. (Note: Many language courses are available on campus particularly for foreign students and the advisory committee should recommend these when deficiencies are noted or difficulties are encountered. Information can be found at [https://students.usask.ca/international/#InternationalStudentandStudyAbroadCentre](https://students.usask.ca/international/#InternationalStudentandStudyAbroadCentre).

Student progress with respect to course requirements and other exams will be discussed during the meeting. At the end of the meeting, the student MAY be asked to leave the room for the Committee to discuss relevant issues. The Chair of the committee should provide a written report of the meeting to be sent to the Committee members for review, then the Graduate Secretary for data entry, submission to CGPS and filing. If necessary, the Chair may delegate a Committee member to take scientific minutes to be communicated to both Committee members and the student. The written minutes of the meeting will be made available to the Supervisor, Grad Chair and the graduate student through PAWS (online).

Thesis writing: (See attached guidelines and section [3f] below) In general, it should require between 3 to 4 months to write the thesis for MSc and PhD students respectively. Progress should be monitored initially by the supervisor with guidance from the committee if there are delays. Students should understand that the thesis must be approved, first by the supervisor, second by the advisory committee chair and finally by the committee before being sent to the external examiner. Each step takes time, usually a minimum of three weeks, and revisions may be required at each step. Even after the thesis defence, major revisions may be required. Therefore, PLEASE allow 3-4 months after submission of the thesis to the supervisor before
accepting another appointment or leaving the country!

When the student has finished or nearly finished his or her research, an Advisory Committee meeting will be held at which the student will present major experimental data to be included in the thesis along with a draft Abstract and Table of Contents to the committee members. The committee members will discuss the proposed thesis content and indicate their approval for the preparation of the thesis. This committee meeting will be independent of the student’s mandatory annual committee meeting, although it may take place concurrently. (If deemed reasonable the discussion can also take place by email). Three possible outcomes may arise from this meeting:

- The student is given unconditional permission to write thesis.
- The student is given permission to write thesis pending completion of certain set(s) of experimental data.
- The content is deemed insufficient for writing thesis and additional experimental data are required for the Committee to review the progress.

Once a student has begun writing the thesis, it is in the student’s as well as the department’s interest that the writing and defence proceed efficiently. Recognizing that the mode of interactions between supervisors and students varies considerably, the following guidelines are expected to be adhered to once a complete draft of the thesis is in the hands of the supervisor.

- Review of a first complete draft by the supervisor; four weeks.
- Review of a second complete draft by the Advisory Committee; three weeks.
- Review of a third draft by the Advisory Committee; two weeks (optional)
- Review by the External examiner; three weeks (M.Sc.) or six weeks (Ph.D.)

Students should take account of these timelines when planning the final preparation and defence of their thesis. For example, once the thesis draft is ready for submission to the Advisory Committee, the student can expect a time lag of a minimum of $3 + 2 + 4$ weeks (a total of 8 to 10 weeks) before the date of the defence, the last three or four weeks being required for the reading of the thesis by the external examiner for M.Sc. and Ph.D. theses respectively.

[b] Duration;

In general, it is expected that a M.Sc. should be completed in 2.5 to 3 years. Extension beyond 5 years requires the permission of CGPS. For completion of a Ph.D. the time frame is longer, between 4.5 to 5.5 years. Extension beyond 6 years requires the permission of CGPS. Students can request a leave of absence due to health or compassionate reasons. It is important to make arrangements with your supervisor and chair of the advisory committee well in advance if possible. Leaves must be approved in accordance with CGPS policy.

[c] Teaching;

All students are encouraged to amass as much teaching experience as possible.
As part of the program, all students will be expected to demonstrate in one of the lab courses. This involves helping the undergraduates in the lab one afternoon/week as well as marking lab reports. There is a stipend for this work that is dictated by the PSAC collective agreement. All MSc students should have a minimum of one and PhD students a minimum of two TA experiences during their respective programs. A student can exceed this minimum level as long as there is mutual agreement between the supervisor and student.

In addition, the BMI Department offers several online courses in which graduate students may participate by acting as mentors and leading small-group discussions. (Refer to PSAC for the salary, but it is restricted to BMI students.)

It is expected that time spent teaching/demonstrating will not come at the expense of the student’s research.

[d] Transfer from M.Sc. to Ph.D.

Some students may seek permission from their supervisor and Advisory Committee to transfer from a M.Sc. program to a Ph.D. program before completing the requirements of the M.Sc. program, and without preparing and defending a M.Sc. thesis. This option is normally reserved for students who are doing very well in the M.Sc. program as demonstrated by a well-developed research project that can form the basis for a Ph.D. and who show great promise for success at the Ph.D. level as demonstrated by above average written and oral communication and demonstration of critical thinking skills. M.Sc. students who have completed at least 9 credits of graduate coursework, with a grade point average of 80% or higher with no mark below 70% may seek permission to transfer to the Ph.D. program as early as one year after entering the program but must do so before the end of their second year. M.Sc. students who have been in the program more than two years will not be permitted to transfer to the Ph.D. program. M.Sc. students must also pass a qualifying exam (see below). For the purpose of transferring, a student will not be permitted a second attempt at the qualifying exam. Transfers from the M.Sc. program to the Ph.D. program will be processed by CGPS once the student meets the eligibility requirements.

[e] Ph.D. qualifying exam;

The Ph.D. qualifying exam is an oral exam and is designed to test the student’s general scientific knowledge in two areas which are preselected by the supervisor and Advisory Committee.

The BMI Graduate Affairs committee will appoint two faculty members who are members of the advisory committee, the Graduate Affairs committee, or BMI faculty members, to be examiners. Each examiner will provide a short list, often 2-3 references (research article and/or review article) related to the subject, with a few sample questions to focus the students’ preparation for the oral examination. A minimum of 60 days will be provided for the scheduled exam date. The examination will take place three weeks after the student receives all references and sample questions. The examination questions will be related, but not limited, to the references provided. The purpose of the examination is to assess the student’s ability to synthesize scientific knowledge, to analyze the experimental data, and to apply the knowledge to critical thinking. The examination will be a maximum of 3 hours.

The examination Committee consists of the two subject examiners and the Chair of the advisory committee. After the oral examination is complete, the Committee will discuss and vote Pass or Fail on each subject. If a student fails one or both subjects, she/he may request a second examination which also requires permission of CGPS. The examination will take the
same format.

Please note that the student’s supervisor is not allowed to attend this exam. It is expected that time spent preparing for the exam will not come at the expense of the student’s research.

Once the student has passed the qualifying exam, he/she must submit a PhD program of study. A committee meeting including required new members must take place to approve the student’s Program of Study (POS).

[e] Ph.D. comprehensive exam;

All candidates for the Ph.D. degree are required to pass a comprehensive examination. This examination is usually on topics cognate to the candidate’s field of research and is used as a means of judging whether the individual has a mature and substantive grasp of the discipline as a whole. A comprehensive knowledge of the subject will not only help to validate the Ph.D. student as an expert in the general field of choice, but will also complement research activity in the specific area under investigation. Normally, the comprehensive exam should be held within 2-3 years of admission into the Ph.D. program or transfer from the M.Sc. program but before submission of a Table of Contents and formal “Permission to write” (see below). The comprehensive exam will be scheduled 60 days in advance and will consist of a written and oral examination conducted by the Advisory Committee. The student, in consultation with his/her supervisor, will choose from one of two formats:

1. Question based.
   Each Advisory Committee member will provide two questions related to the student’s research interest to the Committee Chair, who will assemble them into 8 questions and pass them on to the student. The student’s written response to each question (approximately 1 to 3 pages double-spaced per question) will be submitted to all the Committee members three weeks after receiving the questions and the oral examination will then take place one further week later.

2. Grant proposal.
   The Advisory Committee will decide a subject area related to the student’s research interest in consultation with the student. Once the subject has been approved, the student will have up to three weeks to prepare the proposal and distribute it to the Advisory Committee. The format of the grant proposal will be that required for NSERC as found on the current NSERC website, and comprised of the Summary of Research Proposal and Research Proposal sections (i.e. 10 pages double-spaced plus references and figures). The oral examination of the proposal will take place one week after it has been submitted to the Advisory Committee.

The oral examination involves all the Advisory Committee members and questions will be related, but not limited, to the written response or grant. After oral examination, the student will be asked to leave the room and the Advisory Committee members will discuss and vote for both written and oral components of the examination. Written comments on the examination may be provided to the student by the Chair. Candidates will be assessed on the oral and written components on a pass/fail basis.
Only upon successful completion of the comprehensive examination at an appropriate time during the program is a student permitted to continue scholarly activity towards the Ph.D. degree. The comprehensive examination may be repeated once with the permission of the Dean of CGPS. The results of all comprehensive examinations must be reported to the CGPS. A second failure will result in the student being required to withdraw from the program. This failure may be appealed to the Graduate Academic Affairs Committee on substantive or procedural grounds.

[f] Preparation and thesis defense. (See “Progress in thesis” for time line and guidelines);

When a student and his or her Supervisor believe that the research work is complete, the student must ask the Advisory Committee for permission to write a thesis. This request can be made at any time. A table of contents must be sent to the advisory committee for approval. The Advisory Committee must satisfy itself that the quantity and quality of the research is adequate, and that the student has a good grasp of his or her own work in relation to the existing knowledge base in the area of specialization. The Advisory Committee will either grant permission to stop research and concentrate on data analysis and thesis preparation, or specify additional research work that must be carried out.

Theses may be produced in either the traditional style or the ‘manuscript’ style, which consists of a manuscript, or cohesive series of manuscripts, written in a style suitable for publication in appropriate venues.

A final oral defense of the M.Sc. thesis will be conducted with an Examining Committee that includes the members of the Advisory Committee plus an External Examiner who is a member of another Department of the University, and who has not been a member of the student's Advisory Committee and is approved beforehand by the graduate chair. The Examining Committee for a M.Sc. defense will be chaired by the Chair of the Advisory Committee.

A final oral defense of the Ph.D. thesis will be conducted with an Examining Committee that includes the members of the Advisory Committee plus an External Examiner from outside the University and approved beforehand by the CGPS. A designate of the Dean of CGPS acts as Chair of the Examining Committee at a Ph.D. defense.

Both the M.Sc. and Ph.D. thesis defense are in the form of an oral examination, up to three hours in length. Immediately before the oral thesis defense, the student will present a 45 minute open seminar on the thesis work, to satisfy the final requirements for BMI 990. The seminar is followed by a closed question and answer defense of the thesis work.

4. Administration of the program
[a] Departmental Graduate committee;

The general functions of the Graduate Committee of the Department of BMI are to administer the graduate programs, to ensure that each graduate student fulfills the requirements necessary for an advanced degree in BMI, and to ensure that the standards of the Departmental graduate program are maintained.

[a] Supervisor:

The supervisor is the faculty member directly responsible for overseeing your research. The selection of a supervisor should be completed by mutual agreement among student, supervisor and the Department. The supervisor must be a faculty member of the CGPS and should be familiar with the rules and procedures of the department, the CGPS and those of the
Both student and supervisor are responsible for ensuring that all CGPS and departmental regulations and requirements are observed and met.

[b] Advisory committee;
The Advisory Committee for each graduate student functions to approve the Program of Study (course work and research program) as well as to ensure that the student satisfies all of the requirements of the Graduate Program in BMI. Major changes in the student’s program requires the approval of the Advisory Committee. The Advisory Committee also provides a source of information and counsel for graduate students. In this way, the graduate student will be exposed to a variety of opinions and ideas and can obtain help from individuals with particular expertise required for some aspect of the research project. Members of the Advisory Committee are also available for consultation concerning problems in situations where the student does not wish to approach their supervisor. If a conflict arises between the supervisor and the student, the supervisor should attempt first to resolve any problems informally with the student. If informal discussion does not lead to a resolution, then the Graduate Chair and advisory committee should be consulted. If this is not successful, then the Dean of Graduate and Postdoctoral Studies will be consulted. Similarly, if the student encounters problems then he/she should contact the chair of the advisory committee who will advise accordingly.

The Advisory Committee is composed of the Supervisor (and any Co-Supervisor), a Chair, and other faculty members of this or other departments, chosen by the Grad Chair and the Supervisor. The minimum number of members of a M.Sc. Advisory Committee is three. The minimum number of members of a Ph.D. Advisory Committee is five, including at least one member from another, cognate department. A Supervisor and a Co-Supervisor count as one member in terms of voting.

The Advisory Committees will meet regularly in May of each year to receive the Annual Progress Report from each graduate student. A second shorter meeting will also be required in November. The Advisory Committee may also meet at any other time at the request of the graduate student, the Supervisor, the Chair of the Advisory Committee, or the Chair of the Graduate Program Committee.

[c] Student/supervisor agreement;
See attached appendix.

5. Financing graduate school

[a] Sources of funding;
Supervisors are responsible for ensuring that each graduate student receives a stipend which meets a minimum departmental standard. Currently, departmental minimums are $19,000 per year for M.Sc. students and $24,000 per year for Ph.D. students. Termination of funding cannot be made unilaterally by the supervisor and requires a meeting of the advisory committee. In the absence of any scholarships or bursaries, this stipend will usually come from research grants held by the Supervisor. However, it is beneficial for both the student and the Supervisor if some or all of the support for the student is derived from scholarship or assistantship funds. Support from external sources generally provides a higher stipend than support from internal (University of Saskatchewan) sources. In particular, a student who wins a scholarship (e.g. CoMGrad, Sask. Innovation or federal funding) will have their minimum stipend increased as follows:
MSc. $19K + 50% of the non-matched portion of the award to a maximum of $29K.
Ph.D. $24K + 50% of the non-matched portion of the award to a maximum of $36K. For example: If a MSc. student gets a CoMGrad award (unmatched amount of $10K) then the stipend will increase to $24K of which the supervisor is responsible for $14K. i.e. both the student and supervisor benefit.

It should be noted that [a] these stipends are subject to the conditions of the award; for example, some fellowships cannot be held simultaneously, [b] devolved funds are not included and [c] stipends will revert to the base line if the fellowship is terminated.

Special case of CSC students.

The CSC PhD scholarship funding (currently $19,200/annum) requires the supervisor to pay the tuition of the student (in addition to topping up the salary to $24K as per departmental guidelines). Therefore, CSC students will be excluded from the 50% top-up stipend policy that is in place for other external scholarships.

Departmental Assistance.

The department awards scholarships in August, adjudicated by the chair of the Graduate Committee in consultation with the head. These scholarships are supported by devolved University Graduate Scholarship funds, devolved College of Medicine Graduate Scholarship funds, and departmental funds. Further information can be found in the appendix.

Financial assistance from the College of Medicine.

A limited number of Graduate Teaching Fellowships and Graduate Teaching Assistantships are awarded by the College of Medicine. Applications are submitted through the departmental Graduate Committee.

A limited number of Graduate Research Fellowships are awarded by the College of Medicine. Applications are submitted through the departmental Graduate Committee.

The Arthur Smyth Memorial Scholarship is available through the College of Medicine. These awards are intended for especially meritorious students who are nearing the end of a Ph.D. program. Applications are submitted through the departmental Graduate Program Committee.

CoMGrad scholarships are awarded biannually. Submission dates and application forms will be circulated to students when available.

Financial assistance available from the College of Graduate and Postdoctoral Studies

The CGPS offers the Dean's Scholarship for especially meritorious students. Preference is given to students entering the first year of a Ph.D. program, although entering M.Sc. students are also eligible. Applications are submitted through the departmental Graduate Program Committee.

From time to time, the CGPS announces the availability of Graduate Service Fellowships, which involve payment for various tasks or service within the University of Saskatchewan. Students who are receiving major support from other sources are ineligible, so it is unlikely that our graduate students will be able to take advantage of this program.
The Saskatchewan Innovation and Opportunity Graduate Scholarship is offered for graduate students conducting research in specific priority areas. Eligible current students will be invited to apply online. The department will also be invited to nominate a restricted number of external applicants each year. [www.saskatchewan.ca/residents/education-and-learning/scholarships-bursaries-grants/scholarships/saskatchewan-innovation-and-opportunity-scholarship](www.saskatchewan.ca/residents/education-and-learning/scholarships-bursaries-grants/scholarships/saskatchewan-innovation-and-opportunity-scholarship)

Financial assistance available from external sources

A. National Science and Engineering Research Council (NSERC). Students may apply for M.Sc. or Ph.D. level awards to support their studies. Generally, students must be working in a NSERC-funded laboratory to be eligible for these awards. Application guidelines, materials and instructions are available at: http://www.nserc-crsng.gc.ca/Students-Etudiants/index_eng.asp (available to Canadian residents only)

B. Canadian Institutes for Health Research (CIHR). Students may apply for M.Sc. or Ph.D. level awards to support their studies. Generally, students must be working in a CIHR-funded laboratory to be eligible for these awards. Application guidelines, materials and instructions are available at (click 'funding opportunities'): [http://www.cihr-irsc.gc.ca/e/37788.html](http://www.cihr-irsc.gc.ca/e/37788.html) (available to Canadian residents only)

C. A wide variety of additional internal and external awards are available, most of which are directed towards particular areas of study or particular categories of applicants. Students are strongly encouraged to explore the opportunities available. A comprehensive list of additional scholarship opportunities is maintained by the CGPS at: [http://grad.usask.ca/awards/index.html](http://grad.usask.ca/awards/index.html)

[b] Travel funds;

Students are encouraged to go to conferences. Approximately $1500 may be available from the college and $350 (Canadian) or $550 (international) from the University at least once during the program.

BMI Graduate Application Checklist


___ Three Recommenders - provide 3 email addresses into the online application

___ Curriculum vitae/résumé

___ Statement of research interest/research experience

___ $90 Canadian application fee paid on line

*Required, but sent separately*
Sealed, Official versions of all transcripts

Official English Test score (GSR English Language Requirement Information)

Please mail the completed application package to:

Graduate Programs
BMI
College of Medicine
University of Saskatchewan
2D01 HLTH, 107 Wiggins Road
Saskatoon, Saskatchewan, Canada
Consultation with the Registrar Form

This form is to be completed by the Registrar (or his/her designate) during an in-person consultation with the faculty member responsible for the proposal. Please consider the questions on this form prior to the meeting.

Section 1: New Degree / Diploma / Certificate Information or Renaming of Existing

1 Is this a new degree, diploma, or certificate? [ ] Yes [ ] No [X]
   Is an existing degree, diploma, or certificate being renamed? [ ] Yes [ ] No [X]
   If you've answered NO to each of the previous two questions, please continue on to the next section.

2 What is the name of the new degree, diploma, or certificate?

3 What is the credential of this new degree, diploma, or certificate? [Example - D.M.D. = Doctor of Dental Medicine]

4 If you have renamed an existing degree, diploma, or certificate, what is the current name?

5 Does this new or renamed degree / diploma / certificate require completion of degree level courses or non-degree level courses, thus implying the attainment of either a degree level or non-degree level standard of achievement? [ ] Yes [ ] No

6 If this is a new degree level certificate, can a student take it at the same time as pursuing another degree level program? [ ] Yes [ ] No

7 If YES, a student attribute will be created and used to track students who are in this certificate alongside another program. The attribute code will be:

8 Which College is responsible for the awarding of this degree, diploma, or certificate?

9 Is there more than one program to fulfill the requirements for this degree, diploma, or certificate? If yes, please list these programs.

10 Are there any new majors, minors, or concentrations associated with this new degree / diploma / certificate? Please list the name(s) and whether it is a major, minor, or concentration, along with the sponsoring department.
   [One major is required on all programs [4 characters for code and 30 characters for description]

11 If this is a new graduate degree, is it thesis-based, course-based, or project-based?
Section 2: New / Revised Program for Existing or New Degree / Diploma / Certificate Information

1. Is this a new program?
   Yes [ ] No [X]
   Is an existing program being revised?
   Yes [ ] No [X]
   If you've answered NO to each of the previous two questions, please continue on to the next section.

2. If YES, what degree, diploma, or certificate does this new/revised program meet requirements for?

3. What is the name of this new/revised program?

4. What other program(s) currently exist that will also meet the requirements for this same degree(s)?

5. What College/Department is the academic authority for this program?

6. Is this a replacement for a current program?
   Yes [ ] No [ ]

7. If YES, will students in the current program complete that program or be grandfathered?

8. If this is a new graduate program, is it thesis-based, course-based, or project-based?
Section 3: Mobility

Mobility is the ability to move freely from one jurisdiction to another and to gain entry into an academic institution or to participate in a learning experience without undue obstacles or hindrances.

1. Does the proposed degree, program, major, minor, concentration, or course involve mobility?
   If yes, choose one of the following:
   - Domestic Mobility (both jurisdictions are within Canada)
   - International Mobility (one jurisdiction is outside of Canada)

2. Please indicate the mobility type (refer to Nomenclature for definitions).
   - Joint Program
   - Joint Degree
   - Dual Degree
   - Professional Internship Program
   - Faculty-Led Course Abroad
   - Term Abroad Program

3. The U of S enters into partnerships or agreements with external partners for the above mobility types in order to allow students collaborative opportunities for research, studies, or activities. Has an agreement been signed?

4. Please state the full name of the agreement that the U of S is entering into.

5. What is the name of the external partner?

6. What is the jurisdiction for the external partner?
Section 4: New / Revised Major, Minor, or Concentration for Existing Degree Information (Undergraduate)

1. Is this a new or revised major, minor, or concentration attached to an existing degree program? Yes ☐ No ☒ Revised ☒
   If you've answered NO, please continue on to the next section.

2. If YES, please specify whether it is a major, minor, or concentration. If it is more than one, please fill out a separate form for each.

3. What is the name of this new / revised major, minor, or concentration?

4. Which department is the authority for this major, minor, or concentration? If this is a cross-College relationship, please state the Jurisdictional College and the Adopting College.

5. Which current program(s), degree(s), and/or program type(s) is this new / revised major, minor, or concentration attached to?

Section 5: New / Revised Disciplinary Area for Existing Degree Information (Graduate)

1. Is this a new or revised disciplinary area attached to an existing graduate degree program? Yes ☒ No ☐ Revised ☒
   If you've answered NO, please continue on to the next section.

2. If YES, what is the name of this new / revised disciplinary area?

3. Which Department / School is the authority for this new / revised disciplinary area? (NOTE - if this disciplinary area is being offered by multiple departments see question below.)
   Biochemistry, Microbiology and Immunology [BHI - Bioch Micro Immuno - code and description for student system] BHI

4. Which multiple Departments / Schools are the authority for this new / revised disciplinary area?

4a. Of the multiple Departments / Schools who are the authority for this new / revised disciplinary area and what allocation percentage is assigned to each? (Note - must be whole numbers and must equal 100.)

4b. Of the multiple Departments / Schools which is the primary department? The primary department specifies which department / school policies will be followed in academic matters (ex. late adds, re-read policies, or academic misconduct). If no department / school is considered the primary, please indicate that. (In normal circumstances, a department / school with a greater percentage of responsibility - see question above - will be designated the primary department.)

5. Which current program(s) and / or degree(s) is this new / revised disciplinary area attached to?
   Master of Science-Thesis [MSC-T-GP], Doctor of Philosophy(Transfer) [PHD-TRANS-GP], Doctor of Philosophy [PHD-GP]
Section 6: New College / School / Center / Department or Renaming of Existing

1. Is this a new college, school, center, or department?  
   - Yes  
   - No  
   - X

2. Is an existing college, school, center, or department being renamed?  
   - Yes  
   - No  
   - X

3. Is an existing college, school, center, or department being deleted?  
   - Yes  
   - No  
   - X

If you've answered NO to each of the previous two questions, please continue on to the next section.

2. What is the name of the new (or renamed or deleted) college, school, center, or department?  

3. If you have renamed an existing college, school, center, or department, what is the current name?  

4. What is the effective term of this new (renamed or deleted) college, school, center, or department?  

5. Will any programs be created, changed, or moved to a new authority, removed, relabelled?  

6. Will any courses be created, changed, or moved to a new authority, removed, relabelled?  

7. Are there any ceremonial consequences for Convocation (i.e. New degree hood, adjustment to parchments, etc.)?
Section 7: Course Information

1. Is there a new subject area(s) of course offering proposed for this new degree? If so, what is the subject area(s) and the suggested four (4) character abbreviation(s) to be used in course listings?
   No

2. If there is a new subject area(s) of offerings what College / Department is the academic authority for this new subject area?

3. Have the subject area identifier and course number(s) for new and revised courses been cleared by the Registrar?

4. Does the program timetable include standard class time slots, terms, and sessions?
   Yes □ No □
   If NO, please describe.

5. Does this program, due to pedagogical reasons, require any special space or type or rooms?
   Yes □ No □
   If YES, please describe.

NOTE: Please remember to submit a new "Course Creation Form" for every new course required for this new program / major. Attached completed "Course Creation Forms" to this document would be helpful.
**Section 8: Admissions, Recruitment, and Quota Information - as per current set-up other than admission qualifications**

1. Will students apply on-line? If not, how will they apply?

2. What term(s) can students be admitted to?

3. Does this impact enrollment?

4. How should Marketing and Student Recruitment handle initial inquiries about this proposal before official approval?

5. Can classes towards this program be taken at the same time as another program?

6. What is the application deadline?

7. What are the admission qualifications? (IE. High school transcript required, grade 12 standing, minimum average, any required courses, etc.)

   English proficiency requirement of minimum overall TOEFL score of 90 with a minimum of 20 in each area or a minimum overall IELTS score of 6.5 with a minimum of 6.5 in each area.

   Minimum average of 75% for Master of Science and 80% for Doctor of Philosophy.

8. What is the selection criteria? (IE. If only average then 100% weighting; if other factors such as interview, essay, etc. what is the weighting of each of these in the admission decision.)

9. What are the admission categories and admit types? (IE. High school students and transfer students or one group? Special admission? Aboriginal equity program?)

10. What is the application process? (IE. Online application and supplemental information (required checklist items) through the Admissions Office or sent to the College/Department?)

11. Who makes the admission decision? (IE. Admissions Office or College/Department/Other?)

12. Letter of acceptance - are there any special requirements for communication to newly admitted students?

13. Will the standard application fee apply?

14. Will all applicants be charged the fee or will current, active students be exempt?

15. Are international students admissible to this program?
Section 9: Government Loan Information - as per current set-up

NOTE: Federal / provincial government loan programs require students to be full-time in order to be eligible for funding. The University of Saskatchewan defines full-time as enrollment in a minimum of 9 credit units (operational) in the fall and/or winter term(s) depending on the length of the loan.

1. If this is a change to an existing program, will the program change have any impact on student loan eligibility?

2. If this is a new program, do you intend that students be eligible for student loans?

Section 10: Convocation Information (only for new degrees) - not applicable

1. Are there any 'ceremonial consequences' of this proposal (ie. New degree hood, special convocation, etc.)?

2. If YES, has the Office of the University Secretary been notified?

3. When is the first class expected to graduate?

4. What is the maximum number of students you anticipate/project will graduate per year (please consider the next 5-10 years)?

Section 11: Schedule of Implementation Information

1. What is the start term?
   - 202005 (May 2020) - for new majors
   - 202105 (May 2021) - for admission requirement change
   - 202005 (May 2020) - for new majors

2. Are students required to do anything prior to the above date (in addition to applying for admission)?
   - Yes [ ] No [x]
   - If YES, what and by what date?
Section 12: Registration Information - as per current set-up

1. What year in program is appropriate for this program (NA or a numeric year)?
   (General rule - NA for programs and categories of students not working toward a degree level qualification.)

2. Will students register themselves?
   If YES, what priority group should they be in?

Section 13: Academic History Information - as per current set-up

1. Will instructors submit grades through self-serve?
2. Who will approve grades (Department Head, Assistant Dean, etc.)?

Section 14: T2202 Information (tax form) - as per current set-up

1. Should classes count towards T2202s?

Section 15: Awards Information

1. Will terms of reference for existing awards need to be amended?
2. If this is a new undergraduate program, will students in this program be eligible for College-specific awards?

Section 16: Government of Saskatchewan Graduate Retention (Tax) Program - as per current set-up

1. Will this program qualify for the Government of Saskatchewan graduate retention (tax) program?
   To qualify the program must meet the following requirements:
   - be equivalent to at least 6 months of full-time study, and
   - result in a certificate, diploma, or undergraduate degree.
Section 17: Program Termination

1. Is this a program termination?
   Yes [X] No [ ]
   If yes, what is the name of the program?
   Majors of Biochemistry [BIOC] and Microbiology and Immunology [MIIM] in the Post Graduate Diploma [PGD-GP], Master of Science-Thesis [MSC-T-GP], Doctor of Philosophy(Direct) [PHD-DIRECT-GP], Doctor of Philosophy(Transfer) [PHD-TRANS-GP], Doctor of Philosophy [PHD-GP] programs

2. What is the effective date of this termination?
   202005 [May 2020]
   Yes [ ] No [X]

3. Will there be any courses closed as a result of this termination?
   If yes, what courses?
   Yes [ ] No [X]

4. Are there currently any students enrolled in the program?
   Yes [X] No [ ]
   If yes, will they be able to complete the program?
   Students will be allowed to complete their current program or move to the new program

5. If not, what alternative arrangements are being made for these students?

6. When do you expect the last student to complete this program?
   2025 - students have 6 years to complete
   Yes [X] No [ ]

7. Is there mobility associated with this program termination?
   Yes [X] No [ ]
   If yes, please select one of the following mobility activity types.
   - Dual Degree Program
   - Joint Degree Program
   - Internship Abroad Program
   - Term Abroad Program
   - Taught Abroad Course
   - Student Exchange Program

   Partnership agreements, coordinated by the International Office, are signed for these types of mobility activities. Has the International Office been informed of this program termination?
   Yes [X] No [ ]
Section 18: Proposed Tuition and Student Fees Information - as per current set-up

1 How will tuition be assessed?

   Standard Undergraduate per credit
   Standard Graduate per credit
   Standard Graduate per term
   Non standard per credit*
   Non standard per term*
   Other *
   Program Based*

   * See attached documents for further details

2 If fees are per credit, do they conform to existing categories for per credit tuition? If YES, what category or rate?

3 If program based tuition, how will it be assessed? By credit unit? By term? Elsehow?

4 Does proponent’s proposal contain detailed information regarding requested tuition?
   Yes ☐ No ☐
   If NO, please describe.

5 What is IPA’s recommendation regarding tuition assessment? When is it expected to receive approval?

6 IPA Additional comments?

7 Will students outside the program be allowed to take the classes?

8 If YES, what should they be assessed? (This is especially important for program based.)

9 Do standard student fee assessment criteria apply (full-time, part-time, on-campus versus off-campus)?

10 Do standard cancellation fee rules apply?

11 Are there any additional fees (e.g. materials, excursion)? If yes, see NOTE below.
   Yes ☐ No ☐

12 Are you moving from one tuition code (TC) to another tuition code?
   If YES, from which tuition code to which tuition code?

13 Are international students admissible to the program? If yes, will they pay the international tuition differential?

NOTE: Please remember to submit a completed "Application for New Fee or Fee Change Form" for every new course with additional fees.
Section 19: TLSE - Information Dissemination (internal for TLSE use only)

1. Has TLSE, Marketing and Student Recruitment, been informed about this new / revised program?  
   - Yes  No
2. Has TLSE, Admissions, been informed about this new / revised program?  
   - Yes  No
3. Has TLSE, Student Finance and Awards, been informed about this new / revised program?  
   - Yes  No
4. Has CGPS been informed about this new / revised program?  
   - Yes  No
5. Has TLSE, Transfer Credit, been informed about any new / revised courses?  
   - Yes  No
6. Has ICT-Data Services been informed about this new or revised degree / program / major / minor / concentration?  
   - Yes  No
7. Has the Library been informed about this new / revised program?  
   - Yes  No
8. Has ISA been informed of the CIP code for new degree / program / major?  
   - Yes  No
9. Has Room Scheduling/Scheduling Hub/Senior Coordinator of Scheduling been informed of unique space requirements for the new courses and/or informed of program, course, college, and department changes?  
   - Yes  No
10. Has the Convocation Coordinator been notified of a new degree?  
    - Yes  No

11. What is the highest level of financial approval required for this submission? Check all that apply.
    a. None - as it has no financial implications  
    b. Fee Review Committee  
    c. Institutional Planning and Assessment (IPA)  
    d. Provost's Committee on Integrated Planning (PCIP)  
    e. Board of Governors  
    f. Other  

SIGNED

Date:  December 9, 2019

Registrar (Russell Isinger):  

College / Department Representative(s):  Martha Smith

IPA Representative(s):  