

Program Progress Report
Institutional Quality Assurance Program (IQAP) Review
PROGRAM NAME: Department of Biology Graduate Program

Date of Site Visit: March 1 and 2, 2018

Progress Report Prepared by: Jianping Xu (former Graduate Chair), Marie Elliot (Departmental Chair), and Ian Dworkin (current Graduate Chair), with input from Rosa da Silva (current Undergraduate Chair)

Please outline below how recommendations from the initial program review have been addressed.
[Please fill in one table for each recommendation from the original Final Assessment Report]

Recommendation #1: <i>Consider whether direct entry from BSc should be more readily used for exceptional students, including those with outstanding GPAs and undergraduate research experience.</i>
Responsibility for Implementation: Graduate Chair, with input from the Biology Graduate Studies Committee (BGSC), and through discussion with individual applicants and supervisors
Anticipated Timeline for Completion: January 2022
Additional Notes/Commentary: We have been working to identify exceptional candidates for direct entry into our PhD program. When we receive an application from an exceptional candidate (outstanding grades and considerable research experience), the BGSC member(s) reviewing the application are asked to flag it, and a discussion is initiated with the student and supervisor about whether direct entry is something they were interested in considering. We have found that many graduate applicants do not indicate an ultimate interest in pursuing a PhD, or are unsure about whether this is something they are interested in, and thus most applicants enter into the MSc program initially. However, those students who have made strong progress in the first year of their MSc program and express an interest in pursuing a PhD in the same lab, frequently accelerate their transfer into our PhD program.
Progress (check one): <input type="checkbox"/> Completed <input checked="" type="checkbox"/> In Progress <input type="checkbox"/> Other (please explain)
Department's Comments: We will continue to initiate conversations about direct entry – and accelerated entry - into our PhD program for exceptional BSc and early stage MSc students who are fully committed to pursuing a PhD. These options are not currently described on our Admissions information webpage, but we will aim to include that information in advance of the January 2022 recruiting cycle. We will also add this information into the 'Applications and Admissions', and 'Transfer from MSc to PhD program' sections of our Graduate Guide.
Dean's Comments:

Direct Ph.D. admission and accelerated Ph.D. entry are attractive strategies to recruit/retain excellent students. It is clear that Biology is making efforts to broaden communication on both these options.

QAC Comments (to be filled in by Quality Assurance Committee):

QAC reviewed this report and had no further comments or concerns.

Recommendation #2: *The Department may wish to reconsider its approach to international applicants who already hold Masters-level degrees and critically evaluate whether they first need to enroll in the MSc program.*

Responsibility for Implementation: Recommendations from the BGSC to the Graduate Chair, in conjunction with discussion with individual applicants and supervisors

Anticipated Timeline for Completion: Completed

Additional Notes/Commentary: Due to our lack of familiarity with the academic rigor associated with many overseas institutions and potential language barriers, we have been taking a cautious approach when recruiting international students. However, since 2018, the BGSC has agreed that applicants with an MSc degree and with first-author publication(s) in reputable peer-reviewed English journals, have been directly admitted into our PhD program. In addition, similar to our domestic MSc students, international students showing outstanding progress in the first year of their MSc study are encouraged to fast-track to our PhD program through our MSc-to-PhD transfer exam process.

Progress (check one):

- ☒ Completed
- ☐ In Progress
- ☐ Other (please explain)

Department's Comments: We will monitor the success of our direct entry students to ensure that this approach is working for them and that they are thriving in our program (*e.g.* are receiving good/outstanding assessments by their supervisory committee members; are completing their degrees in time). We are pleased to note that many of our international students opt to pursue PhDs in the department, and are working to ensure that we provide them with an outstanding training experience throughout the entirety of their graduate program. We have not been routinely asking graduating students to complete an exit survey, but this will be an addition that we will be bringing in over the next year, and we will be sure to explore the experience of those international students who came in through the MSc program, versus those who entered the PhD program directly.

Dean's Comments:

It is clear that the department has taken steps to act on this recommendation. The heterogeneity of applicants from different countries makes it challenging to identify those who are competent to carry out Ph.D. studies. In most cases, the entry at the M.Sc. level and fast tracking to Ph.D. after one year appears to be an appropriate safeguard for all parties. However, some international students may be admitted directly at the Ph.D. level if their academic background is appropriate. These discussions will continue to be supported.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #3: *The Department engage in curricular planning and mapping for graduate courses. This will include establishing clear and forward-thinking goals and learning outcomes. Courses should be decided upon and advertised on a 2-year cycle, allowing students and faculty instructors to properly plan.*

Responsibility for Implementation: Graduate Chair, BGSC, and Department Chair, in consultation with Biology faculty members

Anticipated Timeline for Completion: April 2022

Additional Notes/Commentary: Historically, our graduate course offerings have followed a 2-year cycle. In our 2002 IQAP review, it was recommended that we reduce the course requirement for our students, to provide students more time for their research and reduce their time to completion. In response to this recommendation, we changed the requirements for MSc students to two courses, with no course requirement for PhD students. This is in line with most Biology graduate programs in research-intensive universities in Canada.

In recent years, bioinformatics and (to a lesser extent) advanced statistics have been attracting increasing attention from students. In response to students' needs, some version of these courses have been offered yearly over the last four years, often with high enrolments (including many students from other programs at McMaster). Because of the low course requirements for our graduate students, the demands for other courses have not been as strong. This has placed a high graduate teaching demand on faculty members with bioinformatics/statistics knowledge, and a concomitant lower load for others. We are currently investigating ways to make graduate teaching more equitable, sustainable, and predictable. Over the last year, a working-group has been evaluating our offerings, our needs, and the approaches taken by other institutions. We will be working to develop a graduate course/teaching structure within the BGSC over this coming year, intended to ensure students are able to gain the necessary skill sets, theoretical knowledge, and communication skills to succeed both within their programs and in the next chapter of their scientific careers.

Progress (check one):

- ☐ Completed
- ☒ In Progress
- ☐ Other (please explain)

Department's Comments: A major focus in the department over the next year will be developing our graduate program strategic plan. A major focus within this plan will be our graduate teaching – looking at what we teach (and why), how we teach, and who teaches. Our goal is to ensure that in going forward, our teaching is equitable between faculty members (or at least more equitable than it currently is), and that we are able to consistently and predictably provide students with the training and knowledge/skills development needed for their success, and that we are able to evolve as our student, curricular and departmental needs change.

Dean's Comments:

The department has proposed a strategic plan to discuss a range of graduate matters including this specific recommendation. We are confident about the process and expect appropriate changes to be implemented in the near future.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #4: *We recommend that a Scientific Communication course (e.g. Biology 712) be offered every year and be mandatory for all incoming graduate students (MSc and PhD). Our suggestion is that this course be in addition to the 2 courses already required for the MSc and would be an additional requirement for the Ph.D.*

Responsibility for Implementation: BGSC, in consultation with the Biology department

Anticipated Timeline for Completion: Completed – but will be revisiting this with our grad curricular planning described in point #3.

Additional Notes/Commentary: BIO 712 has been offered every academic year since 2017. In the Fall of 2018, the BGSC brought a motion to the department that required all incoming graduate students to take BIO 712. The motion requiring BIO 712 was defeated; however, and a modified motion of “strongly encouraging” all graduate students to take this course was adopted by the department. Part of the rationale for the amended motion was that many of our students receive in-depth scientific communication training as part of their research training (e.g. with formal presentations as part of weekly lab meetings;; preparing for and attending conferences; etc.), and many other graduate courses include extensive writing and presentation components. As part of our modular curricular planning, we are looking to streamline and coordinate the communication components of our graduate courses, and will advocate for this being a mandatory module for all MSc students.

Progress (check one):

- ☒ Completed
☐ In Progress
☐ Other (please explain)

Department's Comments: We continue to encourage new graduate students to enroll in BIO 712. For the Fall 2021 offering, we have 18 students enrolled, with 17 of these being new Biology graduate students (out of a cohort of 22 students). We are also looking at ways to repackage this offering in a more modular-type structure that will be required for all students; however, we are still in the consulting and planning stages of this process, and anticipate having a plan in place by April 2022 (please see our response to Recommendation #3).

Dean's Comments:

We strongly support this recommendation as communication is an essential skill for all students. The department has been successful in increasing enrolment in Bio-712 (with its associated communications components) without making it a required course for all M.Sc. and Ph.D. students. Incidentally, Faculty of Science is in the process of launching a new Graduate Career program that is expected to complement department's efforts to equip students with a core set of career-oriented skills.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #5: *As either a component of a capstone graduate course or on their own, weekly Departmental seminars be attended by all graduate students.*

We suggest that research group focused seminars be held on rotation and held no more than 1x/week (e.g. PHYSIOL, EEB, MCB)

Responsibility for Implementation: BGSC, in consultation with the Biology department

Anticipated Timeline for Completion: Completed

Additional Notes/Commentary: We now require each graduate student in the department to submit a seminar attendance form (signed by his/her supervisor) at their annual supervisory committee meeting, as part of the student's annual report. This requirement has greatly increased seminar attendance by graduate students over the last two years, and in turn, enhanced their community experience. In addition, relevant discipline-specific seminars both within the department, and outside (e.g. the Biochemistry and Biomedical Sciences Seminar Series, Psychology, Neuroscience and Behaviour Seminar Series, and the Institute for Infectious Disease Seminar offerings) are shared with departmental members. Within Biology, the Ecology and Evolutionary Biology seminar series (held at lunchtime, on an ad hoc basis (sometimes weekly, but usually monthly) during the academic term on Wednesdays, to ensure it is offset from the departmental seminar day/time on Thursday late afternoon) encompasses several departments and typically attracts a broad audience, nicely complementing the Departmental seminar series.

Progress (check one):

- ☒ Completed
☐ In Progress
☐ Other (please explain)

Department's Comments: We will continue to encourage students to attend seminars both in their fields of interest (e.g. more discipline specific seminars series), and more broadly (through our departmental seminar series and those outside of our unit), as a way to further expand and strengthen their scientific knowledge base, and to appreciate the different ways there are of communicating scientific findings (with some being much more effective than others). We will

however, work to ensure that all of the department-based seminars are coordinated, so as to avoid seminar fatigue.

Dean's Comments:

As indicated in their response, the department has made progress in emphasizing expectations and increasing attendance and participation.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #6: *Ensure MOSAIC, as an administrative tool, is meeting needs and expectations of Graduate student applicants as well as resulting in timely conversions.*

Responsibility for Implementation: Graduate Chair and Graduate Administrative Assistant

Anticipated Timeline for Completion: Completed

Additional Notes/Commentary: We have been in regular communication with the MOSAIC team and SGS in highlighting issues related to graduate applications. Our former graduate assistant (Barb Reuter) was on an SGS special advisory committee to help SGS in dealing with these issues, which have affected all McMaster graduate programs. SGS has opted to move the platform for graduate applications from MOSAIC to SLATE, starting Fall 2021. We are hopeful that this new platform will out-perform MOSAIC, with respect to the student experience and our managing of graduate applications.

Progress (check one):

- ☒ Completed
- ☐ In progress
- ☐ Other (please explain)

Department's Comments: We will continue to monitor the performance of SLATE, and our ability to use this to effectively manage graduate student applications (and will seek student feedback on their experiences with using SLATE). A central pillar of our graduate program strategic plan will involve a system for soliciting regular input and feedback from our graduate students, and we intend for this to begin as they enter our program, with a request for them to share their experience in applying for graduate studies within Biology. This will allow us to identify features that are working well, and areas where there is room for future refinement. We will communicate student feedback, alongside our experiences in using this new platform, to the Associate Dean, Grad Studies within Science, and to SGS.

Dean's Comments:

The School of Graduate Studies has now implemented SLATE as a new admission tool. The new program is integrated with MOSAIC and offers numerous, powerful tools to manage admissions. Over the last several months, discussions and trainings have taken place to ensure that program administrators and others with comparable responsibilities are able to operate the system.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #7: *The supervisory committee must be composed of the Supervisor and two other members, one of whom could be from another Graduate Unit*

Responsibility for Implementation: BGSC in consultation with the Biology department

Anticipated Timeline for Completion: 2021/2022

Additional Notes/Commentary: Our original committee requirement at the time of the last IQAP review was a minimum of two supervisory committee members for MSc students and three members for PhD students (both including the supervisor). Following the IQAP recommendation, in the summer of 2018, the BGSC discussed mandating a minimum of three-member supervisory committee for MSc students. However, at the time, we were unable to obtain consensus support within the committee, for mandating a three-member supervisory committee for MSc students. The main concern was the small number of graduate faculty available in several fields. Instead, BGSC brought a motion to the department that we “strongly recommended” each MSc student to have a three-member supervisory committee. This motion was approved by the department.

This motion will be revisited this Fall, with the intention of making a three person MSc committee mandatory (consistent with what is already in place for our PhD students) – please see the Department’s comments for more detail.

Progress (check one):

- ☐ Completed
- ☒ In Progress
- ☐ Other (please explain)

Department’s Comments: The new (as of 2019) Department Chair feels strongly that this is an important requirement for our MSc students, and will be working with the new Graduate Chair (as of 2021) to bring this through the BGSC and to a vote at our October Departmental Council meeting. We estimate that at least 50% of in-program students already have the recommended 3-person committee, but the goal will be for this to be a requirement for all MSc students starting next year (2022).

Dean’s Comments:

The Faculty of Science supports the plan proposed by the department.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #8: *The Department should carefully evaluate the recommended timelines for both the PhD and MSc programs, with a view to having meetings and providing feedback earlier and more often in the programs. Students should be provided with clear pathways and guidelines to proceed through their programs.*

Responsibility for Implementation: BGSC, in consultation with the Department Council

Anticipated Timeline for Completion: January 2020

Additional Notes/Commentary: In our Graduate Guide, we now state that students are encouraged to have at least one, and ideally two supervisory committee meetings per year, to receive feedback and guidance from their committee members. Across McMaster University, only PhD students are required to have annual supervisory committee meetings. However, the Biology graduate program requires that MSc students also have an annual supervisory committee meeting. To ensure new students have clear direction for their research, we have now mandated that all new September-entry MSc students submit a one-page summary of their thesis research by the end of December of the same year, and have identified the members of their supervisory committee by this same time. We would note that the vast majority of our students (pre-pandemic) have graduated on time; the COVID-19 pandemic has led to delays in graduation for many of our graduate students, but we hope that we will make a return to pre-pandemic completion rates in the near future.

Progress (check one):

- ☒ Completed
- ☐ In Progress
- ☐ Other (please explain)

Department's Comments: In addition to the structural changes described above, we are also working to develop a 'calendar' for graduate students, that summarizes the key timelines/requirements for them within their programs. This will be incorporated into our 'Graduate Guide' on our Departmental website, and will be coupled with detailed guidelines that already exist within our Graduate Guide, relating to the different benchmarks/requirements as students progress through their programs. We will continue to encourage early-stage committee meetings for all students in their first year, and at a minimum, annual meetings after that.

Dean's Comments:

The department has made progress on this front and is now proposing additional steps. The department should consider implementing additional timelines and measures to assist anyone having difficulty in meeting program requirements and requiring a closer follow up.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #9: *The Department should ensure its program requirements and assessments are consistent with School of Graduate Studies policies. The Department should carefully evaluate the mechanisms it uses for assessments with respect to Section 4.2 of the Graduate Calendar, which gives wide latitude to graduate programs to develop tools that meets their needs.*

Responsibility for Implementation: Graduate Chair, BGSC and Graduate Administrative Assistant

Anticipated Timeline for Completion: Completed

Additional Notes/Commentary: Section 4.2 of the Graduate Calendar describes the Program Expectations and Requirements for PhD students. In particular, it notes that there are no course requirements for PhD candidates (we have no course requirements); the comprehensive knowledge demonstration can be of flexible format and assessment of this should occur between 12-20 months of PhD entry, with an outside limit of 24 months (we employ a comprehensive exam, held between 12 and 20-months of program start); and that any transfer exam associated with entry into the PhD program be distinct from the comprehensive exam (our transfer exams and comprehensive exams are entirely separate). We review our processes annually (in the lead up to the new academic term starting in September) to ensure consistency with the Graduate Calendar.

Progress (check one)

- ☒ Completed
☐ In Progress
☐ Other (please explain)

Department's Comments: We will continue to ensure that what is done in the department is consistent with the School of Graduate Studies policies. With respect to section 4.2 of the Graduate Calendar, relating to (PhD) *Program Expectations and Requirements*, we will ensure that our processes are consistent with the flexible assessment approaches detailed in this section. We expect that our assessment approaches may evolve over time, to better serve our students and programs (while still ensuring that they adhere to the policies and procedures outlined in the Graduate Calendar).

Dean's Comments:

We do not see any outstanding issues with regards to Section 4.2 at this time. The department has established clear processes dealing with transfer and comprehensive examinations. The Associate Dean (Graduate) has been meeting with the Associate Chairs on a regular basis to ensure that program requirements are aligned with McMaster School of Graduate Studies policies and has developed and updated guides for both Associate Chairs (Graduate) and Graduate Supervisors.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #10: <i>We recommend transparent and timely communication between the Graduate Studies Committee and graduate students regarding TA allocation and assignment.</i>
Responsibility for Implementation: Departmental Administrator, in consultation with all faculty and graduate students, and with oversight from the Chair (as an ex-officio member of the BGSC)
Anticipated Timeline for Completion: Completed – with on-going improvements
Additional Notes/Commentary: Each year, TA assignments for graduate students begin in mid July, when in-program graduate students are polled regarding their TAing preferences. Based on graduate student requests, alongside their academic backgrounds and research interests, a preliminary draft TA assignment is shared among all faculty, instructional assistants, and graduate students. Feedback is solicited, and in what is an iterative process, modifications are made, and new versions are shared with everyone. A final version is usually arrived at in late August/early September. Through this process, faculty members and students are provided with multiple opportunities to provide feedback. On occasion, there are mismatches in TA demands and graduate student numbers in certain fields, and so it is not always possible to satisfy all requests made by instructors and graduate students.
Progress (check one) <input checked="" type="checkbox"/> Completed <input type="checkbox"/> In Progress <input type="checkbox"/> Other (please explain)
Department's Comments: In addition to the process described above, we are working to develop a document that outlines the different factors that go into TA assignments, as there are many more components that need to be taken into consideration than most people realise. This document will be shared with graduate students and faculty members when the initial assignment lists are sent out in 2022.
Dean's Comments: We support the department in enhancing communications regarding TA allocation and setting a process to receive input of all stakeholders.
QAC Comments (to be filled in by Quality Assurance Committee): See above

Recommendation #11: <i>The Department should work with the Faculty to ensure current plans to improve the building space and infrastructure move forward in a timely manner.</i>
Responsibility for Implementation: Department Chair, together with the Dean of Science
Anticipated Timeline for Completion: Phase 1 of the comprehensive Life Sciences Building (LSB) renovation is initiating in Fall 2021, with Phases 2, 3 and 4 following over the next 2-6 years (estimated).

Additional Notes/Commentary: Renovations of LSB (and building of an attached new research and teaching greenhouse) have been approved by McMaster, and will be starting in the Fall of 2021. This is currently scheduled to be a 5–7-year project, and we hope that at the end of it, we will have an amazing space in which to be learning and working.

Progress (check one):

- ☐ Completed
☒ In Progress
☐ Other (please explain)

Department's Comments: We are extremely grateful for the university's commitment to fund the renovation of LSB, and we hope that at the end of this process, our space will provide an outstanding environment in which to be pursuing graduate work.

On the infrastructure end, our faculty members have been taking advantage of a generous (and greatly appreciated) program offered by the Faculty of Science, to replace broken/aging pieces of equipment in both the research and teaching areas. This influx of new equipment has bolstered our infrastructure complement. Faculty members are also active in submitting equipment grant requests to NSERC, and have had considerable success each year, further enhancing the infrastructure available to our students. Finally, we are recruiting new faculty members for the first time in many years; these individuals will be investing in new equipment that will further expand and enhance our infrastructure repertoire.

Dean's Comments:

The recent, current and future investments in infrastructure renewal associated with the Department of Biology will have positive impacts on the Biology Graduate Program. The collaborative and coordinated approach has been very beneficial at all levels.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #12: *The Department must work with the Dean as an ally to develop a faculty complement plan that aligns with the vision and strategic directions of both the Department and the Faculty.*

Responsibility for Implementation: Department Chair, together with Dean of Science, with input from Biology faculty members

Anticipated Timeline for Completion: On-going

Additional Notes/Commentary: The Dean has implemented a process whereby departments outline their faculty member needs (teaching versus research; specific areas of science), and describes why such a position is important for the department, and how it fits into the broader strategic mandate of the Faculty and University. This process has provided us with an outstanding opportunity to think

critically about the positions we are requesting, and proceed with a broader vision that encompasses the priorities and visions of the Faculty and University community.

Progress (check one)

- ☐ Completed
X In Progress
☐ Other (please explain)

Department's Comments: We are fortunate to be initiating a period of renewal in the department. We have now had several retirements, and have hired both a teaching track faculty member, and a research-focussed faculty member, and will be recruiting for another new position in the Fall. This is having a very positive effect on the department. Over the next year, we will also be embarking on a departmental strategic planning exercise. We will be working to define the vision and strategic direction for the department and outline a plan for achieving these, with a view to ensuring that it is aligned with those of the Faculty and University.

Dean's Comments:

The recent investments in faculty and staff renewal across the Faculty of Science, including the Department of Biology have supported all aspects of the mission in Biology including the graduate programs. One additional aspect includes the potential to hire an additional faculty member in Biology as part of the Black Faculty Cohort Hiring initiative that is ongoing.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #13: *Staff workloads must be examined carefully to get a true sense of the work that needs to be done and how best to efficiently maximize staff capacity without causing detriment to both the undergraduate and graduate student experience. With the inefficiencies noted with the University's ERP system, the committee feels that one staff person to administer the graduate program is probably not sufficient.*

Responsibility for Implementation: Department Chair, Graduate Chair, Departmental Administrator, and Graduate Administrative Assistant.

Anticipated Timeline for Completion: Completed – but with staff turnover, monitoring is on-going.

Additional Notes/Commentary: The Graduate Chair and the Departmental Administrator have been working closely with the Graduate Administrative Assistant to ensure that the graduate office is run smoothly, student needs and deadlines are met, and the Assistant is not over-worked.

Progress (check one)

- X Completed
☐ In Progress
☐ Other (please explain)

Department's Comments: Assessing the workload of the Graduate Administrative Assistant has been ongoing; however, this assessment will need to continue for a longer term to get a complete picture of their workload. At the end of 2019, our long-time Graduate Administrative Assistant had to step away due to sudden health issues, and we needed to fill this position quickly. This was done in early 2020 – just before the pandemic chaos hit, so training and on-boarding were conducted under less than ideal circumstances. At this time, our assessment was that our new staff person was sufficient to administer the graduate program; however, we will continue to monitor this, as we start to move back to more 'normal' activities. In addition, we are working to develop Terms of Reference for our Graduate Chair, and will be working closely with both this individual, and the Graduate Administrative Assistant to identify ways to minimize redundancies, and maximize efficiencies.

Dean's Comments:

The Faculty of Science supports the efforts being made in the Department to carefully assess the organizational needs in administrative areas and to consider issues of job equity in these considerations. We are working with Human Resources to improve our onboarding processes for staff and to support units in transitional work with centrally led organizational development plans.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #14: *Student stipends should be examined regularly to ensure they remain competitive with peer institutions and programs which may be competing for graduate students.*

Responsibility for Implementation: Graduate Chair in consultation with BGSC and Departmental Council

Anticipated Timeline for Completion: Completed

Additional Notes/Commentary: Over the last three years, we have been monitoring stipend levels within comparator departments at McMaster, and in Biology-type programs at our peer institutions, and have been updating student stipends annually to ensure that these remain competitive.

Progress (check one):

- ☒ Completed
- ☐ In Progress
- ☐ Other (please explain)

Department's Comments: As part of our Graduate Committee mandate, we are tracking stipend levels in Biology (and equivalent) departments in comparator institutions across Ontario annually, as well as within McMaster, to ensure that our student compensation levels are – at a minimum - in line with these. Stipend approvals are done in February, to ensure they are in place in advance of sending out offer letters for graduate students entering our program in either May or September of that year (our biggest intake terms).

Dean's Comments:

Keeping the graduate stipend competitive is an ongoing activity. At the Ph.D. level every program is expected to not only meet McMaster's minimum funding requirement but also offer a package that can attract high quality applicants. In Faculty of Science, the Associate Dean (Graduate) office has been monitoring fundings in different programs. We do not see any concerns with stipend in Biology and support the process established in the department.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #15: *Increase opportunities for scientific connections to be made between students in the program.*

Responsibility for Implementation: Graduate Chair and BGSC, in collaboration with the Biology Graduate Students Society (BGSS)

Anticipated Timeline for Completion: Completed – and will be continuing to identify opportunities where connections can be made.

Additional Notes/Commentary: To enhance the community experience among our incoming students and the cohesiveness of the general student population, we have made a number of changes to our program.

- 1) Each Fall, we organize a number of welcoming events and scholarship information sessions for new students; this provides an opportunity for students to get to know each other, meet the Graduate Chair, Graduate Administrative Assistant, and Department Chair, and begin to get familiar with the logistics surrounding their graduate studies.
- 2) BIO 712 has been strongly recommended to new students. This up-coming year (Fall 2021), we have 18 students enrolled in this course, 17 of whom are new students in our program (out of a cohort of 22).
- 3) BGSS organizes weekly social events and/or sporting events that are open to all graduate students. While these are more social events, science discussions inevitably make their way into conversations, and simply knowing other students and what they do makes it more likely that students will reach out to each other with scientific questions or for experimental advice.
- 4) Since 2018, our Annual Graduate Research Day has been organized by the BGSS (with help and oversight from two dedicated faculty members and other members of the BGSC). All graduate students are required to participate, either as part of the organizing committee, judging posters or presentations, or presenting a poster/delivering an oral presentation or 3 min thesis. This provides a great opportunity for all students to get a sense for the work that others are doing in the department. At the conclusion of the day's events, we present prizes to celebrate students' achievements both in presenting their science that day, as well as over the last year in areas including leadership, scientific communication, TAing, and publications.
- 5) All final year PhD students are required to give an 'exit seminar' to the department, where they speak on the work that they have done over the course of their graduate program. This provides an outstanding opportunity for graduate students to identify groups who have experience with techniques they are wanting to try, or expertise in areas that could complement their research.

6) Departmental seminar attendance is now mandatory for our graduate students, which further increases the opportunity for students to make scientific connections within their peer groups.

Progress (check one):

- ☒ Completed
☐ In Progress
☐ Other (please explain)

Department's Comments: We hope that the changes we have implemented since 2018 have increased the opportunity for connections to be made between students, and intend to survey in-program and graduating students, to understand what changes have been effective in helping to build a cohesive and supportive graduate community. Using this information, we will continue to work to identify ways to improve this. For example, we are considering changing our graduate course structure in way that will bring groups of students together for small module experiences, and will help to further increase the opportunity to get to know each other, and the work that they do.

Dean's Comments:

As summarized in their response, the department has established a range of activities to enhance communications and connections between students. Special recognition should be provided to the Chair of the Department and the graduate student (s) who are creating and distributing the Department newsletter on a monthly basis. This newsletter recognizes achievements of Department members, including graduate students, promotes events and also regularly profiles graduate students. It is an excellent example of an initiative to promote internal communications and connections in the Department.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #16: *Work to boost faculty participation in activities that support the graduate student experience, such as volunteering to organize Graduate Research Day and other such activities.*

Responsibility for Implementation: Graduate Chair, Department Chair, and Biology faculty members

Anticipated Timeline for Completion: Completed

Additional Notes/Commentary: Since 2018, we have had at least two faculty members each year assisting the BGSS in organizing our annual Biology Graduate Research Day. Since 2019, members of the BGSC have been actively helping our graduate students improve their external scholarship applications by reviewing and commenting on their draft applications. In addition, faculty members are invited to a subset of BGSS events, with many faculty members regularly participating (e.g., BBQ, ping pong tournaments, Holly Frolic (Christmas party), photo contests, Halloween parties (both in person and online), etc.).

Progress (check one):

- ☒ Completed
☐ In Progress
☐ Other (please explain)

<p>Department's Comments: We will continue to encourage faculty members to get involved in graduate student events, and to help build a strong departmental community. We have recently established a departmental Equity, Diversity and Inclusivity Committee, with members comprising a mix of graduate students, post-doctoral fellows and faculty members. A major goal of this committee is to work with other groups and individuals in the department to help build a more inclusive, supportive culture and enhance the student experience.</p>
<p>Dean's Comments: We support department's efforts to enhance faculty participation in graduate studies related activities. The steps outlined above are very positive.</p>
<p>QAC Comments (to be filled in by Quality Assurance Committee):</p> <p>See above</p>

<p>Recommendation #17: <i>We recommend that the composition of the Biology Graduate Studies Committee be determined democratically with fair and transparent voting procedures and that Terms of Reference be established for the Committee and for the position of Associate Chair, Graduate Studies.</i></p>
<p>Responsibility for Implementation: Department Chair, BGSC, and Departmental Council</p>
<p>Anticipated Timeline for Completion: Fall 2021 and Spring 2022</p>
<p>Additional Notes/Commentary: Due to the frequent changes in the Biology Chair-ship since 2018 (2018 – acting chair; 2019 – new chair) and the COVID-19 pandemic, we didn't start implementing this recommendation until this year. In May 2021, BGSC drafted a Terms of Reference (TOR) for the BGSC, including member selection, responsibilities, and Graduate Chair selection. The TOR were discussed at our June 2021 Department Council meeting. A couple of amendments were suggested. These revised Terms of Reference will be formally voted on at our next Departmental Council meeting in September 2021.</p>
<p>Progress (check one)</p> <p><input type="checkbox"/> Completed</p> <p><input checked="" type="checkbox"/> In Progress</p> <p><input type="checkbox"/> Other (please explain)</p>
<p>Department's Comments: We appreciate the desire to have a democratically elected Graduate Studies Committee. The challenges associated with this primarily centre around maintaining diverse representation from scientific discipline perspectives, career stage perspectives, and EDI perspectives. For these reasons, we have not opted to go with an elected committee membership. We had discussed electing the Associate Chair, and as a compromise, have agreed in principle (pending the outcome of the departmental vote in September), that the Department Chair will identify an Associate Chair, Grad Studies candidate (with experience on the BGSC), and this person's</p>

appointment will be approved in a vote by the Departmental Council (and then moved for approval at the Faculty level).

We have draft TOR developed for the BGSC and policies surrounding the selection of the Associate Chair. Over the Fall of 2021, we will be turning our attention to drafting terms of reference for our Associate Chairs, in consultation with their associated Administrative Assistants, to ensure that we are working as effectively and as efficiently as possible, and providing the best possible experience for all the associated students, staff and faculty.

Dean's Comments:

The department has taken appropriate steps to implement the recommendation. We agree with the rationale for a hybrid approach to form the committee and elect the Associate Chair (graduate). The terms of references will make the process transparent.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #18: *We suggest that the Department work to increase the visibility of the Associate Chair, Graduate Education towards the student body, and especially to new incoming students. The Associate Chair should be well known to all students in the program, and every effort should be made to build a strong rapport between this individual and all students in the program.*

Responsibility for Implementation: Graduate Chair with input from the BGSC

Anticipated Timeline for Completion: Completed

Additional Notes/Commentary: Several approaches have been made by the Graduate Chair to enhance visibility and to increase their interactions with our graduate students.

- 1) The Graduate Chair communicates all information from SGS and the Faculty of Science that are relevant to graduate students to all graduate students via regular emails.
- 2) The Graduate Chair hosts welcome events for new and returning students at the beginning of each academic year.
- 3) In the Fall, the Graduate Chair organizes information sessions for scholarship applicants.
- 4) The Graduate Chair interacts frequently with members of the Biology Graduate Students Society (BGSS) to both support their work, and identify issues of concern and help in resolving any issues by serving as liaison with the Chair of Biology and other relevant individuals.
- 5) The Graduate Chair regularly participates in BGSS events when possible (and when welcome).
- 6) In the graduate student welcome at the beginning of the academic year, and throughout the year via email, the Graduate Chair lets all graduate students know that they are welcome to contact the Chair at any time for questions related to their study in our department.

Progress (check one):

- ☒ Completed
- ☐ In Progress
- ☐ Other (please explain)

Department's Comments: In addition to everything that the Graduate Chair is already doing, the Department Chair will aim to include an introduction to the Graduate Chair in the 1st departmental newsletter of the academic year. We will further work to have smaller 'welcome' events for those students starting their graduate programs in January and May, to ensure that these students know who the Graduate Chair is, and that they know they are free to contact that individual (and the Department Chair) at any point about questions or concerns about their program or department.

Dean's Comments:

We support department's efforts enhance the visibility of the Associate Chair (Graduate).

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #19: *We recommend that the Biology Graduate Studies Committee publish minutes of their meetings and present these to the Department.*

Responsibility for Implementation: Graduate Chair and Graduate Administrative Assistant

Anticipated Timeline for Completion: Completed

Additional Notes/Commentary: Formal minutes are not taken at our BGSC meetings. However, each month, on behalf of the BGSC, the Graduate Chair provides an update to the Departmental Council on recent activities and upcoming events related to graduate studies. These updates are shared with all members of the Departmental Council, typically a few days ahead of the Departmental Council meeting (usually in the middle of each month). At the Departmental Council meetings, Graduate Chair answers any questions Council members may have about the Updates or about the graduate programs in general. The updates, and Departmental Council meeting minutes are then posted in our Departmental MacDrive folder, to which all departmental members (including faculty members, staff members, and graduate students) have access. The BGSS representative who sits on Department Council also provides updates on committee discussions to the BGSS membership.

Progress (check one):

- ☒ Completed
- ☐ In Progress
- ☐ Other (please explain)

Department's Comments: We intend to continue the communication practices outlined above. In the annual 'Record of Activity' meetings between faculty members and the Department Chair, questions have been asked about communication within the department, and no concerns were raised in this past year, suggesting that the process currently in place has addressed this concern, at the level of faculty members. In our annual departmental Town Hall event that kicks off the new academic term, all departmental members are directed to our Departmental MacDrive folder, and the information updates included within there, so everyone knows where to find this information if they are interested and do not already receive it via email.

Dean's Comments:

We find the departmental approach reasonable and a good compromise between time/efforts involved and transparency. The Departmental Council minutes are an official record of main points along with any recommendations discussed in BGSC meetings.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #20: *The Biology Department, through the Associate Chair or the Graduate Studies Committee, work closely with allied academic and non-academic units to construct a clearly articulated package of services available to graduate students.*

Responsibility for Implementation: Graduate Chair and Graduate Administrative Assistant

Anticipated Timeline for Completion: Completed

Additional Notes/Commentary: The Graduate Chair participates in the monthly Faculty of Science Graduate Associate Chairs' meeting. At these meetings, the associate chairs share experiences and updates from their individual graduate programs. The topics are typically wide-ranging, including recruiting, stipends, scholarship applications, international students, curriculum, EDI, supervisor-student relationships, etc. The highlights of these meetings are shared with the Chair of Biology and with the Department Council in our monthly BGSC updates; we note that a graduate student representative sits on our Departmental Council, attending all meetings and receiving all updates. At the Faculty meetings, and from 2019-2021 at the Senate Graduate Council meetings (when our previous Graduate Chair was a member), we have worked to advocate for our students and the Biology Department. Outside of these meetings, the Graduate Chair also interacts regularly with graduate associate chairs of other programs and discuss issues of common interests. We educate students on where to find these opportunities at our annual Town Hall meeting in September, and in regular email communications.

Progress (check one):

- ☒ Completed
- ☐ In Progress
- ☐ Other (please explain)

Department's Comments: We will continue to exchange information with other Graduate Chairs on a regular basis. We note that the School of Graduate Studies puts out an excellent weekly newsletter that highlights opportunities for graduate students within the university, and we are working to further highlight these in our monthly departmental newsletters that go out to all Biology members. We are intending to start the academic year with a departmental Town Hall meeting, in which we highlight opportunities for students to get involved within the department, and are developing a comprehensive collection of EDI and mental health resources available to students, that will be posted on our departmental website.

Dean's Comments:

The department has made a considerable effort to enhance internal communications and to promote communications and services for services available internal and external to the Department.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #21: *We recommend an external search for the next Department Chair, which will be important for leadership renewal.*

Responsibility for Implementation: Dean of Science, together with a dedicated selection committee

Anticipated Timeline for Completion: Completed

Additional Notes/Commentary: We appreciate the recommendation, and note that the timing was particularly apt. In 2018, a search committee was struck for the next Department Chair, and it was a unanimous decision that led to the selection of the (internal) individual who is now our current chair.

Progress (check one):

- ☒ Completed
- ☐ In Progress
- ☐ Other (please explain)

Department's Comments: The current chair is working to continue to build a strong scientific community that places high value on education and research innovation, with a culture grounded in respect, support and inclusion.

Dean's Comments:

The current Chair (Dr. Marie Elliot) is doing an outstanding job of leading the Department. She has enhanced internal communication, encouraged collaboration and advanced initiatives and process refinement in alignment with the Faculty of Science Strategic Plan (2020-25).

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation #22: *The new Chair and Associate Chair, Graduate Studies work together to establish a vibrant strategic plan for Graduate Studies in Biology.*

Responsibility for Implementation: Department Chair, Graduate Chair, with input from all faculty members and graduate students.

Anticipated Timeline for Completion: In progress

Additional Notes/Commentary: The pandemic unfortunately meant that our strategic planning initiatives were shelved, but we are now returning to these, and our graduate program strategic plan is a major focus for the up-coming 2021/2022 year.

Progress (check one):

- ☐ Completed
- X In Progress
- ☐ Other (please explain)

Department's Comments: Our graduate strategic planning is ramping up, and will include aspects of graduate recruitment, graduate courses, graduate teaching, graduate training and supervision, and the overall graduate experience. As part of the planning process, we will be scheduling a departmental retreat in December 2021, with the focus being on our graduate studies program.

Dean's Comments:

The department has made good progress since the appointment of the new Chair. Additional activities, including a strategic plan, are planned in the near future. The Biology graduate program is competitive, attracts many domestic and international students, and provides high-quality training in different fields. The graduates are successful in finding post-doctoral positions and jobs both in academia and industry. Faculty of Science is committed to supporting the department in its graduate training and research missions.

QAC Comments (to be filled in by Quality Assurance Committee):

See above