Program Progress Report

Institutional Quality Assurance Program (IQAP) Review

Health & Radiation Physics, and Radiation Sciences Graduate Programs

Date of Site Visit: March 3 & 4, 2020

Date of Progress Response Submission: June 1, 2022

Progress Report Prepared by: Dr. Alison Sills, Chair & Professor, and Dr. Laura Parker, Associate Chair (Graduate) & Professor, Department of Physics & Astronomy

Summary comment – Ten days after the site visit for this IQAP review, McMaster University shut down because of the COVID-19 pandemic. Hospitals, including the main program partner the Juravinski Cancer Centre were also essentially shut down, continuing only those activities that were essential for patient care. Either of these events would have been disruptive for the graduate programs being reviewed here; the combination was devastating. As we prepare this report (April 2022), we are still not fully back to normal in either the university or hospital sector in Ontario. Everyone's energy and attention, from the highest leadership down to the individual student, has been focussed on simply getting by, rather than making any changes or improvements. Nevertheless, the disruption of this crisis also means that when we do have the capacity to return to this work of improvement, there may be more flexible and creative solutions than we would have otherwise considered.

1. Recommendation: Geographic Isolation
Responsibility for Implementation: Dr. Robert Hunter & Juravinski Cancer Centre faculty / Dr. Laura Parker
Anticipated Timeline for Completion: Initial evaluation by December 2020. Revised timeline: Ongoing.
Additional Notes/Commentary:
Progress ☐ Completed X In Progress ☐ Other (please explain)
Department's Comments: We continue to be cognizant of scheduling issues and are working to ensure student and faculty travel is only required for necessary activities. Thanks to the covid pandemic, we are now more adept at hybrid and virtual options. We will continue to monitor this issue going forward.

Dean's Comments:
We will continue to monitor the progress on this recommendation and look to include considerations for remote and virtual engagement where appropriate.

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

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

2. Recommendation:
Juravinski Cancer Centre faculty research funding

Responsibility for Implementation:
Dr. Robert Hunter, Dr. Laura Parker

Anticipated Timeline for Completion:
Initial evaluation by December 2020. Revised timeline: Ongoing

Additional Notes/Commentary:

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

Department's Comments:
The way we pay for course-based Health and Radiation MSc students has now changed – the department pays the tuition and so those students are available for projects for free to the RadGrad faculty. We cover tuition for domestic students in this program out of the revenue we have because they are in-time graduate students.

Dean's Comments:
We have been working to bring broad based considerations to research start-up funding and access to seed funds for faculty members in Science. The Department should explore the possibility of requesting start-up funding for the Juravinski Cancer Centre faculty members similar to what has now been provided to teaching stream faculty members at the outset of their appointments.

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

See above

McMaster University

3. Recommendation:
Deeper links with Juravinski Cancer Centre

Responsibility for Implementation:
Dr. Robert Hunter, Dr. Alison Sills, Dr. Laura Parker

Anticipated Timeline for Completion:
Present recommendation to Dean of Science by May 2021. Revised timeline: Ongoing

Additional Notes/Commentary:

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

Department's Comments:
Chances for interaction of any kind were severely curtailed during pandemic. However, we have made some steps in this direction.

Kevin Diamond's Continuing Appointment Without Annual Review (CAWAR) appointment has been moved to the Department of Physics & Astronomy from the School of Interdisciplinary Science (SIS) to increase connections.

We have had more interaction with Juravinski Cancer Centre faculty on MEDPHYS 778 to include more hands-on work with radiotherapy equipment at Juravinski Cancer Centre. Changes to MEDPHYS 778 will be necessary for meeting Commission on Accreditation of Medical Physics Education Programs (CAMPEP) requirements and starting early will make this transition more seamless. We are currently discussing the necessary changes and plan to bring forward curriculum changes for the 2023-2024 calendar.

We are also in the early planning stages to organize a Radiation Sciences (RadGrad) meeting among all supervisors and the graduate chair to identify where more bridges can be built.

Dean's Comments:
These changes signal a willingness to increase the links with Juravinski Cancer Centre. I would also encourage yearly program meetings with all faculty members involved on a regular basis.

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

See above

4. Recommendation:
Succession planning

Responsibility for Implementation:
Dr. Robert Hunter, Dr. Alison Sills

Anticipated Timeline for Completion:
Initial evaluation by May 2021 and full proposals emerging over 2021-2024. Revised timeline: Ongoing

Additional Notes/Commentary:

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

Department's Comments:
We have recently completed search for a faculty member in Medical/Health Physics and Dr. Ibrahim Chamseddine will be joining the Department on July 1, 2023.

Plans beyond the current year are being developed in conjunction with the Department of Physics & Astronomy strategic plan.

Dean's Comments:
Additional succession planning includes the consideration of academic appointments for additional CAWAR faculty members linked to the recent hiring of additional medical physicists at the Juravinski Cancer Centre.

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

See above

5. Recommendation:
Community Engagement

Responsibility for Implementation:
Dr. Laura Parker

Anticipated Timeline for Completion:
Emerging discussion & integration during 2020-2021 academic year. Revised timeline: Ongoing

Additional Notes/Commentary:

Progress

X Completed

☐ In Progress

☐ Other (please explain)

Department's Comments:

All community engagement has essentially stopped during the pandemic. Nevertheless, the integration of the RadGrad program within Physics & Astronomy has led to early encouraging signs of more engagement with the Physics & Astronomy activities by a number of RadGrad students.

Dean's Comments:

The progress on this front seems appropriate. Now that in-person activities have resumed, the department is working to integrate students from the program into Physics and Astronomy.

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

See above

6. Recommendation:

Radiation Biology succession planning

Responsibility for Implementation:

Dr. Alison Sills, Dr. Laura Hunter, Department of Biology, and Radiation Oncology Division, Department of Oncology, Faculty of Health Sciences

Anticipated Timeline for Completion:

Not specified. Revised timeline: Ongoing

Additional Notes/Commentary:

Progress

☐ Completed

X In Progress

☐ Other (please explain)

Department's Comments:
Very few discussions have happened with other departments. We have all been focussed on getting our own programs/department through the pandemic and have not had the capacity to reach out to others. Radiation Oncology in particular has an enormous backlog of patients still to manage. We have a new chair and new Associate Chair, graduate, and we will start these discussions and planning in the 2022-2023 academic year.

In addition, as mentioned above we intend to have a meeting soon for all faculty involved in the radiation sciences program. One of the key reasons to do this is to plan for the future of the program and in particular discuss the radiation biology stream.

Dean's Comments:
I support the stated commitment of the Department to engage the program students as well as the leadership in other Departments about succession planning in the area of radiation biology. There are also plans for a new Cancer Institute and an Institute for Medical Isotopes at McMaster University which will likely result in support for the ecosystems linked to radiation biology.

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

See above

7. Recommendation:
Professional MSc in Occupational Health Physics

Responsibility for Implementation:
Dr. Laura Parker, Dr. Alison Sills, Dr. Soo Hyun Byun, working group

Anticipated Timeline for Completion:
Submit proposal to Faculty of Science for September 2020, follow established timeline. Revised timeline: Ongoing

Additional Notes/Commentary:

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

Department's Comments:
A draft proposal has been written and looked at by Associate Dean (Graduate) and others in the Faculty of Science. It is still on the table but our capacity for new program-building has been limited in the last 2 years.

Dean's Comments:
The constraints of the pandemic in addition to the government caps on graduate student grants have resulted in significant barriers to new program development. An internal decision was made to support the development and submission of the Commission on Accreditation of Medical Physics Education Programs (CAMPEP) proposal in advance of the further development of the Professional MSc. The expectation is that the Professional MSc proposal development will re-start after the Commission on Accreditation of Medical Physics Education Programs (CAMPEP) approval is finalized.

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

See above

8. Recommendation:
Commission on Accreditation of Medical Physics Education Programs (CAMPEP) cost/benefits

Responsibility for Implementation:
Dr. Marcin Wierzbicki & Dr. Maikel Rheinstadter

Anticipated Timeline for Completion:
Seek financial advice from with Faculty of Science by end of June 2020, submit proposal to Faculty of Science by September 2020. Revised timeline: Ongoing

Additional Notes/Commentary:

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

Department's Comments:
Commission on Accreditation of Medical Physics Education Programs (CAMPEP) application was submitted in December 2021.

Dean's Comments:
The progress on this front is on track. We await to hear from Commission on Accreditation of Medical Physics Education Programs (CAMPEP) about the proposal and next steps including a site visit.

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

See above

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9. Recommendation:
1st year course heavy

Responsibility for Implementation:
Dr. Laura Parker

Anticipated Timeline for Completion:
Implement for Winter 2021, evaluate at end of 2020-2021 academic year. Revised timeline: Completed

Additional Notes/Commentary:

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

Department's Comments:
We moved the required course MEDPHYS 775 from Fall to Winter term.

Dean's Comments:
This recommendation has been addressed by making a curriculum change. Moving the required course to second term will allow students to focus more on establishing their thesis projects.

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

See above

10. Recommendation:
Grad Student Seminars

Responsibility for Implementation:
Dr. Laura Parker, RadGrad faculty

Anticipated Timeline for Completion:
Continue existing participation in Physics & Astronomy Symposium Day. Establish or re-emphasize journal clubs by December 2020. Revised timeline: Ongoing

Additional Notes/Commentary:

Progress

☐ Completed
X In Progress
☐ Other (please explain)

Department's Comments:
RadGrad students have participated in the Department of Physics & Astronomy Symposium Day for the last 2 years. Seminars have been postponed because of covid but we are intending to start these kinds of events up again in September 2022 as long as public health measures allow them.

Dean's Comments:
The department is working to restart seminars and other engagement activities in the Fall 2022. The Associate Dean, Graduate for the Faculty of Science is also looking to establish a Faculty wide graduate student day starting in late 2022 to provide additional opportunities for all graduate students in Science.

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

See above

11. Recommendation:
Attendance at Grand Rounds

Responsibility for Implementation:
Juravinski Cancer Centre faculty

Anticipated Timeline for Completion:
Renewed emphasis for start of 2021 academic year. Revised timeline: Completed

Additional Notes/Commentary:

Progress

X Completed
☐ In Progress
☐ Other (please explain)

Department's Comments:
Medical Physics and Health Physics topics are included in the Department of Physics & Astronomy colloquium series, and graduate students at Juravinski Cancer Centre attend Grand Rounds.

Dean's Comments:
The department has taken appropriate steps to include program-specific topics in colloquium series. This should allow Radiation Sciences students to participate in the events.

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

See above

12. Recommendation:
Radiomics etc.

Responsibility for Implementation:
Dr. Alison Sills

Anticipated Timeline for Completion:
Include in discussions beginning of September 2020, hopefully resulting a successful search by July 2021. Revised timeline: Ongoing

Additional Notes/Commentary:

Progress

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

Department's Comments:
We have just confirmed that our top candidate in our most recent search has accepted our offer and will be joining the Department of Physics & Astronomy in July 2023. This person brings machine learning and related techniques to outcome prediction for cancer treatment, their optimization, and personalization.

Dean's Comments:
The hiring of Dr. Ibrahim Chamseddine will certainly advance this important area. Additional hires in the areas of AI and Machine learning have also been made in other areas of Science and we are looking to connect these researchers to build a connected ecosystem to support programs, students and activities.

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

See above