

## FINAL ASSESSMENT REPORT

### Institutional Quality Assurance Program (IQAP) Review

#### Honours Integrated Science (iSci)

**Date of Review:** March 3 - 4, 2016

*In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the **Honours Integrated Science** program delivered by the School of Interdisciplinary Science. This report identifies the significant strengths of the programs, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.*

*The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.*

### **Executive Summary of the Cyclical Program Review of the Undergraduate**

#### **Honours Integrated Science Program (iSci)**

In accordance with the Institutional Quality Assurance Process (IQAP), the iSci program submitted a self-study in February 2016 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers, one from Ontario and one from British Columbia and one internal reviewer were endorsed by the Dean, Faculty of Science, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 3 - 4, 2017. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Director of the School of Interdisciplinary Science and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Director of the School of Interdisciplinary Science and the Dean of the Faculty of Science submitted responses to the Reviewers' Report (July 2016, August 2017). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

## **Strengths**

In their report (May 2016), the review team highlighted the comprehensive and coordinated design and implementation of the program and emphasized the project based, integrated approach. They recognized that a foundation of the iSci program is its underlying philosophy and core set of pedagogical approaches that are shared by the instructional team and students. The program focuses on developing the student as a self-guided learner and creator of information and helps them develop a suite of skills and experiences that prepares them well for a range of professional opportunities. The core goals of the program are very successfully mapped to its articulated learning outcomes. The focus throughout the program on science literacy was identified as particularly unique and well done. Additionally, the reviewers commented on the strength of the instructional team (faculty and staff) both in terms of their formation of community scholars and in their commitment to the scholarship and practice of teaching and learning.

## **Areas of Improvement**

The review team had no major concerns but did identify a potential threat to the stability of the program on several fronts. Specifically they were concerned about the leadership and governance of the program in the newly formed School of Interdisciplinary Science, the stability of the instructional team in terms of both faculty and staff, and the importance of the retention of the associated instructional spaces.

The Dean of the Faculty of Science, in consultation with the Director of the School of Interdisciplinary Science shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Associate Vice-President, Faculty's office.

**Summary of the Reviewers' Recommendations with the Department's and Dean's Responses**

<b>Recommendation</b>	<b>Proposed Follow-Up</b>	<b>Responsibility for Leading Follow-Up</b>	<b>Timeline for Addressing Recommendation</b>
<p>iSci needs to appoint a faculty member from SIS to be responsible for the day-to-day operations of the program</p>	<p>The School of Interdisciplinary Science (SIS) was created on January 1, 2016 and with its creation, the iSci program was moved into SIS. From January – May 2016, the operational structure of SIS was established in a collaborative manner with those faculty and staff who had their appointments and positions moved into the School. The members of SIS voted to establish a structure including as Associate Director, Curriculum and Pedagogy and 3 Program Coordinators (iSci, Life Sciences and Medication Radiation Sciences and Medical Physics)</p>	<p>Dr. Maureen MacDonald, Director SIS</p>	<p>April 25, 2016: Retreat for SIS members to discuss proposals for operational structure and terms of reference for positions.</p> <p>April 2, 2016: Revised Terms of Reference for position of Program Coordinator iSci circulated to all members of SIS.</p> <p>May 20, 2016: Dr. Kim Dej elected as Associate Director, Curriculum and Pedagogy</p> <p>June 2, 2016: offer of Appointment of Program Coordinator iSci position to Dr. Carolyn Eyles</p> <p>June 13, 2016: Senate approval of appointment confirmed</p> <p>July 2, 2016: start of</p>

			term as Program Coordinator iSci for Dr. Carolyn Eyles.
iSci program enrolment should not increase.	We thank the reviewers for the recognition of the efforts made to refine the student selection process in iSci and agree that the efforts have resulted in improvement in the match between the students receiving offers and student success in the program. We are committed to offering a high quality, research project focussed program and recognize the restraints in terms of enrolment. We have no intention of expanding beyond the 64 student capacity in each level of iSci but will work with enrolment management to explore the options and potential impacts of different enrolment options in the future.	Dr. Maureen MacDonald, Director SIS	Fall 2016: aim to achieve target of 64 students in level 1 iSci  - Yearly: feedback from iSci Program Coordinator, Associate Director and School Administrator to inform enrolment recommendations to the Associate Dean, Undergraduate
iSci needs increased library support.	We recognize the tremendous benefits of the specialized support available to encourage the development of science literacy and communication skills in iSci. We are planning to build on this foundation of success to develop and integrate science literacy in all programs in SIS. As such, we are thankful for the initiative of the University Librarian to continue to provide access to the Thode Services Librarian and to support a 12 month contract for a School of Interdisciplinary Science Librarian through a successful Strategic Alignment Fund application.	Dr. Kim Dej, Associate Director, Curriculum and Pedagogy	-April 2016: provide feedback to posting for a 12 month position as Science Fluencies Librarian  -August 2016: Hiring of Science Fluencies Librarian  -August 2016 – July 2017: work in collaboration with Science Fluencies Librarian to develop materials and instructional programming to

			<p>support science literacy throughout all SIS programs including iSci.</p> <p>-January 2017: initiate budget discussions with University Librarian and Dean of Science about feasibility for continued support of science literacy in SIS.</p>
<p>A research project on computer science that involves basic programming should be component of the iSci curriculum</p>	<p>Explore the possibility of developing a computer science research project and to enhance the computer programming opportunities embedded in many aspects of the iSci curriculum.</p>	<p>Dr. Carolyn Eyles, Program Coordinator, iSci</p>	<p>- May 2016: during yearly iSci program review meetings discuss the computational opportunities available in levels 1 and 2 and the provision of relevant data sets to increase integration of computational activities across topics.</p> <p>-August 2016: form working group to explore computer science and computational opportunities</p>
<p>Stability of the Teaching Team needs to be improved.</p>	<p>Part of the formation of SIS was stabilize the commitment of faculty associated with its academic programs. As such, several members of iCore have had their academic appointments</p>	<p>Dr. Maureen MacDonald, Director</p>	<p>- January – April 2016: Faculty appointments for iCore faculty</p>

	<p>transferred to the School. The Director of SIS, in consultation with the Associate Director, the Program Coordinators, and the School Administrator is looking to further stabilize the collaborative teaching commitments from other units in the Faculty of Science. Further stability to iSci teaching team will be considered in future requests for faculty positions.</p>	SIS	<p>members transferred to SIS (Eyles, Harvey, Symons).</p> <p>-January – July 2016: ongoing discussions between M. MacDonald and Department Chairs and Directors about establishing more stability for teaching commitments from other units towards iSci.</p> <p>-July 2016 onward: Program Coordinator for iSci to develop 5 year plan for teaching in iSci</p> <p>-Fall 2016 develop 5 year strategic plan for hiring in SIS to systematically submit request to Faculty Appointments Committee for consideration.</p>
<p>iSci should expand its Community Engaged Learning (CEL) initiatives.</p>	<p>We thank the reviewers for highlighting the success of a number of the community based projects linked to iSci and agree with the suggestions to build on this foundation to expand the scope of community engaged learning initiatives.</p>	<p>Dr. Kim Dej, Associate Director, Curriculum and Pedagogy</p>	<p>-January 2016 onward: communication with Dr. Sheila Sammon, Director of Community Engagement, on the topic of Community</p>

			<p>Engagement, Student Leadership &amp; Peer Mentoring in SIS.</p> <p>-June 2016: Establishment of the Students as Partners Committee as outlined in the SIS Bylaws. This committee will assist in the identification and engagement of SIS students in community-based projects.</p>
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### **Dean's Response, Faculty of Science:**

The Dean thanks the review team for the report and notes that due to turnover in the Office of the Dean of Science, the response of the Dean has been considerably delayed. The Dean would also like to acknowledge that at the time of both the site visit and the preparation of the program response, she was in the role of Director of the School of Interdisciplinary Science (SIS) and therefore was responsible for the leadership of iSci and the associated IQAP review.

The Dean highlights that under the guidance of its new academic home in SIS, iSci has moved forward with a number of the recommendations including the appointment of a faculty member responsible for the day-to-day operations of the program (iSci Program Coordinator), provision of stability in some areas of the teaching team, particularly in the agreements with Departments in the Faculty of Science for the provision of TA's and instructors and in the hiring and organization of laboratory and administrative staff.

The Dean also notes that the relatively high cost of the program for the number of students served, the year over year declining application rates and the fairly high degree of attrition out of the program (and the difficulties in accommodating these students in other programs due to the unique course structure in iSci) present ongoing concerns to be addressed by the leadership of iSci and SIS.

The Dean encourages the continued expansion of innovations in teaching and learning in iSci to other programs in the Faculty of Science and other Faculties at McMaster; however, also encourages the program to be open to adjustments to their delivery model, resourcing, use of space and collaboration, particularly with the other programs in SIS.

### **Quality Assurance Committee Recommendation**

**McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with an 18-month progress report and a subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.**