

University of Toronto Annual Report on Graduate Collaborative Specialization Reviews, Cycle 6, 2021-22

Collaborative Specialization Reviews are Commissioned by the Dean of the Lead Faculty

Collaborative Specialization (CS) Definition: "an intra-university graduate field of study that provides an additional multidisciplinary experience for students enrolled in and completing the degree requirements for one of a number of approved master's and/or PhD programs within the collaborative specialization. Students meet the admission requirements of and register in the participating (or "home") program but complete, in addition to the degree requirements of that program, the additional requirements specified by the Collaborative Specialization. The degree conferred is that of the home program, and the completion of the Collaborative Specialization is indicated by a transcript notation indicating the additional specialization that has been attained." ([Quality Assurance Framework](#))

The learning outcomes of a collaborative specialization are in addition to those supported by the home program.

Collaborative Specialization & Lead Faculty	Participating Programs & Degrees	Appropriateness of Collaborative Specialization Requirements	Vitality of Collaborative Specialization	Other Strengths or Challenges Identified	Review Outcome
Cardiovascular Science (CS) Lead Faculty: Temerty Medicine Date of Summary Assessment Report: December 16, 2021	Biomedical Engineering — MAsc, PhD Chemical Engineering and Applied Chemistry — MAsc, PhD Clinical Engineering — MHSc Dentistry — MSc, PhD Kinesiology — MSc, PhD Laboratory Medicine and Pathobiology — MSc, PhD	<ul style="list-style-type: none"> Students at the MSc level are required to take a 0.5 full-credit equivalent (FCE) credit course from a selected cardiovascular curriculum list; PhD students take two of seven core courses for a total 1.0 FCE. All CSCS students must prepare a thesis in the field of cardiovascular sciences, under 	<ul style="list-style-type: none"> The CSCS administers and runs seven 0.5 FCE graduate course modules; course enrolment numbers have remained consistent or are increasing, and the CSCS has added two new offerings since the previous review. The CSCS is active with 109 faculty members and an average enrolment of 81 students per year over the last 7 years. 	<ul style="list-style-type: none"> Alumni have gone on to successfully established research/education careers in diverse disciplines, in Canada and beyond. Exiting student evaluations indicate that the CSCS met their expectations, facilitated their research and allowed them opportunities to meet a larger pool of cardiovascular researchers and receive feedback from peers. 	Memorandum of Agreement (MOA) is recommended for renewal.

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	Medical Biophysics — MSc, PhD Medical Science — MSc, PhD Pharmaceutical Sciences — MSc, PhD Pharmacology — MSc, PhD Physiology — MSc, PhD Rehabilitation Science — MSc, PhD	<p>the supervision of a faculty member of the CS.</p> <ul style="list-style-type: none"> As the common learning activity, all students are required to attend and present once at the annual Student Research Day. Students are also encouraged to engage in optional student-organized activities, as well as the Cardiovascular Summer Initiative, Open Lab: Innovation in Cardiovascular Techniques, and the Circulation Seminars. All participating programs can accommodate the requirements of the CSCS. All enrolled students must complete the CSCS requirements in addition to those requirements for their degree program in their home graduate unit. Student progress is tracked by the CSCS program administrator; upon graduation, the student receives a transcript notation, and a certificate from the CSCS. 	<ul style="list-style-type: none"> The need for CSCS graduates is evidenced by the fact that heart disease is the second leading cause of death in Canada. A new funding strategy shared by the CSCS partners has been implemented along with fundraising initiatives through Temerty Medicine. Supporting clinical units have agreed to provide financial support as needed to cover any shortfalls on a year-by-year basis. Approaching new partners while building commitments with existing partners will enable the CSCS to remain financially stable. By emphasizing interdisciplinary research across the theme of cardiovascular sciences, the CSCS builds upon the strength of individual units and helps to consolidate research across the University of Toronto's health-related Faculties. The CSCS offers about \$150,000 worth of program scholarships and awards to students each year. 	<ul style="list-style-type: none"> To address the challenges presented by COVID-19, the CSCS moved its courses, research day and operations online as quickly as possible. Efforts were made to maintain academic and research excellence and continuity while also attending to the health and wellbeing of the CSCS community. The CSCS will continue to leverage the interest in online learning. The CSCS director met with the chairs and deans of participating units that have not had any students during the review period. While some units are exploring withdrawal from the program, the director has begun plans to grow participation in others. In addition to reaching out to new faculty in participating units, the CSCS will explore relationships with newer research organizations, such as the Ted Rogers Centre for Health Research and the Toronto city-wide Division of Cardiology. 	

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				<ul style="list-style-type: none"> The CSCS is implementing several initiatives to increase student enrolment and further develop the student experience. 	
<p>Neuroscience</p> <p>Lead Faculty: Temerty Medicine</p> <p>Date of Summary Assessment Report: March 3, 2022</p>	<p>Applied Psychology and Human Development — MA, PhD</p> <p>Biochemistry — MSc, PhD</p> <p>Biomaterials and Biomedical Engineering — MAsc, MSc, PhD</p> <p>Cell and Systems Biology — MSc, PhD</p> <p>Computer Science — MSc, PhD</p> <p>Dentistry — MSc, PhD</p> <p>Laboratory Medicine and Pathobiology — MSc, PhD</p> <p>Medical Biophysics — MSc, PhD</p> <p>Medical Science — MSc, PhD</p> <p>Music and Health — MA, PhD</p> <p>Pharmaceutical Sciences — MSc, PhD</p>	<ul style="list-style-type: none"> All Collaborative Specialization in Neuroscience (CSIN) students must prepare a thesis in the field of neuroscience, under the supervision of a core CSIN faculty member. Students at the master’s level are required to take a 0.5 FCE credit course from a selected neuroscience curriculum list, while PhD students must complete courses totaling at least 1.0 FCE. As a common learning activity, master’s students must attend the Annual Collaborative Specialization in Neuroscience Research Day at least once; PhD students must attend twice. Master’s students must attend at least 70% of lectures in the CSIN Distinguished Lectureship Series. 	<ul style="list-style-type: none"> The CSIN’s committee meets annually to determine which courses qualify as neuroscience-related; there are presently 75 neuroscience courses on offer. A Trainee Career Intentions survey enables outgoing graduate students to identify career goals; the comparatively high intention of CSIN graduates to pursue neuroscience/research-based careers exemplifies both the need and demand for the program. CSIN is the largest collaborative graduate specialization in neuroscience in Canada. Participation in the CS is robust; as of August 2021, there were 409 faculty members, 394 graduate students and 86 postdoctoral fellows. 16 academic departments across 7 Faculties participate in the CS. 	<ul style="list-style-type: none"> CSIN students complete a survey during the program to evaluate their learning experience, and feedback is overwhelmingly positive. As there is no Graduate Department in Neuroscience at U of T, CSIN fills the important role of providing neuroscience students with a community and sense of identity. To address challenges presented by COVID-19, CSIN transitioned to online program delivery. Remote learning has enhanced program participation, particularly of students and faculty from the University of Toronto Mississauga and the University of Toronto Scarborough. The shift to digital platforms is also encouraging collaborations with the Kite Research Institute, the Pan 	<p>MOA is recommended for renewal.</p>

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	Pharmacology and Toxicology – MSc, PhD Physiology – MSc, PhD Psychology – MA, PhD Public Health – MPH, MScCh, MSc, MHSc, PhD Rehabilitation Science – MSc, PhD	<ul style="list-style-type: none"> • All participating programs are research thesis-based and can accommodate the CS requirements. • Learning outcomes effectively broaden the scope of graduate training beyond those supported by the students’ home program. • In addition to providing fundamental cross-disciplinary knowledge, the CSIN offers opportunities for students to explore the most current and advanced developments in neuroscientific technology, techniques and discoveries. • To better prepare incoming trainees and new faculty for the program requirements and expectations, CSIN has implemented an annual orientation event. • Student progress is tracked by CSIN’s administrator and reviewed by CSIN’s executive committee; students who fulfil all 	<ul style="list-style-type: none"> • Enrolment in the CS has increased 26% and graduation by 71% since 2014. 	American Neuroendocrine Society, the Fields Institute and others. <ul style="list-style-type: none"> • CSIN is exploring a hybrid model of event delivery post-COVID, to provide valuable in-person networking opportunities while continuing to offer the flexibility of remote learning. • To improve student experience and further develop research abilities, CSIN is considering adding additional workshops on the development of practical research skills. • Equity, diversity and inclusion is noted as an area of increased focus. • To improve program administration, CSIN has developed new online forms and a database, moved to a digital newsletter, will be launching a new website this year and is developing its social media presence. • CSIN will continue to work towards increasing its international reputation with an emphasis on building on its collaborations with 	

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		CSIN requirements receive a transcript notation and an official document of program completion.		the Max Planck-University of Toronto Centre for Neural Science and Technology; the shift to delivering lectures online has encouraged and enabled such partnerships.	