

Selection Committee  
NSERC Award for Science Promotion

August 25, 2017

Dear Colleagues,

It is an honour for me to nominate the *Convergence—Perceptions of Neuroscience* initiative for the NSERC Award for Science Promotion. The Convergence Initiative is a partnership between **Concordia's Faculty of Fine Arts (FoFA)**, and the Brain Repair and Integrative Neuroscience (BRaIN) Program of the **Research Institute of the McGill University Health Center (RI-MUHC)**. Convergence brings together fine arts and neuroscience research students as partners in a series of projects and events. Over the course of a few months, pairs of students from each discipline learn about each other's area of expertise. Art students also produce artwork that reflects their interpretation of their partner's scientific research. This bilateral exchange exposes neuroscience students to the artistic language and creative process. It also **provides visual arts students with a deeper understanding of cutting edge neuroscience research**. The knowledge and expertise that fuels this partnership, as well as the artwork that results from it, is also **shared with the general public via public lectures, participation in community events, and art exhibitions**.

From the moment of its conception, the Convergence initiative has hit the ground running. It was launched just over a year ago in the summer of 2016 as a small initiative with limited means, but it has already contributed meaningfully to the dissemination of science to non-scientific audiences. As Convergence grows and matures as a program in the upcoming years, its impact as an instrument of science promotion will only grow with it.

The creative and connecting force behind the Convergence initiative, Dr. Cristian Zaelzer, is a research associate in my lab at the RI-MUHC, and he has been carrying the project on his shoulders as an unpaid volunteer. His partners and supporters include Dr. Keith Murai—the leader of the BRaIN Program, Dr. Rebecca Duclos—the Dean of FoFA, Dr. pK Langshaw—Chair of Concordia's Department of Design and Computational Arts, Ms. Bettina Forget—owner of the Visual Voice Gallery, and Dr. Katalin Toth—Vice-President of the Canadian Association for Neuroscience (ACN-CAN). Convergence is also supported by a team of 18 volunteers who help with event coordination, communications, photography and fundraising.

In its first iteration, Convergence involved 16 graduate students (Master's and PhD) and postdoctoral fellows from the BRaIN program. Their research expertise was diverse and included fundamental cellular and synaptic neuroscience, plasticity, vision, brain imaging and traumatic brain injury. These individuals were paired with 20 FoFA students from 14 different artistic disciplines that included sculpture, dance, drawing and film performance. These students were registered in an advanced fine-arts undergraduate class (DART-461) that was created by FoFA for Convergence, based on Cristian Zaelzer's initiative. To meet the course's requirements, FoFA students produced a piece of artwork in close collaboration with their partner's research, which was then exhibited for the general public.

The bulk of the planning and conceptualization for Convergence took place throughout the summer of 2016, and activities were held between August 19<sup>th</sup> 2016 and May 31<sup>st</sup> 2017. Here is a brief overview of the Convergence activities held over that time period:

- **5-minute neuroscience presentations:** 16 neuroscience students explained their research in lay terms to an audience of 30 FoFA students and 5 FoFA professors, followed by discussion [October 12<sup>th</sup> 2016].
- **5-minute art presentations:** 14 FoFA students gave presentations to an audience of BRaIN students [January 20<sup>th</sup> 2017].

- **Guided visits of neuroscience laboratories:** FoFA students visited 5 fundamental neuroscience laboratories [November 25<sup>th</sup> 2016], and 3 vision science laboratories [February 17<sup>th</sup> 2017] from the BRaIN program. Each visit was followed by a social event between FoFA and BRaIN students and faculty.
- **Guided visits of art studios:** BRaIN students visited FoFA studios to learn about the artistic practice. The visit was followed by a social event between FoFA and BRaIN students and faculty [April 7<sup>th</sup> 2017].
- **Visits to museum and art galleries :** BRaIN students were taken on a tour of the Musée d'art contemporain de Montréal (MAC), SDC Gallery and Visual Voice Gallery by FoFA students and faculty [December 11<sup>th</sup> 2016].
- **Science Promotion Workshop:** 7 BRaIN students participated in a 3-hour workshop called *Public Speaking for Neuroscientists* by Valérie Harvey, MUHC's Communication Specialist [January 17<sup>th</sup> 2017].
- **DART-461 course:** [January 13<sup>th</sup> to May 27<sup>th</sup> 2017] FoFA created a 3-credit undergraduate course capped at 20 students. FoFA students formed a team with one of the 16 participating BRaIN students to produce a final artwork project. Course events included introductory lectures by outreach experts, initial and midterm presentations of the artwork [March 2017], and a final critique and jury selection of pieces [April 13<sup>th</sup> 2017] to be exhibited at the Visual Voice Gallery.

The purpose of the events mentioned above was to expand the minds of FoFA and BRaIN students by teaching them about the other side. However, the **Convergence initiative also promotes science to a wider audience by creating events and platforms that engage the general public.**

- **Public neuroscience lectures:** Two BRaIN students gave a general-audience lecture on basic principles of brain functioning [November 25<sup>th</sup> 2016; 216 people in attendance]. Two other BRaIN students gave another lecture on the functioning of the sensory system [February 17<sup>th</sup> 2017; 54 people in attendance].
- **Public lecture on art and science collaborations:** Five FoFA students gave a general-audience lecture and held a discussion panel on collaboration between art and neuroscience [April 7<sup>th</sup> 2017; 120 people].
- **Public exhibition at the Visual Voice Gallery:** The artwork that emerged from 14 Convergence teams was exhibited between April 22<sup>nd</sup> and May 20<sup>th</sup> 2017 at a gallery that specializes on art that is connected to science. Artistic media included tangible media such as wood and paint, as well as dynamic artwork such as kinetic sculpture, performing arts and videos. A total of 650 visitors saw the exhibition.
- **CAN outreach day:** An outreach event that exhibited artwork and involved participants from the Convergence project was held in the auditorium of Montréal's Grande Bibliothèque (BAnQ) for the 11<sup>th</sup> Annual Meeting Canadian Association for Neuroscience [May 27<sup>th</sup> 2017; over 300 people in attendance]. An information booth about Convergence was also held throughout the length of the CAN meeting at Hotel Bonaventure in Montréal [1,200 conference attendees].
- **24 heures de science:** An event called *Le Cerveau, c'est simplement beau* was held at the Visual Voice Gallery as part of *24 heures de science*, a day of scientific activities for all ages held all over the province of Québec since 2006, and recognized by Unesco [May 13<sup>th</sup> 2017].
- **Lectures by Dr. Zaelzer:** Cristian has promoted scientific dissemination to non-scientific audiences by presenting at a colloquium on outreach at Concordia, to Brock University's Interdisciplinary Humanities graduate program, and to clinical psychiatrists at the MUHC. He also organized a discussion panel on scientific literacy and citizen involvement at the Journées Internationales de la Culture Scientifique organized by l'Association francophone pour le savoir.

- **Online and social media presence:** A catalogue that details the Convergence initiative is made available to a general audience via a website developed and supported out-of-pocket by Dr. Zaelzer. Convergence is also present on Facebook, Twitter, LinkedIn, YouTube and Instagram.
- **Media coverage:** Convergence's impact has been amplified by extensive media coverage. Convergence was covered by 15 separate news pieces (published or broadcasted) by organizations such as the CBC (radio program *Homerun*), *Le Devoir* (58,000 copies), *The Link* (10,000 copies), as well as McGill, Concordia and RI-MUHC news.

What makes Convergence exceptional is the quality of the interactions it creates between artists and neuroscientists. The extensive partnership formed by Convergence teams, and the bilateral nature of the exchanges between both disciplines, is fun, daring and innovative. This bilateral dialogue is central to Dr. Zaelzer's core belief that respect and interest for another's discipline is best achieved as a two-way stream. It is also based on what is known as the two-way engagement model, which is the approach recommended by the Council of Canadian Academies (2014) to promote exchanges between science and society. Convergence also benefits from the unique combination of expertise that defines the Montréal knowledge landscape, which includes extensive cutting-edge neuroscience research, and an exceptionally vibrant artistic community.

The impact of Convergence as a tool of science promotion can be felt at several levels. The artwork produced by Convergence engages non-scientific audiences and teaches them about current neuroscientific concepts in an intuitive and relatable manner. Because it involves students, Convergence also invests in science promotion in ways that will be felt for years to come: 1) it familiarizes new cohorts of artists with the scientific process, and it emboldens them to serve as science ambassadors; 2) it teaches new generations of neuroscientists how to discuss their work with non-scientific audiences, and it helps them understand the profound impact their work can have on people outside academia.

While Convergence has achieved a lot in its inaugural year, the right support will give it the opportunity to expand its influence for years to come. BRAIN and FoFA have agreed to retain Dr. Cristian Zaelzer in a paid position to manage and grow the Convergence initiative. Support from CAN and the Visual Voice Gallery has also been confirmed for another year. The plan is to re-invent the DART-461 course to involve graduate arts students, and to also give participating neuroscience students credits that count toward their PhD program, possibly as part of a formal course on scientific outreach. Additional plans include expanding and consolidating partnerships with other organizations to find broader platforms to involve the general public.

The enthusiasm Convergence has generated so rapidly demonstrates the power and appeal of its central concept, and its potential for growth. It also reveals a need to expand research training to provide scientists with the tools and confidence to make their work more accessible to a lay audience, and an understanding of the importance of educating and engaging the public.

Sincerely,



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