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Society for Neuroscience  
Awards Selection Committee  
Science Educator Award

May 20, 2019

Re: Nomination of Dr. Cristian Zaelzer for Science Educator Award

Dear members of the selection committee,

It is with great enthusiasm that I nominate Dr. Cristian Zaelzer's for Society for Neuroscience *Science Educator Award*, supported by the Dana Foundation. I have known Cristian since 2009 when he joined my lab as a post-doctoral Fellow. Cristian quickly became a key member of my team and was promoted to *Research Associate* upon completion of his tenure as a Fellow (max 5 years in Canada). During this time, Cristian accomplished several major scientific breakthroughs. Notably, he successfully cloned the ion channel responsible for the transduction of hypertonicity in osmosensitive neurons of the Supraoptic Nucleus (SON) and *Organum Vasculosum Lamina Terminalis* (OVLT). His work, published in *Cell Reports*, is a true landmark within the field of neuroscience because it outlines a key mechanism by which the brain monitors and regulates the balance of salt and water in the body. Cristian also made key contributions to our recent demonstration that vasopressin serves as the neurotransmitter that mediates the regulation of thirst by the central circadian clock. This work, which features Cristian as second author, was published in *Nature* magazine and was the focus of a broad interest by the scientific community and the general public. Cristian is currently exploring the molecular phenotype of temperature and pressure sensitive neurons in the preoptic region of the hypothalamus and is also making key contributions to the work of other lab members. Several publications in prestigious journals are evidence of his achievement and commitment to scientific work.

Cristian is a charismatic "people-person" who loves to teach. He not only likes to teach advanced scientific concepts to science trainees, he also loves teaching science to the general public, and is a fierce advocate for the importance of disseminating science to society. Furthermore, Cristian is an accomplished artist who has worked with many different kinds of media and incorporates much creativity into his scientific work (e.g. in the form of experimental design and preparation of figures). As someone who treads in both worlds, Cristian also has a deep-rooted interest in teaching the marvels of science to artists, and also advocating for the mutual importance of science and art for society.

During 2016, Cristian's interests in science-art advocacy pushed him to formally establish a non-profit organization named *Convergence, Perceptions of Neuroscience*. This initiative is based on a novel concept that he developed with the objective of delivering neuroscience to people who normally lack any opportunity for exposure to real science.

*Convergence*, born with the idea of promoting and pushing forward the education of the general public about neuroscience and art, and the crossover between the two. The initiative aims to foster collaborative work, transdisciplinary thought and knowledge. Their final goal is to facilitate research, discussion, the transmission of knowledge, and exchanges of resources and expertise to advance the education of neuroscience and art, the connection between them, and the engagement of the general public.

In July 2016, Cristian obtained funding and logistical support from Dr. Keith Murai, director of the Brain Repair and Integrative Neuroscience (BRaIN) Program of the Research Institute of the McGill University Health Centre (RI-MUHC), Dr. Rebecca Duclos, Dean of the Concordia University Faculty of Fine Arts (FoFA), along with the Chair of the Department of Design of Computational Arts of this prestigious Faculty. By August of the same year, he had also gathered the support of Dr. Katalin Toth, then Vice-President of the Canadian Association for Neuroscience (CAN/ACN) and today its President. At the end of that year he had joined the Montreal General Hospital Foundation, and the Visual Voice Gallery. In 2017, Cristian brought the support of the prestigious Canadian Integrated Program in Neuroscience (IPN) of McGill University as the final piece of the institutions supporting his work under *Convergence*.

Since its origins, the main activity of *Convergence* has been an interdisciplinary course hosted at the Faculty of Fine Arts of Concordia University. The course, as an ongoing annual course, started in 2017 as an experimental independent study with three credits and registration open to FoFA students with volunteer attendance for neuroscience trainees. These trainees spanned from different institutes gathered under the BRaIN Program and IPN; The Centre for Research of Neuroscience (CRN), the Vision Research Group (VRG), the Montreal Neurological Institute (MNI), and the Allan Memorial Institute. 20 FoFA students and 16 BRaIN trainees participated on that first iteration. In 2018, the course evolved to a full-year course with six credits with open registration for FoFA and incorporated the registration as an elective course for IPN students, and the option of volunteer attendance for BRaIN trainees, 14 FoFA students and 12 IPN/BRaIN trainees participated on that second iteration.

The primary outcomes of the course are the public exhibitions of the collaborative work between neuroscientists and artists. These exhibitions display artworks produced by the teams based on the research of the neuroscientist part of the team. Additionally, the neuroscience students participate in a Science Symposium where they explain to the general public their research using non-traditional methods learned during the course. Finally, two lectures accompany the month of public activities that mark the closure of the course.

Between the 2017 and 2019 exhibitions, 28 artworks have triggered the discussion about neuroscience attracting thousands of people to the six public exhibitions in Montreal. An international crowd joins them by accessing the two online catalogues published that accompany each of the exhibitions, the social media coverage of the activities, and the public conferences accessible online.

The course uses a unique model based on the “*two-way engagement*” framework that uses transversal sharing of knowledge without emphasizing one part over the others. The current course combines lectures, debates, laboratory visits, workshops, studio work, and independent study to encourage all participants through collaboration to understand and discover territories outside their scientific and artistic comfort zones.

Additionally, to the course, Cristian created in 2017 the series of talks named *Convergence Sci-Art Art-Sci Series* focused on the crossover of disciplines with science, especially arts and communication. From its creation to today, seven talks have covered subjects like the influence of media on modern science, the public perception of the scientific method, neuroscience popular misconceptions, and science immersed artistic practice. Cristian himself has been invited as a panelist or guest speaker for eighteen times since

October 2016 sharing at different universities, community events, and art galleries, among them McGill University, Concordia University, Queen's University, Brock University, *la Association francophone pour le savoir* (ACFAS), as well as events sponsored by the Natural Sciences and Engineering Research Council of Canada (NSERC), and community events like Transiro, neuroscience series of neuroscience talks at Métèque Gallery, and the March for Science. He has presented on topics like the neuroscience behind science denialism, the importance of the arts and emotions to facilitate science communication, and the development of transdisciplinary collaborations. The results observed in the course and public events have also been presented in the form of a poster at the Canadian Association for Neuroscience and the Society for Neuroscience.

Today, Cristian and the *Convergence* team, are working to establish a new collaboration with the Montreal Fine Arts Museum to use the museum's collection to introduce neuroscience of the senses and cognitive process to a new audience. Cristian also works with the Department of Creative Art Therapies and the Department of Sociology at Concordia University as a part of a transdisciplinary team. They are focusing on developing a new course that will welcome student-community collaboration teams to examine and respond to the social determinants of health through the study of place attachment, neuroscience, liberation arts, and the expressive therapies continuum. This course, as well as the curated tours to the Montreal Fine Arts Museum, will open a new venue for neuroscience to the Montreal community in 2020.

The innovative character of Cristian's *Convergence* project did not go unnoticed and the initiative has already received extensive media coverage, which further increased its impact for neuroscience advocacy in Montreal and Canada. Between October 2016 and May 2019, no less than 20 separate news related pieces were either published or broadcast. Indeed, *Convergence* was featured on Radio (CBC Radio, Program Homerun), in newspapers (The Link (10,000 copies), McGill News, En Bref, Le Devoir (58,000 copies)), website news (Concordia News, RI-MUHC News), as well as institutional websites (MUHC, The Montreal General Hospital Foundation, *Les Journées Internationales de la Culture Scientifique* by ACFAS, Les 24 Heures de Science), thereby reaching an audience numbering in the tens of thousands. <http://www.convergenceinitiative.org/newsroom>

Cristian is also a graphic designer, he dedicates many hours of his "free" time to create the beautiful imaginary behind the media machinery of *Convergence*. The website, the two exhibitions catalogues printed and online, the photography, big part of the videography, and the more than fifteen posters promoting *Convergence* events to the general public are part of that dedication to the communication of science that he has.

Under *Convergence*, Cristian has made the students the key mediators needed to initiate the changes that has helped to demystify the image of the scientist to the art community, and enlightened neuroscientists about the value of art and culture as an alternate mechanism for disseminating science. The impact of this adventure has had a significant impact on the broader community, and its success indicates that continued efforts must be made in this direction.

Through the creation and elaboration of *Convergence*, Cristian has revealed himself to be a true and innovative leader for science outreach. The massive amount of work performed by this one energetic individual, produced in parallel with his scientific research activities, are simply stunning. Yet his work with *Convergence* during 2016-19 is only the beginning of a long-term outreach effort to represent Neuroscience within the greater community. Many other important outreach projects are incubating in this unique individual's brain. As such, I cannot think of any other person that would be more deserving of SFN's *Dana Foundation Science Educator Award* than Cristian Zaelzer. Receiving this recognition from

SFN would go a long way to further motivate his efforts, and I thus give him my fullest support. I hope the committee will select his contributions for recognition through the *Science Educator Award*.

Yours sincerely,



**Charles Bourque PhD FRSC**

**James McGill Professor**

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