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Society for Neuroscience  
Awards Selection Committee  
Science Educator Award

June 9, 2017

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 this past year, Cristian's interests in science-art advocacy have 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.

Cristian's program aimed to engage teams comprising arts and neuroscience trainees in a collaboration that was based on a bilateral exchange of knowledge, and where both partners would contribute in an equal way. Cristian's concept is based on the premise that the best way to generate interest and respect for other people's work is by showing the same respect and interest for workers in other disciplines. The initiative included many stand-alone events (outlined below) together with a formal 3-credit course which served as the core vehicle for the project.

In July 2016, Cristian convinced Dr. Keith Murai, director of the Brain Repair and Integrative Neuroscience program (BRaIN) of the Research Institute of the McGill University Health Centre to support his initiative. By mid-August, he had also gathered the support of Dr. Katalin Toth, Vice-President of the Canadian Association for Neuroscience (CAN/ACN), Dr. Rebecca Duclos, Dean of the Faculty of Fine Arts of Concordia University (FoFA), along with several key academics and 16 neuroscience trainees. These trainees spanned from different institutes gathered under the BRaIN Program and McGill's Integrative Program in Neuroscience (IPN); The Centre for Research of Neuroscience (CRN), the Vision Research Group, the Montreal Neurological Institute (MNI), and the Allan Memorial Institute.

Having inspired these people with the *Convergence* concept, Cristian then developed the practical elements of the program. First, in September and October of 2016, the neuroscience trainees prepared short talks (five minutes) in which they explained their research to the art students. Then, between October and December of 2016, Cristian contributed to the creation of a course offered by FoFA to frame the collaboration between art students with the neuroscience trainees. This 3-credit course ran from January to April of 2017.

In October 2016, Cristian developed "***The Black Box***," an event held at the Montreal General Hospital, which allowed the art students and academics of FoFA to visit laboratories at the CRN where neuroscience trainees perform their research. This event was followed by a public talk by science trainees who presented core concepts in neuroscience. This highly successful activity was attended by over 130 people who continued to hold discussions about neuroscience during the reception that followed. Cristian believes that social gatherings of this type are particularly effective to generate new ideas and for the consolidation of collaborative work between people.

In December 2016, the two-way collaboration inspired art students to bring neuroscientists into the fold of the contemporary art scene in Montreal. This was achieved by having arts trainees accompany and guide scientists through visits at several museums and galleries in an event called "***The White Box***." This event further enhanced mutual respect between science and art trainees.

From January to April 2017, Cristian was involved in mentoring and advising art students in the course ***DART461*** created by FoFA to formally frame the *Convergence* collaboration. The class received 85 applications from which 20 students were selected to participate. ***The Five Minute Talks*** from the neuroscience trainees inspired art students to create their version of these talks to explain to neuroscientists their art practice. Following the talks, neuroscientists and artists established 19 teams that explored the neuroscience brought by individual trainees using media including sculpture, dance, film, painting, graphic design and digital arts. To enhance these efforts, Cristian established a strategic and non-profit collaboration with Montreal's *Visual Voice Gallery*, a unique gallery that specializes in art-science exhibits, which provided a terrific venue to display the art pieces to be generated by *Convergence* teams.

While *DART461* was in development (February 2017), Cristian organized “**Sensory**”, another neuroscience event directed at art students and the general public. On this occasion, arts students and academics first explored the Vision Research Group laboratories at the Montreal General Hospital. This was followed by a public lecture on the neuroscience of the senses, also held at the Montreal General Hospital, and which was attended by more than 60 people. Once again, the event concluded with a social gathering that created an opportunity for discussion and spearheaded new ideas. *Sensory* was followed in April 2017 by another *Convergence* art event, “**Brainwaves**”, where neuroscience trainees and academics were invited to explore the studios and labs at Concordia University where the artists perform their own work and research. This visit was followed by an interesting talk about art-science collaboration, and by another social gathering.

Ultimately, the art-science teams participating in the DART461 course produced 15 amazing works of art which were formally displayed at various venues between April 22 and May 20 (2017). At first, the works were featured at two independent exhibitions presented at the *Visual Voice* Gallery. The shows, named **Convergence, material**, and **Convergence, dynamic**, were visited by over 600 people. Cristian also arranged for the works to be highlighted as part of **24 heures de science**, a public outreach activity sponsored by UNESCO Canada and the Natural Sciences and Engineering Research Council of Canada (NSERC). With support from CAN, Cristian also organized an exhibition of the works within the framework of the 11th annual CAN meeting held in Montreal. The exhibition took place at **Bibliothèque et Archives Nationales du Québec** (BAnQ) on May 27th as part of the outreach day that CAN holds prior to their scientific conference. This event was incredibly rich and successful. Personally, I was particularly impressed by the degree of understanding of neuroscience that had been achieved by art students, and reciprocally, by the neuroscientists’ understanding of the artistic concepts that had emerged from their collaboration. The spirit of collaboration and camaraderie within the teams was quite evident and, perhaps more than anything else, demonstrated the impact and success of the *Convergence* Initiative. Around 300 members of the general public attended the BAnQ exhibit and this was subsequently extended to an audience of over 1,200 neuroscientists gathered at Montreal’s Hotel Bonaventure for the CAN conference. It is important to note that during this meeting Cristian not only personally managed the exhibits and delivered presentations on *Convergence* through videos and an educational poster. He also presented his own molecular mapping work at one of the CAN scientific presentations!

As I mentioned earlier, Cristian is a skilled graphic designer and artist. As such, he has created a stunning website and virtual home for *Convergence* at [www.convergenceinitiative.org](http://www.convergenceinitiative.org). This website, funded out of pocket, provides an effective link between the general public, the artists and the neuroscientists. The activities of *Convergence* are also extended on Facebook, Twitter, LinkedIn, YouTube and Instagram. The website also serves as a platform that now disseminates other art-science initiatives. For example, in June 2017 the website hosted publicity for **Neurocraft**, an art-science event organized by the Manitoba Neuroscience Network. Cristian also personally created most of the graphic material used to publicize the various events and exhibitions organized by *Convergence*. This includes seven tabloid sized posters and a magnificent exhibition catalog which illustrates and documents the works produced and exhibited by the neuroscience-artist teams. Notably, this includes descriptions of the neuroscience behind each piece, how the art was conceived to represent it, and the biographies of

the students involved in the work. Samples of these materials are attached with the nomination package.

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 June 2017, no less than 15 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 thousands.  
<http://www.convergenceinitiative.org/newsroom>

Cristian also presented conferences on the *Convergence* concept and initiative at several venues in Quebec and Ontario. He first introduced *Convergence* in October of 2016 to an audience of multidisciplinary professionals in the colloquium organized by Concordia University named "Blood, Brains + Other Trains: Thoughts on Emerging Collaborations & Camaraderie in the Arts+Sciences". This presentation allowed Cristian to establish contacts that would produce the collaboration with the *Visual Voice* Gallery. In February 2017, he also gave invited presentations on his vision of Neuroscience-Art collaborations and *Convergence* at Brock University's Ph.D. Program in Interdisciplinary Humanities, and at the NeuGeneration conference organized by undergraduates at Queen's University. In March 2017, the Mozilla Science Lab invited Cristian to speak about *Convergence* in their event Open Research McGill at McGill University Notman House. During May 2017, Cristian also organized a symposium at the *Journées Internationales de la Culture Scientifique* sponsored by ACFAS, Université de Lorraine and McGill University. This symposium attracted neuroscientists, artists, owners of public spaces, and academics to discuss neuroscience outreach through the arts. Also in May, Cristian was invited by the Department of Psychiatry at McGill University to present *Convergence* during the prestigious *Grand Round Talks*. Finally, he had the honor of introducing *Convergence, Perceptions of Neuroscience* as a short talk to the public during the outreach day of CAN's 11th Annual Meeting. Cristian's presentations highlight the importance of communicating knowledge to the public, and highlighting the relevance of basic science research for solving contemporary problems faced by society and humanity as a whole.

Cristian's outreach work has targeted and effectively reached the public at large. Through his innovative vision, this successful mission was carried out using teams of Arts and Neuroscience students that served as a vehicle to deliver an important message. Indeed, Cristian feels that students are the key mediators needed to initiate changes in the reciprocal perceptions of neuroscientists and artists. His work has helped 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 2016-17 is only the beginning of a long term outreach effort to represent Neuroscience within the greater community. Indeed, Cristian is already establishing new partnerships to bring a pairing of Psychiatry and Art therapy to *Convergence* during the coming year, and he hopes to target Quebec's far-North communities in the near future. 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 *Science Educator Award* than Cristian Zaelzer. Receiving this recognition from SFN would go a long ways 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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