

2018 NYC Neuromodulation Conference and NANS Summer Series

Late Breaking Abstract Poster #29: Neuroscience Curriculum Development based on Neuromodulation as a Stepping Stone Towards Modernizing K-12 Education and Outreach Efforts to Bring Public Awareness of Emerging Neuromodulation Technologies

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2. Science from Scientists (USA)

3. The Bakken Museum (USA)

The objective of this collaborative for-profit and non-profit partnership is to develop high quality curricula that use hands-on activities to introduce students to neuromodulation of the brain, which has potential in a variety of medical applications to assist in detection, diagnosis and modulation of biological conditions. It is envisioned that supplementing K - 12 classroom activities with high quality lessons that focus on neuromodulation would increase student awareness and comprehension of brain function and its role in everyday life, of technologies that may be used to externally control those brain functions, and of careers and technologies in the field of neuromodulation. This joint partnership would accelerate access of the innovative curricula to all schools including rural and disadvantaged schools by first launching pilot lessons in schools, evaluating the pilots, and then, scaling up with teacher and student feedback received from the pilots. The objective of the first pilot lesson, "Healing the Brain with Electric current" is to introduce students to the concepts of neuromodulation and tDCS. Students act as doctors in a hands-on activity that incorporates hypothetical case studies for students to read determine the best course of "treatment" for their "patients" based on their understanding of chemical and electrical solutions to health-related issues. This lesson is geared towards 7th and 8th grade students. This lesson will be taught during the school day, not after school, ensuring that all students are exposed to the same information, not just students that sign up for after-school programs that may have already self-selected as having an interest in STEM. Teaching during school requires that curricula connect with state and/or national science standards. "Healing the Brain" is informed by the Next Generation Science Standards (NGSS). In addition to in class curricula development, outreach activities are held to bring public awareness and public engagement to emerging neuromodulation technological capabilities and their applications to human health. It is envisioned that this partnership would be a stepping stone towards modernization of the current STEM education and training programs and the creation of next generation work force.

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