



The Neuroscience of Fun! Creating an Avenue of Public Education through Academia-Community Partnerships

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Background: The field of neuroscience offers exciting, yet complex, insights into the human mind. In recent years, the need to improve the dialogue between neuroscientists and the public has been recognized, and an emphasis has been placed on the generation of public-based programs which reach outside the academic environment and into the community. Promising avenues for such enterprises include public libraries, children museums, scout troops and elementary school programs.

Method: The current project created partnerships between the Department of Psychology at Saint Francis University (SFU) and multiple community allies in rural Pennsylvania, aiming to generate a public-oriented, neuroscience-based, fun and educational outreach program. The community partners included the Hollidaysburg Area Public Library, Foot of Ten & CW Longer Elementary Schools, the Hollidaysburg Area Gifted Program, the Quaint Corner Children's Museum & various Scout troops in Central PA. The goals of the program were defined, faculty and student instructors were recruited and trained, marketing to the public generated, and the procedures required to support academia-based teaching within the community were established. The success of the program was evaluated using feedback (testimonies) generated by the public, students, and the community partners. Additional parameters included the number of attendees at the events, as well as indirect measures of community interest in the program.

Results:

Picture 1. The inspection and dissection of sheep brain specimens at the Hollidaysburg Area Public Library (left), and with the Ebensburg Cub Scouts (Right).



The program included the dissection of preserved sheep brain & cow eye specimen (structure and function of the nervous system), the generation of individual taste maps and exploration of various perceptual illusion (sensation & perception), microscopic observation of the behavior of water fleas (*Daphnia Magna*) under the influence of alcohol (drugs' effects on the brain), and the training of live rats and dogs (learning & memory). All events were well attended (50-100 attendees) and generated much interest from the public.



Picture 2. Exploring perceptual illusions and eye/brain specimen at the Quaint Corner Children's Museum, Altoona, PA.



Picture 3. Exploring taste maps & learning about the nervous system during the Hollidaysburg Area "Gifted day", Loretto, PA.



Picture 4. Exploring perceptual illusion, sensory system organization & drug effects on *Daphnia Magna* at the Hollidaysburg Area Public Library.

Public testimonies

"It's truly hard to summarize the great benefits of this program for my family. My children, Ben, age 10, and Chloe, age 11, have been so inspired by the program that both have decided to pursue science fields in their future education. For our children, who attend a small school, this hands-on experience with goggles, scalpels, and dissections may not otherwise occur until college. Our school system simply can't afford these opportunities. This opportunity offers such a benefit to our rather oppressed socioeconomic community. I wholeheartedly thank SFU for this amazing and educational opportunity for my family." (Jennifer and Dave Wagner).

"We loved the interaction with the college students, they were all extremely knowledgeable, outgoing and interesting. There were many different stations, but my boys were most intrigued by the brain illusions and tuning forks. I couldn't get them away from that station, they were having so much fun trying to decipher what each card meant!" (Melissa Garrity).

Community partner testimonies

"We were immediately interested in a partnership to bring neuroscience to our library users and were eager to participate in planning and designing such a public program. The events were successful and well-attended from the very first, and different concepts were explored based on public interest and input. Together, we considered the audience and the possible ways learning could be organized in a library setting. The activities were appropriate, interesting, informational, and entertaining, and allowed individuals of all ages to meet and talk personally with students and scientists. Some of our participants have shared that they are now interested in learning more about neuroscience, considering neuroscience as a possible career, or starting a new neuroscience-based hobby due to this program. We are very proud to partner with SFU." (Ms. Melanie Ramsey, Director of Youth and Children's Services at the Hollidaysburg Area Public Library).

Students testimonies

"Watching young kids enjoy the brain activities and learn about the brain was awesome. I thought teaching young children about the brain was a wonderful experience to be a part of." (Amber Rogers).

"The outreach event allowed me to break out of my comfort zone and help young kids get excited about learning. This event not only made me like my field of study more, but it allowed kids to learn more about something they probably did not know much about". (Cecilia Garza).

Table 1. Testimonies provided by the community, community partners representatives, and college students.

Conclusions:

Results indicates that the program improved the communication of neuroscientific data to the general community, involved faculty and students in community-engagement activities, and enriched the educational programs offered by public libraries, children museums, scout troops and school-based elementary/gifted programs. This interactive experience with the field of neuroscience was found to attract public interest and was well-attended. Testimonies provided by all involved partners suggest that it is perceived as a mutually-beneficial and unique educational opportunity, and that all who are involved are interested in its continuation. Future studies will aim to collect direct measures of community partner satisfaction, students' skill acquisition, and impact on public comprehension of neuroscientific data.

Selected Reference:

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