Building the Brain

Interactive exhibit for Brain Awareness Week and the North Carolina Science Festival

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Goals

1. To disseminate information and promote enthusiasm about neuroscience to residents of North Carolina, targeting youth
2. To provide structured and fun opportunities for students, faculty and staff at the UNC Bowles Center for Alcohol Studies to practice community engagement

Partnerships

North Carolina Museum of Life and Science provided hands-on lab space and support from museum staff

UNC Bowles Center for Alcohol Studies provided new, brain-centered interactive exhibit staffed by scientist volunteers

Dana Foundation provided Brain Awareness Week supplies (brochures, activity books, pencils, brain erasers, stickers)

National Institute of Alcoholism and Alcohol Abuse provided funding through P60 Alcohol Research Center at UNC and brochures on prevention of alcohol abuse

Volunteers

Recruited by emails to listservs

- Robinson's Science Outreach (prior volunteers)
- Bowles Center for Alcohol Studies
- UNC Neurobiology and Biological and Biomedical Sciences graduate students

Materials

- Rat and mouse brains from research labs (scheduled for euthanasia)
- Human brain loaned from the UNC School of Medicine Body Donation Program
- Sheep brains from Carolina Biological Supply http://www.carolina.com/
- Pig and dogshark brains from www.BiologyProducts.com; prenatal brains obtained from pig uterus with 1-3 embryos, fetal pig and pregnant dogfish shark
- Scratch-art craft paper and wooden styluses from www.Amazon.com
- Virtual microscope with Golgi and Nissl brain sections from Dr. Gary Duncan (UNC Psychiatry and Science Learning Resources) http://science-learning.com

Brain Awareness Week: "Protect the Brain!" interactive exhibit

Instructions to volunteers

Brain Awareness Week is just around the corner!

The UNC Bowles Center for Alcohol Studies is sponsoring a Brain Awareness Week interactive exhibit at the NC Museum of Life + Science in Durham http://www.ncmls.org/. We will be in the Health Lab on March 12 - 16 and will work in two shifts each day: shift 1 is 10:15 – 12:30, and shift 2 is 12:15 – 2:30. We are looking for 4-5 volunteers per shift; those who want to work a double shift can take a lunch break, come at 10:45, or leave at 2pm (depending on coverage).

We expect 100 - 150 visitors per day, consisting of preschool – adult ages. We will lead visitors through 3 stations focused on the theme "Building the Brain". The 4th station is unmanned.

Inside lab, station 1: Building the brain from babies to adults. Visitors start by examining shark, mouse and pig brains across development. We will have brains from various animal species at different stages of development – embryonic, fetal, newborn and adult. We'll also have adult and fetal human skull models to compare.

Inside lab, station 2: The human brain! Always a favorite, this station has a real human brain that visitors can see and touch (with gloves).

Inside lab, station 3: My favorite neuron (and glia, too). The third station focuses on the cells that make up the brain – neurons and glia. Prototypical pictures of brain cells with various morphologies will be available, and visitors can use them to draw their favorite on scratch art paper, and have a keepsake to take home.

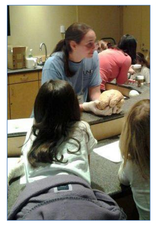
Outer ring, station 4: The magnified brain. Outside the immediate lab, we will have a computer program that visitors can use, perhaps while waiting to get into the lab. Using a virtual microscope developed by Dr. Gary Duncan (UNC Psychiatry and Science Learning Resources), visitors will see brain tissue up close. Check out the microscope here: http://science-learning.com/demo/.

Public health messages. The exhibit shows how the body builds the brain, from gross development to individual cells. Our public health message is to discuss things we can do to protect our brains and help them to grow. As we chat with kids and adults, we can reinforce healthy behaviors: wearing helmets, eating healthy food, protecting our brains from drugs and alcohol (or excessive alcohol in the case of adults). We will have some brochures, activity books, and stickers to give to kids.

Thanks for helping out – it will be fun! You are welcome to stay and explore the rest of the museum after your shift – there are many fascinating indoor and outdoor exhibits. For those of you with kids, they might enjoy coming along – ask me about it, as we will have some junior scientists there.

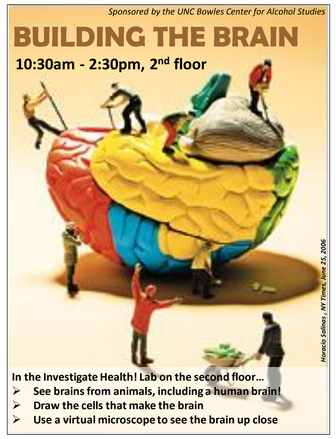
The numbers

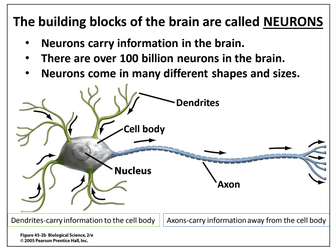
- 5 days (Tues – Sat)
- 4 hr/day, 2-hr shifts
- 24 volunteers total
- 409 child visitors, range 39 – 109/day
- 134 adult visitors, range 39 – 54/day

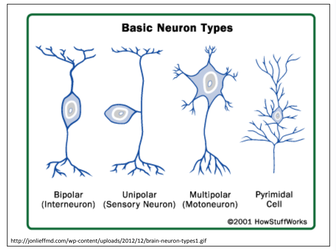


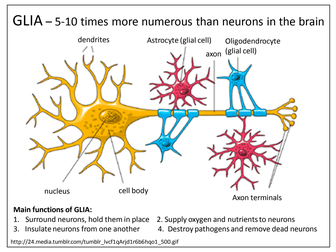
Adapting the exhibit

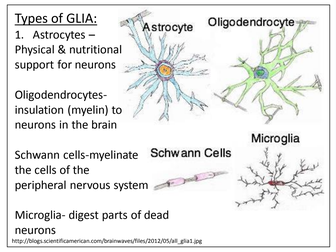
- UNC Science Expo: an outdoor street fair that is part of the NC Science Festival
- 7 volunteers
- One 6-ft table
  - Animal brains on one end (no human brain); brains were numbered and visitors guessed the brains' species
  - "Draw your favorite neuron" on the other end











Volunteer post-event survey

Volunteer Comments:

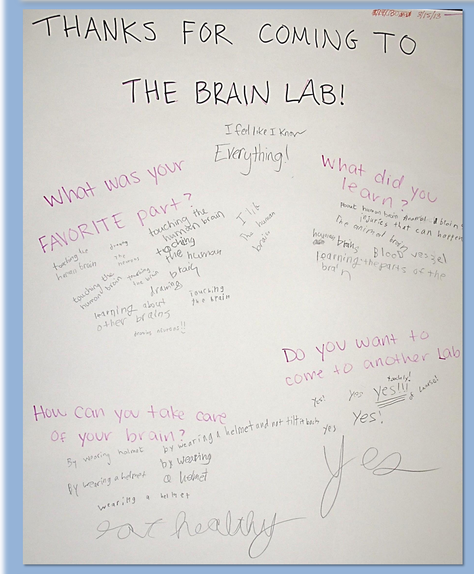
- "A great reminder of the importance of sharing your understanding of science with kids and parents; great practice for teaching."
- "This was a really fun event, thanks for organizing it. I really think it is a valuable resource for children to be exposed to at a young age. I thought it might have been fun for there to be a small educational pamphlet at the end of the exhibit containing some facts the kids learned during the exhibit because they go through quickly. It may be great for ages 6+ to look back over 'cool brain knowledge'."
- "Showing the human brain and talking about what it actually does – seeing their faces and excitement was truly fulfilling as a scientist. I was also surprised with all the cool questions I got!" "I loved talking to the kids and seeing their reactions to the exhibit. I get caught up in what I know, but the experience helped me to take a step back and realize what little knowledge they (and even their parents!) had to work with regarding the brain. I think they really enjoyed learning! I'd love to keep teaching members of the community about science-related topics."

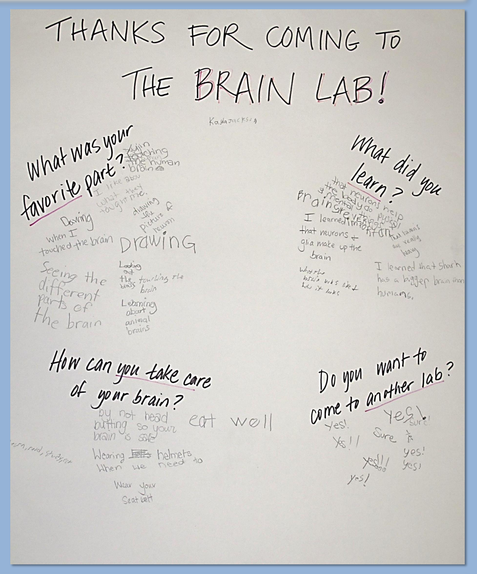
Post-event survey: 16/24 volunteers responded
Scale: 1 = strongly agree, 9 = strongly disagree; mean ± SD

I enjoyed volunteering in the Brain Awareness Week event.	1.5 ± 0.7
I think this experience was beneficial to the museum visitors who participated.	1.7 ± 1.0
This experience was beneficial to me in my role as a student/ researcher.	1.8 ± 0.9
The information provided to me prior to the event was beneficial and prepared me for the event.	2.1 ± 1.2
I feel that scientists have a responsibility to talk to members of the community about science.	1.3 ± 0.5
Participating in the Brain Awareness Week event will positively affect how likely I am to participate in community science activities.	1.6 ± 1.0

- "I had a lot more interesting conversation with parents than expected."
- "This was my first community science event- I was nervous about being able to communicate on a level that could be understood. I found this wasn't as hard as I expected and it was fun to answer questions, while being able to practice my skills at making what I do understandable and easy to talk about."

Visitor comments





Acknowledgments

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