

Summary of 2008 Educational Outreach Initiatives

David Self

UT Southwestern Medical Center

“Professional Development for Middle School Science Teachers”

Drug Abuse, Addiction, and the Adolescent Brain contains five, standards-based classroom lessons that focus on the science of how drugs change the function of the brain and why drugs may have different effects on the developing brains of adolescents. A four-part DVD is an integral part of the classroom lessons. The video includes interviews with top scientists in the area of drug abuse research, experts in drug abuse treatment, and recovering drug addicts. Animations in the video help explain difficult concepts about brain function and development. The five lessons in the curriculum supplement are:

1. Defining Drug Abuse and Addiction
2. Drug Addiction Is a Brain Disease
3. The Adolescent Brain and Drugs
4. Treating Drug Abuse and Addiction
5. What Should Others Know?

Although students are the primary focus for the materials, the unit also includes a facilitation guide for presenting the video to adult audiences of parents, school professionals, and other adults who play key roles in the lives of adolescents.

This presentation, done via workbook and CD, included interviews with scientists on current neuroscience and treatment, along with outstanding animation. The presentation also included interviews with former drug abusing students. The program emphasized neural development in adolescence and how drugs can alter the process in potentially irreversible ways. This program was presented in a manner that would hold the attention of middle school students. In addition there was a teleconference Q & A with middle school teachers. The final product is a valuable asset for middle school teachers and conveys an important and scientifically accurate message on the effects of drugs of abuse on the developing adolescent brain.

Outlined below is a letter from one of the teachers that participated in this project:

I am writing to thank you for your support. The funding granted by The American College of Neuropsychopharmacology on Drug Addiction, enables me to take full advantage of the “Drug Abuse, Addiction, and the Adolescent Brain” workshop conducted by Biological Science Curricula Study (BSCS).

Anne Westbrook, the BSCS coordinator and science educator, presents an educational unit about drug abuse and addiction that impresses me by the depth and care in its research and design. I am in my tenth year of teaching and I try to supplement my lessons with current scientific findings. As a result, I find it very satisfying to find that the program created by BSCS is one that focuses its activities and content on science research and speaks to students

with an age-appropriate, responsible tone. I appreciate the activities and video presentations in this unit because it instructs students to think like scientists by enabling them to collect evidence, compare experimental data and analyze information about drug abuse and addiction.

The “Drug Abuse, Addiction, and the Adolescent Brain” program will help our students learn about drug addiction through the 5E Instructional Model that promotes active, collaborative, and inquiry-based learning. My training in the workshop prepares me to present the activities and corresponding videos with fidelity to the intended curricular design. Had I received the curricular materials without the training, I would have been tempted to show only the videos, skipping the student-centered activities and robbing students of the rich, learning experience that comes with inquiry based science learning. I also feel that the videoconference with Dr. David Self, from the University of Texas Southwestern Medical Center, is an extremely valuable part of the presentation because it gives me the confidence to teach and refer to the comprehensive materials included with the unit with authority. In addition, I value the opportunity to collaborate with teachers from many different regions of the country and share teaching strategies that will make this program a success.

I will definitely use the curricular program presented at this workshop and share the rich resources in the classroom, school site learning teams, department meetings, and available professional development facilitation opportunities. This unit will be instrumental in educating our students about how drug addiction works and help them think critically to make healthy decisions in their lives. Thank you again for your support and sponsorship of this valuable program, for it strengthens my impact as an educator and improves the education and future of our students.

Sincerely,
Belinda Young
Science Teacher
Chatsworth, Ca
Los Angeles Unified School District
www.lawrencemiddleschool.com
(818) 678-7900

Ted Abel
University of Pennsylvania
“Kids Judge! Neuroscience Fair”

The Kids Judge! Neuroscience Fair was held on March 26 2008. Kid judges (in the form of 95 elementary school students!) came from the Penn Alexander School and the Charles R. Drew School in West Philadelphia. There were 52 undergraduates (50 from the School of Arts and Sciences and 2 from the School of Engineering and Applied Sciences) and 16 graduate students (15 Biomedical studies and 1 grad school of education), 2 employee volunteers and 10 students from the Rhoades Leadership School from North Philadelphia who put on the poster displays.

Huda Akil

University of Michigan

“Brains Rule”

The annual Brains Rule! event hosted four schools with a total of approximately 200 6th graders, and had over fifty volunteers ranging from graduate and undergraduate students to laboratory technicians and Ph.D.s from a variety of fields, such as Pharmacology, Neuroscience, Psychology and Cellular/Molecular Biology. There were a total of twenty demonstrations presented on topics ranging from genetics and neuroanatomy, to pharmacology and substance abuse, to helmet safety.

A website was created for the event to more easily promote to a wide audience (sitemaker.umich.edu/brainsrule). As in previous years, each participant received a t-shirt with the Brains Rule! logo and all the teachers were also given a packet of classroom lessons and suggestions for all the activities presented to the students. Becoming an official student organization at the University of Michigan also allowed this program to be advertised to everyone in the University community, and it will be a part of the annual activities fair held every fall. A large number of the demonstrations were photographed and videotaped. These recordings and photos will soon be posted on our website so that they can be viewed by a much broader audience.

The demonstrations were great and the interest the students showed in learning about the brain was exciting. One particular presentation discussed the importance of protecting your melon. The presenters asked how many kids wore helmets and the responses varied. One student replied "I don't now but I bet I will after this!" Let's hope he'll remember that the next time he gets on his bike. The Neuroscience graduate students take outreach programs to heart. The dedication and enthusiasm is wonderful to see on many levels.

Kerry Ressler and Charles Nemeroff

Emory University

“Public Outreach Through Community Partnerships: Bringing Neuroscience to Children and Adults”

This novel program was a combination of a 2-day “Brain Expo” open to the public and targeting Atlanta inner-city children and parents. The two-day event featured both a Neuroscience film, lecture and discussion series as well as 30 fun interactive learning stations. The events were enormously successful. At the Brain-Expo event, school-aged children were exposed to demonstrations and interactive activities related to neuroscience. The Neuroscience film provided the opportunity to the public to hear from guest speaker and ACNP member Michael Kuhar, a nationally famous expert in the mechanisms of drug addiction. Both of these events were very well attended, and fully met their stated goals of

reaching out to the community to enhance awareness and education of neuroscience and psychiatry.

This is one of the largest public education events of its kind in the country, and attracted more than 4,000 visitors. One goal of this event was to get kids excited about science at a younger age. The data from this event found that after attending this event, the students who participated found neuroscience more fun and more interesting and were more likely to see neuroscience as a potential career choice after participating in this Expo.

Terry Robinson

University of Michigan

“The Neurokids Program of the University of Michigan”

This program features local classroom presentations and promotion of neuroscience outreach through internet sharing of lesson resources and in-classroom video. Graduate students developed and presented a series of hands-on lessons covering a broad range of neuroscience topics including neuroanatomy, neurophysiology, cellular neuroscience and cognitive neuroscience. In addition to broadening awareness of neuroscience research, additional goals include promoting scientific research as a career and promoting the concept of intelligence and scholastic achievement as being adaptable characteristics; namely that one’s brain changes when something new is learned. The mission was threefold:

- 1) Plan, organize, and participate in neuroscience outreach activities.
- 2) Act as facilitators for those interested in developing their own educational programs based on neuroscience concepts.
- 3) Create a permanent resource for the teaching and dissemination of neuroscience concepts through the planning of curricula and development of novel educational strategies with an emphasis on fun, interactivity, and simplicity.

Since receiving funding, 15 classrooms were visited with the interactive presentations; approximately 350 students have been involved in a classroom presentation with a typical ratio of 1 graduate or undergraduate volunteer per 5 students. Both student and teacher feedback has been outstanding:

“When the Neurokids came, they showed us a brain and let us hold it! It was a once in a lifetime chance, so I felt special. I learned that explicit learning is like school learning or learning the alphabet. Implicit learning is like body learning or doing a sport.”

“I learned that my brain is very fragile and I should always wear a helmet when I ride my bike.”

“My favorite part was when the Neurokids put a helmet on two different melons and then dropped it on the ground.”

“I learned a lot about the brain, like its size. I thought the brain was bigger than the ones they showed us.”

“This was a fun, easy way to learn about the brain. Great job, Neurokids! That was the best presentation of my life.”

www.umich.edu/~nkids/Neurokids_Program/Prism_Goggles_You_Tube.html

Several organizers of this program were able to attend the Society for Neuroscience conference where they presented a poster about the organization during a workshop entitled “Annual Brain Awareness Campaign Event: Brain Awareness — The Next Generation”. This was a great opportunity to promote to a wide North American audience and share ideas on how to expand Brain Awareness Week to a yearlong outreach effort. They found that other attendees were particularly interested in how they were able to build and maintain a student organization that operated on an ongoing basis.