

2009 Educational Outreach Program Summary

Eydie London, UCLA

This program was aimed to inspire awareness and excitement about the field of neuroscience and higher education to underserved students who might otherwise not have had the opportunity, and increase opportunities for UCLA students to reach out to K-12 students to teach them about the relevance of neuroscience in their lives. These aims were addressed by increasing participation of inner-city Los Angeles unified school district (LAUSD) high schools and middle schools in University of California, Los Angeles (UCLA) Project Brainstorm events and Brain Awareness Week. These program events included: 1. Project Brainstorm and Neuroscience Classes and 2. Brain Awareness Week.

Eleven undergraduate students completed the Neuroscience outreach course, and took part in five separate school visits throughout the quarter in addition to volunteering for Brain Awareness Week 2009. Seven undergraduate students completed the course and took part in four separate school visits throughout the quarter in addition to volunteering for Brain Day 2009.

For each visit, the undergrads prepared a 5-min introduction to the brain and a 10-min presentation on a brain-related topic. Following the presentation, the students rotated through brain demos (including real animal and human brains) and performed some activity related to their topic.

Date (2009)	School & Class	Topic Presented	Activity
Feb 11	Santa Monica High School	Brain Plasticity	Pictionary using terms from the presentation such as 'synapse'
Feb 18	Roosevelt Elementary 4 th grade	Touch Perception	Touch sensation guessing game
Feb 20	University Elementary 3 rd grade	Brain Specialization	Make brain caps showing brain areas used in favorite activities
Feb 25	Culver City Middle School 7 th grade	Visual Perception	Visual Tricks Game to show how the brain can play tricks with visual perception in order to make sense of the world
Mar 4	Roosevelt Elementary School	Laterality	3-D puzzle game of right-brain, left-brain, corpus callosum
Mar 27	South Gate Middle School 8 th grade	Brain Dysfunction	Play Pictionary using terms from the presentation such as 'aphasia'
Mar 29 and Jun 3	Brentwood Science Magnet School, 2 separate 4 th grade classes	Auditory Perception	Blindfolded sound game using one ear, the other ear, and both ears
May 6	Webster Elementary School 3 rd grade	Brain Protection	Model brains with Play-Doh simulating the many protective layers

BRAIN AWARENESS WEEK (BAW) - MARCH 9-13, 2009

This community-to-campus outreach event brought disadvantaged middle- and high school students to the UCLA Brain Research Institute (BRI). The program provided underprivileged students the opportunity to participate in neuroscience educational activities, lab and campus tours, and career/mentoring workshops. Over 100 faculty and

student volunteers from numerous student-run groups participated. The full-day events included the Brain demonstrations, hands-on activities and presentations, lab tours, campus tours, and career/mentorship workshops. Arranging and visiting/touring by 500 students in one week's time requires extensive planning and a large support group from students at all levels, and faculty.

They brought a diverse group of underserved students from Title 1 LAUSD schools that otherwise would not have had this opportunity. In the morning session, they aimed to inspire excitement and educate our youth audience, specifically focusing on neuroscience hands-on activities. In the afternoon session, the campus tour had two benefits: 1) Introduce K-12 students to the UCLA campus, and 2) Expose disadvantaged students to the ethnic diversity of the UCLA community. In the career/mentoring panels students had the opportunity to meet a diverse graduate student panel of 4-5. Graduate students from multiple ethnic and socioeconomic backgrounds described their personal paths to graduate education, and the hardships and successes that they have experienced.

VOLUNTEERS

100 faculty and student volunteers from UCLA student groups Project Brainstorm, Neuroscience Undergraduate Society, SIGN (Student Interest group in Neurology), Interaxon, and STEM-PLEDGE (Science, Technology, Engineering, and Mathematics Providing Leadership & Enhancing Diversity in Graduate Education).

MEDIA COVERAGE & PUBLICITY

The event was covered on UCLA Today (online), The Daily Bruin (UCLA Newspaper), and ABC News (local). Websites, Flyers, and E-mail were used to publicize event.

EVALUATION

From the evaluation forms from the kids: The most interesting thing I learned today was.. "You could accomplish what you are really into." "Touching the brains because I can't touch my own." "That you can get paid to go to college." "Spinal cords are squishy." "The campus tour because now I'm thinking about coming to UCLA for college." From the student and faculty volunteers: "This gives us an opportunity to give facts about drugs of abuse, kids respond better this way than to lectures on the facts (alone). "These kids are really in need of connecting with diverse grad students like themselves who make it to college in science fields, and putting a face with a career. They're all looking for models."

Ira Glick, Stanford

Schizophrenia Education Day has been held each year since 2005, and has been successful and widely attended by both the Stanford and Palo communities, as well as the greater Bay Area community. The audience is both professionals and the general public concerned with schizophrenia. This one day program aims to increase community awareness and understanding of schizophrenia and other serious mental disorders, as well as to facilitate access to the evidence based treatment and research for both patients and families. The 2009 program will especially focus on reaching out to minority groups in clinical care and research. Recent studies have shown that minorities don't seek treatment early and that this population is underserved. At the conclusion of this public education day, the participants will:

- 1) Be better informed about the new findings on treatment of schizophrenia as they relate to the general public as well as minorities.
- 2) Have gained understanding about the current issues effecting minority understanding of schizophrenia and access to treatment services.
- 3) Be better informed about the current use of antipsychotic medications for children, adolescents, and adults with schizophrenia.
- 4) Be better informed about current clinical and family interventions available and how minority patients and families can improve their involvement.

Thomas Uhde, Medical University of South Carolina

The Student Psychiatry Interest Group (SPIG) at the Medical University of South Carolina (MUSC) was established in 1996 with a mission to foster MUSC students' knowledge of current psychiatric practice and standards of care, to enhance their desire to pursue a career in the ever-evolving field of psychiatry, and to engender a love of the discipline that will translate to the highest quality of care for those with mental disorders and their families.

The ACNP-supported Outreach Program was developed within SPIG to generate greater interest in the field of psychiatry as a career choice, especially in T2 psychiatry translational research. Acknowledging a troubling trend of growing teen substance abuse and suicide, the SPIG launched a teaching program at a local high school, aimed at disseminating information to high school students on substance abuse, depression, and suicide. The project involves the use of an interactive power point presentation to Health and Education classes, which provides information on alcohol and drug abuse, depression, and suicide risk and assessment. In order to organize the 1-hour slide presentation, faculty members work with the medical students and review the latest research literature on the relevant topics. As part of this process, the faculty mentor has an opportunity to discuss concepts such as "statistically versus "clinically" meaningful research data, research design, and, most importantly, what types of T1 or T2 translational research data would be most helpful in developing a treatment. Beyond stimulating an interest among the medical students in research, there has been an overwhelming positive response from the high schools. As a result of this ACNP-supported project, the SPIG organization has received numerous requests from educators throughout the region for similar engagements.

The response from the high school students was also extremely encouraging. After each presentation, there were many questions and concerns on the subject matter. An informal 10-item knowledge assessment of substance abuse, depression, and suicide risk was administered before and after the presentation to gauge how much the students learned and retained. The average score on the pre-test was 4 out of 10. The average post-test score was 8 out of 10. Of most importance, the group referred several students to community resources and treatment programs for assessment for depression, suicidal ideation, or addiction problems.

Experience suggests that medical students who participate in mentored research or community service programs are more likely to develop a path leading to a career as a physician-scientist.

Nicholas Goeders, Louisiana State University Health Sciences Center

LSU Health Sciences Center – Shreveport (LSUHSC-S) has an active Neuroscience community that provides educational opportunities throughout the year to promote neuroscience research within the scientific community. The Grey Matters programs expanded their focus outwards to the general public. The overall goal of the program is to inform and excite the lay public about the brain, brain chemistry, and drug action. Currently there are no public lay lecture or discussion presentations specifically addressing brain health in their region. Thus, these activities have reached an underserved population and filled an important gap in community education. They have partnered with an acclaimed science museum, Sci-Port: Louisiana's Science Center to enhance their education initiatives. Sci-Port is a 90,000 square foot science center on the Shreveport, Louisiana riverfront. A key feature of Grey Matters was pairing a bench scientist doing active research in the topic of interest with a non-bench scientist who provides a community perspective or practical tips. They have conducted four Grey Matters programs thus far. The success has exceeded their expectations. They received extensive publicity in the Shreveport media including newspaper and TV coverage.

- 1) The Experienced Brain. April 30, 2009. (Attendance 90+)
Dr. Mike Salvatore, Assistant Professor, Dept. of Pharmacology, Toxicology, and Neuroscience at LSUHSC-S, who studies how the brain changes with advancing age provided the scientific perspective. Ms. Jan Hinton, who served as the Activities Director at a local independent living facility provided strategies to keep the brain young.
- 2) The Hungry Brain. June 4, 2009 (Attendance 65)
Dr. Kathryn Hamilton, Dept. of Cell Biology and Anatomy, LSUHSC-S, who is an olfactory neuroscientist, described how we detect different odors and how the brain integrates the information. While she was presenting, Chef John Strand, cooked up an array of appetizing foods that the audience was able to detect.
- 3) The Addicted Brain. September 17, 2009 (Attendance 145)
Dr. Nicholas Goeders, Professor and Head, Dept. of Pharmacology, Toxicology, and Neuroscience, LSUHSC-S, described the neuroanatomical and neurochemical bases of addiction. He was joined by Dr. Kent Dean, from the Council on Alcoholism and Drug Abuse of NW Louisiana, who gave a dramatic account of the personal side of drug addiction.
- 4) The Stressed Brain. November 12, 2009 (Attendance 100+)
Dr. Lisa Schrott, Associate Professor, Dept. of Pharmacology, Toxicology, and Neuroscience, LSUHSC-S, described how stress affects our cognition, mood and susceptibility to diseases. Dr. Anita Kablinger, Professor, Dept. of Psychiatry, LSUHSC-S provided stress management techniques, including some hands-on procedures for the audience.

To be held on January 21, The Sleepy Brain. Presented by Dr Greg Butcher, of the Dept. of Neuroscience, Centenary College, Shreveport LA.

Robert Freedman, University of Colorado, Denver

Throughout the past year, Dr. Freedman and his staff have focused their efforts on two main activities: Outreach to the Quest K-8 school in Aurora, Colorado and bringing interested high school and senior citizens to campus for hands on laboratory demonstration experiences. For our outreach to Quest, they first give an introduction to the nervous system and then bring a human brain and spinal cord for the 6th graders to observe. The following day, they broke out into 6-8 groups for individual hands on discussion poster stations. This year they discussed hearing, taste and smell, eye development, comparative brain anatomy, stroke and brain disease, Alzheimer's disease, EEG and measuring brain activity. The second activity was to bring high school juniors/seniors (on the average 10 students and one teacher from 12 different high schools) and in a separate event ten senior citizens to campus to tour their laboratories and get an idea of what a working lab does. Both activities were run similarly. After an introduction, they broke out into six groups that participate in short laboratory run demos on taste and smell, zebrafish, amphibian, and fruit fly development.