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UNIVERSITY OF  
**Nebraska**  
Medical Center

# BUILDING BRIDGES

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NEUROSCIENCE DAY SPECIAL ISSUE 6



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## NEUROSCIENCE DAY

CONTRIBUTED BY DR. BARBARA HUG, UNIVERSITY OF ILLINOIS  
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In March, two NIH funded SEPA projects, the UNMC-SEPA program and Project NEURON at the University of Illinois partnered together to bring a day of Neuroscience activities to middle and high school students. This event was held twice over two days, first for schools near South Sioux City, Nebraska and the second day at Sinte Gleska University in Mission, South Dakota. Seven schools were able to participate, giving students a wonderful opportunity to learn about neuroscience and to interact with students, scientists, and educators from the University of Illinois, University of Nebraska as well as medical professionals from Sanford Health in South Dakota.

Over 200 students and nearly 20 teachers participated in the two Neuroscience Days. Throughout the day, students took part in several different engaging, hands-on activities. Students were excited to dissect sheep brains and cow eyes and to also stain real brain tissue. Through playing a computer game, students learned about traumatic brain injury by reading CT scans and conducting brain surgery. In another popular activity—the M&M activity, students learned about how our environment can affect our perception of color by sorting the candies under different colored lights. Conducting experiments with live planarians (small flatworms), students investigated how sugar and caffeine affect behavior. In another activity, students worked with a neuroscientist to see how much we can learn about the neuroscience of behavior from watching everyday honeybees!

### NEUROSCIENCE DAY ACTIVITY—STUDENTS PARTICIPATED FROM SEVEN DIFFERENT MIDDLE AND HIGH SCHOOLS — 2013

This year “Neuroscience Day” program (March 19-20, 2013) turned out to be a huge success. As seen in the picture below, more than 200 students participated from seven different schools in a 2-days program

**Dennis Lamenti**

**Astronomer**  
Navajo/Zuni  
Bloomington, IN

**WORDS OF WISDOM**  
Remind yourself from time to time why you started what you are doing. If you can't remember, then go back to where you can remember it. Be willing to change yourself. Look at the big picture; be willing to give back for, if you honestly look at your life, everything really has been given to you.

SEPA UNIVERSITY OF NEBRASKA MEDICAL CENTER



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Picture below—Students arriving at the Marina Inn Conference Center, South Sioux City. The schools that participated in Neuroscience Day programs were from : 1. Winnebago 2. Marty 3. Wagner 4. St. Augustine 5. Umonhon Nation 6. Walthill and 7. Todd County



Students Arriving at Marina Inn Conference Center



**NEUROSCIENCE DAY ACTIVITIES**— Students were exposed to many activities which were divided in **eight different work stations:** 1. Sheep brain dissection and exploration 2. Mirror tracing & beanbag toss . 3. The Golden Hour 4. Paint chip and. Candy sorting 5. Planarian experiments 6. Honey bee network and bee behavior scavenger hunt 7. Cow eye dissection 8. Biomedical research—brain histology



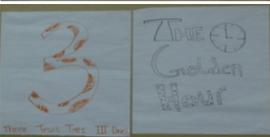
**STATION #1:** All the students were very excited to see and dissect sheep brains for the first time. Each student received a brain (picture below) to slice in different planes of orientation. They learned brain anatomy and compared skull models of other animals including humans



Students & teachers from Todd County High School



**STATION #2:** Beanbag toss and mirror tracing were fun activities for students. They began to see that the brain is capable of adjusting to new inputs and develop strategies for completing new and difficult tasks.



**STATION #3:** The Golden Hour gave students an opportunity to learn about traumatic brain injury through an interactive computer game. Students had a chance to work with a "CT technician" to evaluate the patient's brain scan, and a "neurosurgeon" to operate on the patient's brain. After careful evaluation, the player determined the next step for the patient.



**STATION #4:** In the candy sorting activity, students separated colored candies first under white light—easy to separate. However, under red, blue and green light students had a difficult time. Students learned that the environment can influence color perception.

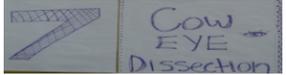


**STATION #5:** Students were directly involved in a series of experiments using various concentrations of caffeine and sugar on live planaria, an invertebrate flatworm. They learned anatomy and physiology of planaria. Experiments allowed them to investigate how certain substances affect planarians and related to how they can affect humans.





**STATION #6:** This activity involved basic biology and behavior of the honey bee. Students learned from neuroscientist how honey bees relate. They observed honey bee behavior and response to stimuli.



**STATION #7 :** Students dissected cow eyes and learned the different anatomical structure and function of the mammalian eye.



**STATION #8:** The objective of this activity was to understand what it means to be a biomedical research scientist. Students were involved in analyzing the histology of the mouse brain which had been sectioned and stained using different laboratory techniques. After staining, they were excited to visualize different structures and cells of the brain under microscope.



**PARTNER NEWS**

The Neuroscience day program was a great success. This is due to our strong partnership with Dr. Barbara Hug, Project Neuron and her team, and Drs. Pete Vitiello and Jill Weimer from Sanford Research. The large team did a wonderful job in setting and guiding all the students at each “Activity Station”. In picture ( L to R); Front Row—Lili, Meera, Michelle, Emma, Maurice, Barbara, Chandana; Middle Row—Rob, Emily, Lissette, Claudia—Back Row—Kim, Amish, Kenya, Guillermo, Brent, Jill, Pete, Andrew



Neuroscience Day is made possible by our fantastic volunteers and through the following organizations:

