



**PHYSIOLOGY “PhUn DAY” AT MARTY MIDDLE SCHOOL**— Students from Marty could not come on March 3rd at Marina Inn due to snow. Therefore, SEPA organized Physiology Day for them on April 13, 2015. More than 50 students, 6th, 7th and 8th graders, were participated in this program. They were very much excited to use stethoscopes to listen their own and a willing partner’s heart sounds. Also, measured blood pressure by using blood pressure cuff and stethoscope. They learned about the lung capacity, respiration, temperature sensing, stress management, muscle action and fatigue. As seen in the picture below, students were actively involved in Owl Pellet Dissection and trying to find out what type of animal owl ate and compare the animals with owl bone chart provided to them.



**UPCOMING EVENTS**

- 1. **SUMMER CAMP:** June 7—10, 2015 at the UNL Campus, Lincoln, Nebraska—The theme will be Chemistry and Chemical Engineering
- 2. **SEPA TEACHER WORKSHOP:** June 15—18, 2015—Aquaponics—Come to the Marina Inn Convention Center and join us in the world of Aquaponics
- 3. **SUBMISSION OF SUPPORT LETTERS FOR SEPA GRANT #3-DEADLINE MAY 15, 2015—PLEASE!!**

**ROLE MODEL POSTER:** The Role Model Poster Project features Native Americans in many health and science professions. Each poster includes the name, photograph, and tribal affiliation of the person featured. Additional information for teachers include: education, benefits, motivation, special job skills, and words of wisdom. These posters proved to be a great source of inspiration and motivation to the students and teachers. There are currently seven sets of posters and each set features five tribal members.



**ROSEBUD LAKOTA**

**Craig Lafferty**  
Radiology Technologist | Rosebud, SD

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**WORDS OF WISDOM:**

“Seek out what you want in life and what you want to do. Once you identify it, seek the initiative within you to complete the tasks for success.”

**EDUCATION:**

BSRT(R) - Bachelor of Science in Radiologic Technology, Presentation College & Craghton University

ARRT - Member of the American Registry of Radiologic Technologists

**FURTHER INFORMATION:**

Understanding X-Rays: A Plain English Approach by Mikol A. Rothenberg, MD  
American Society of Radiologic Technologists  
www.asrt.org

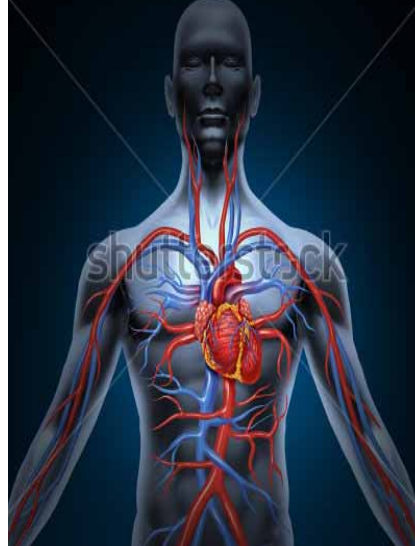
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**BUILDING BRIDGES**

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**PHYSIOLOGY DAY**

**DR. MAURICE GODFREY**  
UNMC PROFESSOR & SEPA PROGRAM DIRECTOR

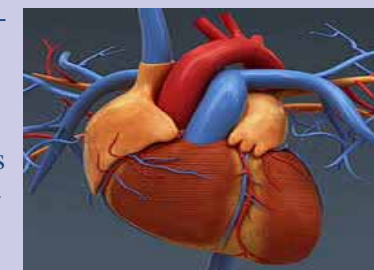
As you can see from the photographs in this issue, PhUn Day was a great success! Infinite thanks go out to all the UNMC graduate students and alumni who participated in the event. Alicia Schiller and Bryan Becker were instrumental in getting the activities organized. As our physiology experts they ensured that the lessons taught reflected the state of the art.

This was our second full day program at the Marina Inn. Given the success of PhUn Day and Neurosci-ence Day two years ago, we will strive to make this biennial event a part of the new SEPA grant.

Thanks to all the of the stormy predictions School who attended de-tice.

I have said this often the past ten years, nothing would happen without the dedication, organizational skills, and commitment to all your students by Liliana Bronner. PhUn Day’s success and seamless transition from empty room to science all around was due to all her hard work.

**SEPA III is now in the works. Submission is scheduled for mid-June. Please send your letters of support. The more the better! Letters from teachers, students, administrators, parents, former SEPA campers etc. etc. etc.**



**SEPA PHYSIOLOGY DAY ACITIVITIES 2015: STUDENTS PARTICIPATED FROM EIGHT DIFFERENT MIDDLE AND HIGH SCHOOLS**

This year Physiology Day was organized by SEPA at the Marina Inn Conference Center, South Siuox City on March 3rd, 2015. The exciting ‘PhUn Day’ turned out to be a huge success. As seen in the picture, more than 250 students participated from eight different schools. The schools that participated in Physiology Day program were:

- 1. Santee Community School
- 2. South Sioux City High School
- 3. St. Augustine Indian Mission School
- 4. Tiospa Zina Tribal School
- 5. Todd County High School
- 6. Umonhon Nation Public School
- 7. Walthill Public School
- 8. Winnebago Public School



This project is funded by the National Center for Research Resources ( NIH Grant#RR032178) and is currently supported by the Office of Research Infrastructure Programs (OD011071)



**PHYSIOLOGY DAY ACTIVITIES:** Students were exposed to numerous activities and experiments designed to give an overview of some physiological systems and the scientific method. Students were excited to explore the world of physiology. The activities were divided into ten different work stations: 1. Heart Rate Changes and Heart Sounds 2. Lung Capacity and Respiration 3. Digestion (Poop Lab) 4. Temperature Sensing/Muscles 5. Eye Dissection (High School) 6. Diving Reflex 7. Owl Pellet Dissection (Middle School) 8. Nerves and Reflexes 9. Special Senses/Dermatome Mapping 10. What Does a Scientist Look Like. As seen below, large numbers of volunteers and teachers helped to make this program exciting and successful.



**ACTIVITY 1 : HEART RATE CHANGES AND HEART SOUNDS** —Students were involved in measuring their own heart rate by feeling their pulse after different activities and compared the differences. They also used stethoscopes to listen to the heart sounds and measure blood pressure.



**ACTIVITIES 2 AND 3: LUNG CAPACITY/RESPIRATIONS AND DIGESTION**— In this activity, students were able to use balloon to calculate how much air is in the lungs for various subsets such as Tidal volume, Expiratory reserve, Vital capacity and using graph to express lung volume in cubic centimeters. Students were also involved in studying different animals' digestive system and their diet. They matched petri dishes containing fecal sample from different animals.



**ACTIVITIES 4, 5 and 6 : TEMPERATURE SENSING/MUSCLES, EYE DISSECTION AND DIVING REFLEX** — Students were excited to learn about thermoreceptors and how temperature and activity can change muscle function. They also performed dissection of a sheep eye and learned major function of the anatomical structure of the eye. In activity 6, students were involved in evaluating the fluctuation of heart rate when a mammal dives underwater.



**ACTIVITIES 7, 8, 9 AND 10: OWL PELLET DISSECTION, NERVES/REFLEXES, SPECIAL SENSES AND WHAT DOES A SCIENTIST LOOK LIKE**— Students learned about the owl's digestive system and compared owl pellet bone with rodent, shrew, and mole. They also did activities related to nerves and special senses such as touch, sight, smell, taste, hearing , vestibular and dermatome mapping. The last activity was designed to interact with participant scientists and ask questions about their jobs , what they do and how they became scientists.

