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NEW EDUCATION PROGRAM LETS STUDENTS SEE EYE TO EYE LIKE AN ANIMAL

PHILADELPHIA—Ever wonder what your back yard or your boss would look like if you were a bird or a snake?

A simple, but innovative new program called Seeing Eye-to-Eye offers insight into how animals see their world. “The visual systems of other animals provide them with a very different view of the world than humans have,” said Timshel Purdum, who developed the program for the Academy of Natural Sciences, the oldest natural history museum in the Americas.

The 90-minute program is designed for high school students who visit the Academy on class trips. In addition, younger children participating this summer in the Academy Explorers Camp will be introduced to the animal-vision concept.

Seeing Eye-to-Eye gives students access to infrared cameras, UV lights and other equipment that allows them to compare their vision with the vision of other animals. During the lesson, students investigate the properties of light and learn about the anatomy of vision systems. Through the use of technology and through encounters with live animals from the museum’s Live Animal Center, students can compare their visual adaptations to the adaptations of other animals. Students also learn about some innovative methods scientists use to explore light phenomena in animals.

Humans have trichromatic vision which allows people to distinguish light along the visible spectrum. “We teach students how the human brain interprets what is seen, particularly color, and about ultraviolet light and infrared, which is invisible to humans, but is an important source of information for some animals,” said Purdum, the Academy’s manager of school programs.

Birds possess a four-cone system which allows them to not only see light on the visible spectrum, but to detect light in the ultraviolet spectrum. Additionally, some lizards possess a “third” eye which can sense ultraviolet light and help regulate circadian rhythms.

Having the Academy’s live animals right there in the class helps bring the lesson to life and helps students apply what they see through the high-tech equipment to the animals themselves. “It helps them better understand how these lizards, snakes and birds use the electromagnetic spectrum that is invisible to the students themselves,” Purdum said.

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The students also will learn about animals that see infrared light. Certain species of snake, including boas, pythons and pit vipers, are able to perceive the infrared signature of their prey. This allows them to see their prey even in complete darkness. The students will use infrared thermometers to detect the heat trail that is invisible to humans, and they will use infrared cameras to investigate the heat signatures of some of the Academy's live animals.

To help develop this program, the Academy received a $2,800 grant for optical equipment from SPIE, the world's largest international not-for-profit society in the fields of optics, photonics and imaging.

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The Academy of Natural Sciences, founded in 1812, is the oldest natural science research institution and museum in the Americas and a world leader in biodiversity and environmental research. The mission of the Academy is the encouragement and cultivation of the sciences.

HOURS: Monday–Friday, 10 a.m.-4:30 p.m., Saturday–Sunday, 10 a.m.-5 p.m. ADMISSION: $12 adults; $10 children 3-12, seniors, college students, military personnel; from May 28–Sept. 6 military and up to 5 family members are free; free for members and children under 3. $2 fee for Butterflies!