GEORGE MASON UNIVERSITY
COLLEGE OF SCIENCE
BIOLOGY DEPARTMENT SEMINAR
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"The evolution of aquatic hearing in whales"

Ocean noise may be negatively affecting whales, but assessing this problem requires a scientific understanding of their auditory systems. Whales possess the most extreme mammalian ears on at least two levels. First, their auditory hardware is completely modified for aquatic function. Second, the two groups of whales are at the opposite and extreme limits of mammalian hearing. The toothed whales (including dolphins and porpoises) use ultrasonic sound to echolocate; they navigate and hunt using frequencies beyond the human hearing range. On the other hand, the filter-feeding baleen whales use low-frequency sounds, sometimes inaudible to the human ear, to sing and communicate across ocean basins. I study the evolution of these extreme auditory systems using a combination of approaches, including comparative anatomy, developmental biology, paleontology, chemistry, engineering, and museum science. Because whales are cultural icons, they also provide a ready-made vehicle for communicating science to the broader public, such as the incredible array of diversity and adaptation of life on Earth.

TUESDAY March 3, 2015
3:00-4:15 PM
Johnson Center Room Meeting Room F