

**Request for: Talk**

**Speaker: Kimberley Kissling**

**The bony labyrinth of the extinct Steller's sea cow, the largest known marine herbivore**

Kimberley Kissling<sup>1</sup>, Kévin Le Verger<sup>1</sup>, Lionel Hautier<sup>2</sup>, Loïc Costeur<sup>3</sup> & Gabriel Aguirre-Fernández<sup>1</sup>.

*1 Paleontological Institute and Museum, University of Zurich, Karl-Schmid-Strasse 4, 8006, Zurich, Switzerland.*

*2 Institut des Sciences de l'Evolution de Montpellier (ISEM), CNRS, IRD, EPHE, Université de Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, France*

*3 Naturhistorisches Museum Basel, Augustinergasse 2, Basel*

Sirenians (dugongs, manatees, and their extinct relatives) are obligate aquatic mammals with a rich fossil record extending back 56 million years. Among aquatic mammals, they are unique because of their strict herbivory. Sirenians have acute hearing and communicate with conspecifics via calls. The bones of the ear are well preserved throughout their history and offer the best chance of tracing the evolution of sirenian senses. Hearing in sirenians is poorly understood from a functional viewpoint and it is important to consider the effect of size on the shape. Here, we analysed morphological variation of bony labyrinth endocasts in a sample of thirteen extant and fossil sirenians. Three-dimensional models were rendered from computer-tomography scans for anatomical comparisons and shape analyses. The inner ear shape was predominantly uniform over time and species, despite their dramatic body size range. We focus on the Steller's sea cow, the largest sirenian (and with 9 m length, larger than an orca), and on what the inner ear can tell us about the environment and behaviour of these fascinating mammals.