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**Cover legend:** This video demonstrates the process for reconstructing objects from a set of images. It begins by traveling through a series of images obtain with serial block-face scanning electron microscopy from the developing mouse auditory brainstem. The view then zooms into a portion of the image plane and elements of a single cell in the medial nucleus of the trapezoid body are highlighted: The nucleus of the cell is colored red, the cell body gold and a large calyx-forming input (calyx of Held) is colored blue. The cell body is  $\sim$  20  $\mu$ m across. The image zooms further into the segmented cell to reveal subcellular organelles including endoplasmic reticulum and mitochondria then passes across the membrane of the cell into the calyx of Held that contacts the cell, revealing synaptic vesicles and thickened membrane areas indicative of synaptic contacts. The view moves out of the nerve terminal into a complex neuropil. showing the large volume of open space in the developing brain. A single axon is highlighted in blue, and the process of segmentation across image planes is illustrated by extracting the rendered object as successive image planes are removed. The resulting rendering of the calyx of Held is displayed, illustrating its many fine processes. After rotating the rendered calyx, the postsynaptic neuron is displayed and the entire synaptic complex is then rotated. The image on the issue cover

depicts the calyx of Held partially extracted from the image volume. For more information, see the article by Holcomb et al. (pages 12954 – 12969).



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