

THE  KAVLI PRIZE
BIOGRAPHIES
NEUROSCIENCE 2018

A. James Hudspeth, Robert Fettiplace, Christine Petit



Photo ©: Rockefeller University

A. James Hudspeth

Originally from Texas, Hudspeth went to Harvard University where he studied biochemical sciences, followed by a PhD in neurobiology (1973) and a medical degree (1974). Here he learned about the neuroscience of hearing and electron microscopy, both important for his future research. After a year at the Karolinska Institute, Stockholm, he moved to Harvard Medical School and then in 1982, to the California Institute of Technology, where he first showed that direct mechanical displacement of hair bundles led to an electrical response.

From 1983 to 1995 he did research at the University of California San Francisco and the University of Texas Southwestern Medical Centre before becoming Professor and Director of the FM Kirby Centre for Sensory Neuroscience at Rockefeller University. He continues to study the neural mechanisms of hearing including

through a recently designed microscope that can take a million measurements a second, with subnanometer resolution. He is also exploring the possibility of hair cell regeneration as treatment for hearing loss.

His awards include the W. Alden Spencer Award (1985), the Ralph W. Gerard Prize, Society for Neuroscience (2003) and the Guyot Prize, University of Groningen 2010 for 'important discovery in the field of otology'.



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Robert Fettiplace

Robert Fettiplace began his studies at Cambridge University, with a degree in medical sciences (1968) then a PhD in biophysics. In 1974 he joined Denis Baylor to work on turtle photoreceptors, initially at the University of Colorado, Denver, then Stanford University. He returned to Cambridge University in 1977, switching to the auditory system,

and published a remarkable series of papers on the sensitivity and frequency selectivity of hair cells in the turtle cochlea. He became a Fellow of the Royal Society in 1990, and in the same year, moved to the USA to become Professor of Neuroscience, University of Wisconsin (UW), Madison. Here, Fettiplace continued making advances in recording and measuring the motions of hair bundles and the properties of hair cell ion channels, including on the role of mammalian outer hair cells in sound signal amplification. He was Steenbock Professor of Neural & Behavioural Sciences, UW-Madison, from 1991-2011. In 2011 he became Fellow of the American Academy of Arts and Sciences.



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Christine Petit

Christine Petit studied medicine at Pierre et Marie Curie University, Paris, and basic biological sciences, genetics and biochemistry at Orsay University, and

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The Kavli Prize

www.kavliprize.org

The Kavli Foundation

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gained her Ph.D at Institut Pasteur. In 2002 she was appointed Professor in Genetics and Cellular Physiology at College de France. She is now head of the Genetics and Physiology of Hearing Laboratory at Institut Pasteur.

Her early work included research on human sex chromosome inversion, smell and vision. In 1994 she began publishing work on hereditary deafness, leading to new experimental models with which she has revealed the roles of various genes in sound processing. In 2018, she oversaw the opening of the new Hearing Institute, Paris, for interdisciplinary neuroscience research around hearing.

Honours include the Ernst Jung Prize for Medicine (2001), the Louis-Jeantet Prize for Medicine (2006), and foreign member of the National Academy of Sciences (USA, 2016).

