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The Evolution of Primate Color Vision

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Abstract

Human color vision represents only one of a number of alternative ways in which animals exploit spectral differences in their visual environments in support of behavioral choice. In recent years, comparative examinations of color vision in a wide variety of different species, coupled with even more broad-scale studies of the genes that specify photopigment proteins (opsins), have provided insights into the multiple pathways followed during the evolution of color vision. Among other things, these advances show how our own color capacity and that of our close primate relatives likely arose.

Biography

Gerald Jacobs has spent much of his career at the University of California, Santa Barbara, where he currently serves as Research Professor. Over the years, his research program has been focused on the study of the early-stage biological mechanisms that underpin mammalian color vision, particularly that of primates and rodents. The techniques employed in these studies have included behavioral evaluations, electrophysiology, structural analyses, and molecular genetics. Among others, the awards he has received for this work include the Rank Prize in Optoelectronics, the Proctor Medal of the Association for Research in Vision and Ophthalmology, the Verriest Medal of the International Color Vision Society, and the Tillyer Award of the Optical Society of America.