



# THROUGH THE EYES OF A MOUSE

*Some brain researchers are increasingly using mice to study visual processing, but others fear the move is short-sighted.*

BY MONYA BAKER

When Cris Niell said that he wanted to study how mice see, it did not go over well with more-senior neuroscientists. Mice are nocturnal and navigate largely using their noses and whiskers, so many researchers believed that the nursery rhyme — *Three Blind Mice* — was true enough to make many vision experiments pointless. The obvious alternative model was monkeys, which have large, forward-looking eyes and keen vision. What's more, scientists could rely on decades of established techniques using primates, and it is relatively straightforward to apply the results to the human visual system. "People were saying, 'studying vision in mice, that's crazy,'" Niell recalls.

But he was convinced that the rodents offered unique opportunities. Since the 1960s, researchers have used cats and monkeys to uncover important clues about how the brain turns information from the eyes into images recognized by the mind. But to investigate that process at the cellular level, researchers must be able to manipulate and monitor neurons precisely — difficult in cats and monkeys, much easier in mice. If mice and primates turned out to process visual stimuli similarly, Niell thought, that discovery could unleash a torrent of data about how information is extracted from stimuli — and even, more generally, about how the brain works.

He found a rare supporter in Michael Stryker at the University of California, San Francisco, who had already seen his share of crazy experiments in mouse vision. Stryker offered Niell a postdoctoral position in his lab, and the pair began setting up experiments in 2005.

ILLUSTRATION BY ADAM NICKEL