

# Escape from the mouse trap? New experimental models developing

January 23 2012, By Bruce Goldman

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Credit: xhouxuan12345678/flickr

(Medical Xpress) -- Mark Davis, PhD, director of Stanford's Institute for Immunity, Transplantation and Infection, has used mice to brilliant effect. They have helped him and a legion of fellow immunologists unravel many a mystery of how our immune systems manage to mount a response to the overwhelming diversity of foreign antigens that assault us throughout our lives.

But Davis has been pushing for at least a few years now to move immunology onward and upward to an exotic destination called "humans."

In a commentary published online Jan. 18 in *Science Translational Medicine*, Davis beseeched the field to start thinking out of the [mouse](#)

trap, as it were, writing: “In the last half century or so, much of the heavy lifting in immunology research has been done by laboratory animals, especially inbred mice.”

One indicator of the importance of this work, writes Davis, has been that most of the Nobel prizes in immunology for the last 30 years have been for research performed with mouse models. This dominance has led many to conclude that mice possess the only immune system worth studying.

But laboratory “mice, for all their charm and ease of use, have a number of serious flaws as a model system,” Davis writes. They’re inbred. They’re kept in germ-proofed shelters, much unlike life in the wild. The diseases they’re presumed to be modeling typically don’t precisely mirror the human version we care about. They’ve also got four legs.

Fortunately, today’s high-throughput technologies are making it possible to research the human condition, immunologically speaking, in a relatively noninvasive way. Davis and his colleagues have created a thriving operation at Stanford, the Human Immune Monitoring Center, whose genesis, rationale and scope were described in a Stanford Medicine article, “[The bodyguard.](#)”

Provided by Stanford University Medical Center

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