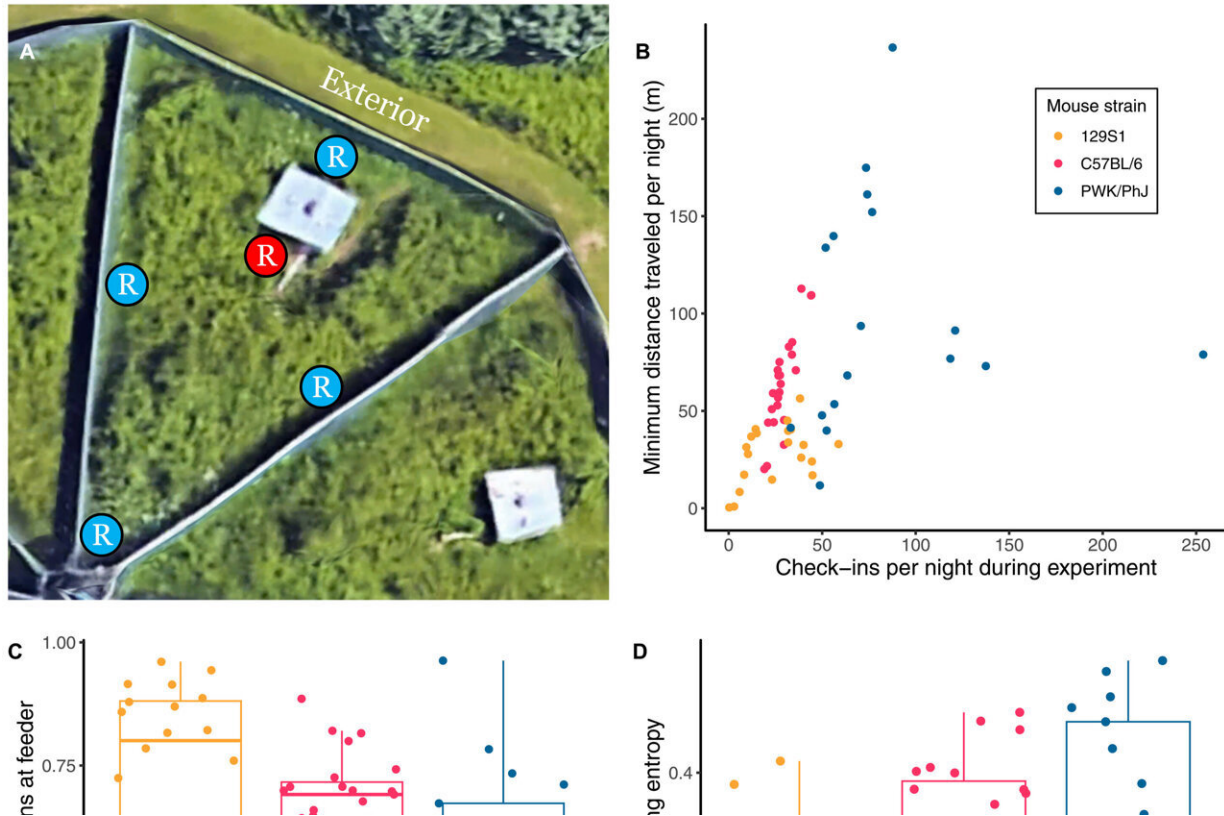


The social life of mouse immune systems

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Rewilded mouse behaviors varied within and among strains. (A) Aerial image via Google Earth of one of the three enclosures used during the experiment. "R" circles identify the locations of RFID stations within enclosure (red, chow feeder; blue, nonfeeder); the reader layout was the same for each enclosure, and the three enclosures have similar dimensions. (B) Check-ins and minimum distance traveled per night for each individual. The 12 mice that lost RFID tags or moved among enclosures are excluded from plots of individual behavior. (C) Proportion of check-ins taking place at the RFID reader attached to the feeding station within each enclosure, for each individual. (D) Mean nightly roaming entropy—evenness of RFID activity in time and space—of rewilded mice.

Credit: *Science Advances* (2023). DOI: 10.1126/sciadv.adh8310

Hanging out a lot with the same crowd can make immune systems of individual animals similar, even if the crowd is not related. That's according to a [recent paper](#) published in *Science Advances* that teased out connections between social behaviors and immune cell profiles of lab mice which were allowed to "rewild" and do as they pleased in controlled, predator-free outdoor enclosures.

SFI External Professor Andrea Graham (Princeton University) and co-authors carefully tracked the behaviors of mice from three inbred strains, including their socializing with other mice, to see how it correlated to their immune systems' T and B cell profiles.

They found that the more two mice hung out, the more similar their immune system profiles got. In fact, their immune profiles became even more similar than those of [siblings](#) or [mice](#) that had been similarly infected. The results highlight the immunological importance of shared spaces and activities, as well as social networks.

More information: Alexander E. Downie et al, Spatiotemporal-social association predicts immunological similarity in rewilded mice, *Science Advances* (2023). [DOI: 10.1126/sciadv.adh8310](https://doi.org/10.1126/sciadv.adh8310)

Provided by Santa Fe Institute

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