

DEPARTMENT OF BIOLOGY
UNIVERSITY of WASHINGTON

Jeff Riffell featured in UW News for new research on which colors attract mosquitoes

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(https://www.biology.washington.edu/sites/default/files/news/ColorMosquito_RiffellLab-750x500.jpg)

Jeff Riffell (<https://www.biology.washington.edu/people/profile/jeff-riffell>), UW Biology Professor, was featured in **UW News** (<https://www.washington.edu/news/2022/02/04/mosquitoes-red/>) for his new research on mosquitoes. In a paper published online this morning in *Nature Communications*, Riffell's team reports that a common mosquito species — after detecting a telltale gas that we exhale — flies toward specific colors, including red and orange. The mosquitoes ignore other colors, such as green, purple and blue. The researchers believe these findings help explain how mosquitoes find hosts, since human skin, regardless of overall pigmentation, emits a strong red-orange “signal” to their eyes. Knowing which colors attract hungry mosquitoes, and which ones do not, can help design better repellants, traps and other methods to keep mosquitoes at bay.

Co-lead authors on the paper are **Dr. Diego Alonso San Alberto**

(<https://www.biology.washington.edu/people/profile/diego-alonso-san-alberto>), a researcher and lecturer in the UW Department of Biology, and **Dr. Claire Rusch** (<https://www.biology.washington.edu/people/profile/claire-rusch>), a UW doctoral alum in biology.

Beating the bite of mosquitoes this spring and summer could hinge on your attire and your skin. New research led by scientists at the University of Washington indicates that a common mosquito species — after detecting a telltale gas that we exhale — flies toward specific colors, including red, orange, black and cyan. The mosquitoes ignore other colors, such as green, purple, blue and white. The researchers believe these findings help explain how mosquitoes find hosts, since human skin, regardless of overall pigmentation, emits a strong red-orange “signal” to their eyes.

“Mosquitoes appear to use odors to help them distinguish what is nearby, like a host to bite,” said Jeffrey Riffell, a UW professor of biology. “When they smell specific compounds, like CO₂ from our breath, that scent stimulates the eyes to scan for specific colors and other visual patterns, which are associated with a potential host, and head to them.”

The results, published Feb. 4 in *Nature Communications*, reveal how the mosquito sense of smell — known as olfaction — influences how the mosquito responds to visual cues. Knowing which colors attract hungry mosquitoes, and which ones do not, can help design better repellants, traps and other methods to keep mosquitoes at bay.

“One of the most common questions I’m asked is ‘What can I do to stop mosquitoes from biting me?’” said Riffell, who is senior author on the paper. “I used to say there are three major cues that attract mosquitoes: your breath, your sweat and

the temperature of your skin. In this study, we found a fourth cue: the color red, which can not only be found on your clothes, but is also found in everyone's skin. The shade of your skin doesn't matter, we are all giving off a strong red signature. Filtering out those attractive colors in our skin, or wearing clothes that avoid those colors, could be another way to prevent a mosquito biting."

Read the **full article in UW News** (<https://www.washington.edu/news/2022/02/04/mosquitoes-red/>). Bonus: related articles in **NBC News** (<https://www.nbcnews.com/science/science-news/seeing-red-mosquito-vision-tailored-skin-researchers-find-rcna14828>), **CBS News** (<https://www.cbsnews.com/news/mosquito-research-color-repellant/>), **CNet** (<https://www.cnet.com/news/you-might-be-able-to-hide-from-mosquitoes-by-avoiding-the-color-red/>), **Geekwire** (<https://www.geekwire.com/2022/build-a-better-mosquito-trap-buzzworthy-study-shows-how-pests-zero-in-on-red-color-in-human-skin/>), **New Atlas** (<https://newatlas.com/science/mosquito-color-vision/>), **Earth** (<https://www.earth.com/news/mosquitoes-are-attracted-to-specific-scents-and-colors/>), **KIRO7** (<https://www.kiro7.com/news/local/new-uw-research-zeroes-why-mosquitoes-are-so-attracted-human/WRICFKC4TVHCRCPZOYJBXVV5Y/>), **Fox 13** (<https://www.q13fox.com/news/certain-colors-attract-mosquitoes-study-shows?taid=6200761d95d73c000168a3e3>), and **KIRO Radio** (<https://muckrack.com/broadcast/savedclips/view/G07lieuo91>).

Fields of interest: **Behavior** (/research/fields-of-interest?field_research_areas_tid=148), **Ecology** (/research/fields-of-interest?field_research_areas_tid=7), **Neurobiology** (/research/fields-of-interest?field_research_areas_tid=156)

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