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Keep it clean

Humans can harbor upwards of 100 trillion microorganisms; some keep people healthy, while others can cause harm. Understanding "how" and "why" is complicated, so researchers are increasingly turning to gnotobiotic mice—that is, animals with known microbiomes, whether germ-free entirely or carefully catalogued—to decipher the role of the microbiome. Gnotobiotic mice have been around since the 1940s but establishing and maintaining the impeccably clean facilities and sterile procedures needed to prevent contamination remains a challenge, especially for smaller labs. Smriti Mallapaty explores gnotobiotics and the technology needed to keep mice clean in a new Technology Feature.
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Modeling malaria in pregnancy

Malaria infects over two hundred million people annually, according to the US Centers for Disease Control. Pregnant women and their unborn children are particularly vulnerable, but there is currently no vaccine to treat malaria during pregnancy and few animal models of malaria in pregnancy (MiP) available. Researchers at the National Institute of Allergy and Infectious Disease Laboratory of Malaria Immunology and Vaccinology review the rodent and nonhuman primate MiP models that do exist and discuss the modeling challenges that have yet to be resolved.
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Zebrafish on the brain

The human brain is an intricate, complex organ; as a result, the diseases of the central nervous system (CNS) often prove especially challenging to understand and, ultimately, treat. Zebrafish have been making a splash across numerous fields in biomedical research, and neuroscience is no exception. From addiction to autism and ADHD to OCD, researchers are establishing the zebrafish as a valuable animal model for a wide variety of CNS diseases. Allan Kalueff and colleagues think the tank is only half-full.
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