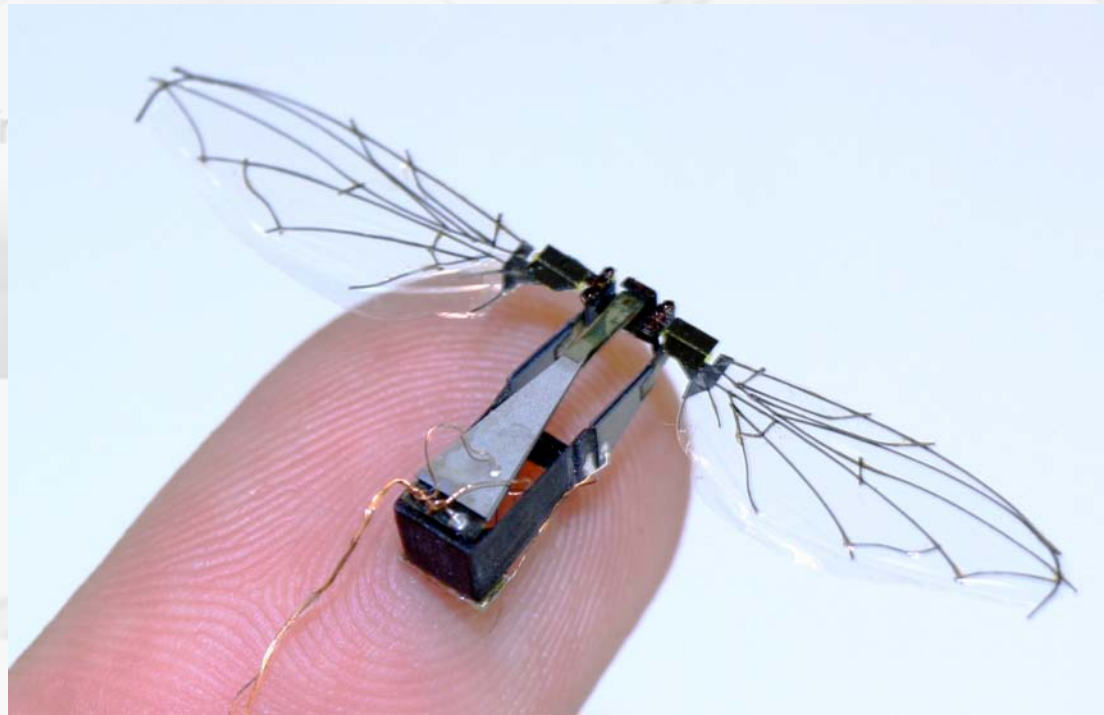


# Robotic Insects



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The Harvard Microrobotics Lab seeks to elucidate how to apply biological principles to the creation of robust, agile, inexpensive robotic insects. However, biological inspiration alone is not sufficient to create robots that mimic the agile locomotion of their arthropod analogs. This is particularly true as the characteristic size of the robot is decreased: to create high performance articulated robotic insects, we must explore novel manufacturing paradigms, new forms of actuation and sensing, and alternative control strategies for under-actuated, nonlinear, computationally-limited systems. This talk will highlight this research aimed at creating a flying robotic insect the size of a housefly.



Robert Wood is an Assistant Professor in Harvard's School of Engineering and Applied Sciences (SEAS). Prof. Wood completed his M.S. (2001) and Ph.D. (2004) degrees in the Dept. of Electrical Engineering and Computer Sciences at the U. C. Berkeley. He was a postdoctoral researcher in Berkeley's Biomimetic Milli-Systems Lab for one year before joining the faculty at Harvard. While at Berkeley, he invented a novel process for rapidly creating sub-millimeter to centimeter scale articulated, actuated, and rigid micromechanical structures. He has demonstrated both flying and ambulatory microrobot prototypes created using this paradigm. At Harvard, he founded the Harvard Microrobotics Lab which contains the world's leading facilities for rapid prototyping on the micron to centimeter scale.

His current research interests involve the creation of biologically-inspired mobile microrobots for aerial, terrestrial, and aquatic environments, minimal control of under-actuated nonholonomic nonlinear dynamical systems, and decentralized control of multi-agent systems. He is the winner of a 2007 DARPA Young Faculty Award, a 2008 NSF Career Award, a 2008 ONR Young Investigator Award, and is a member of the 2008 class of Technology Review's TR35.