NEWS

Lab studies how birds, flying fish can inspire design to improve systems

“Birds thrive in some environments where drones and small-scale uncrewed aerial vehicles would fail. Think of a really strong gust, or a very cluttered environment where birds can really thrive, but our drones and fixed-wing airplanes still struggle.”

“So we are trying to unlock some of these secrets and keys of physics that we can translate to our engineering.”

Aimy Wissa, Assistant Professor in the Mechanical Science and Engineering Department

This year, Wissa hopes to expand her research into more novel systems, uniting several of her research areas and understanding the trade-offs nature has resolved in design, prioritizing different systems and functions.

[Wissa] explained how humans are easily capable of building single-function systems, but often struggle to engineer multiple functions.

Wissa hopes that nature has the solution.

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Caption: How do you make a hinge? Look at a fruit fly. Princetons Bio-Inspired Adaptive Morphology (BAM) Laboratory, headed by Assistant Professor in the Mechanical Science and Engineering Department Aimy Wissa, is making ground in the emerging field of nature-inspired robotic design, from avian-influenced wingtips to energy-releasing actuators as seen in click beetles. Alongside seven graduate students, Wissa strives to gain understanding from natural feats of engineering in biology. Tap the link in our bio for the full story. Reporting from Andrew Bosworth. Post design by Amparo Sanchez. Photo courtesy of Lori M. Nichols.
Alt Text: In the top half: Image of four people crouching around a small model of a plane on Forrestal Campus runway; a thick orange line separates the top and bottom half; In the bottom half: a black background; orange text reads NEWS; below reads, in white text, Lab studies how birds, flying fish can inspire design to improve systems