

**THURSDAY
NOVEMBER 10, 2005**

**Scaife Hall Auditorium
Room 125**

**4:00 PM
Refreshments—3:30 PM**



MORLEY STONE


**AIR FORCE RESEARCH LABORATORY
DARPA/DSO**

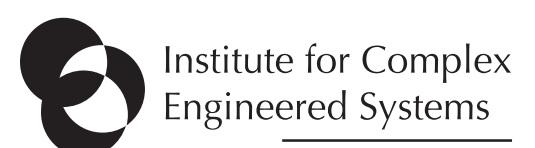
Morley O. Stone is Principal Research Biologist within the Air Force Research Laboratory (AFRL) and is currently detailed as a Program Manager with the Defense Sciences Office of the Defense Advanced Research Projects Agency (DARPA/DSO). Morley currently directs programs in bio-inspired robotics (Biodynotics), molecular electronics (Moletronics and MoleApps), and in bio-inspired/bio-derived sensors (Stealthy Sensors and BioSenSE).

Dr. Stone received his Ph.D. Degree in biochemistry from Carnegie Mellon University and has worked in the biotechnology/materials science area for 15 years. Within the area of biomimetics, he has strong interests in sensing, biological self-assembly, biological coloration, soft-matter patterning/lithography, biomineralization, and structural biological materials like silk and elastin. In addition to authoring numerous publications and presentations, he has received an Air Force-sponsored award for Scientific Achievement in 1999, won the Air Force Research Laboratory Commander's Cup in 2002 (given to the outstanding civilian among 6000+ employees), and was recognized with an Air Force-sponsored award for Leadership Excellence in 2003. His research team has been designated as a Star Team by the Air Force Office of Scientific Research and in 2005, he was elected as a Fellow of AFRL. He is a member of the American Chemical Society, the Materials Research Society and an adjunct faculty member at Ohio State University.

Elias Towe, ECE Seminar Host
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For more information:
<http://www.ece.cmu.edu/seminar>

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FRONTIERS AT THE BIOLOGY/MATERIALS SCIENCE INTERFACE

The harnessing of biological functionality has been pursued by engineers, chemists and physicists working with biologists in the nascent field of biomimetics. We have examined biological systems in a number of areas that will have profound impact upon materials science and engineering – areas such as directed self-assembly and constrained materials synthesis. Through this approach, a number of applied areas ranging from sensing to robotics will be affected.

During this seminar, I will cover work we have performed in the areas of bio-inorganic interactions, i.e., biomineralization, and work underway to harness the advantages of biological sensing. On the macro scale, I will cover work aimed at capturing the advantages of biological locomotion in new types of robotic systems under the Biodynotics program.