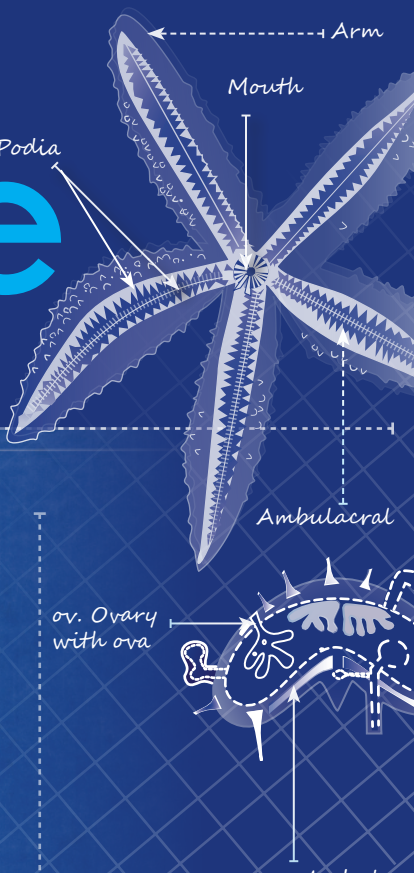
Design by nature



Saturday, June 11, 2011
1- 4 pm | Free | All Ages

Plants and animals always seem to construct the right tools for survival, and they do it with environmentally friendly mechanisms and materials.

- What can we learn from them to make our own tools better and more in tune with the environment?
- Join UC-Riverside Bourns College of Engineering Professor David Kisailus and his students as they share lessons learned from nature about the design of the next generation of engineering products.

Live specimens of the animals that inspire research will be on hand for your own observations!

Riverside Metropolitan Museum
Information: (951) 826-5273

UCR
Bourns College of Engineering
www.engr.ucr.edu/david

CITY OF RIVERSIDE
RIVERSIDE METROPOLITAN MUSEUM
3580 Mission Inn Ave., Riverside, CA 92501 | (951) 826-5273 | www.riversideca.gov/museum

Mantis Shrimp

Mantis shrimp are an ancient group of marine tropical and subtropical crustaceans dating back to more than 400 million years. To the casual observer, stomatopods resemble heavily armored caterpillars. Yet, these feisty sea creatures have a pair of hard fists or clubs that can punch through the hardest seashells. They can deliver high speed strikes faster than a 0.22 bullet without breaking its own fist because it is very tough. Studying these club-like weapons and other structures from the sea have revealed some of Nature's secrets, which can be used to produce nearly indestructible materials for body armor, aircraft, vehicles, and more.

Presentations

Teeth Harder Than Steel!
Brian Weden, Leslie Wood, Qianqian Wang, David Kisailus

Bullet Proof Armor Made from Sea Shells
Mohammed Alam, Christopher Salinas, David Kisailus

How "Boxing Shrimp" Can Help Protect Soldiers
Steven Herrera, Garrett Milliron, David Kisailus

Solar Cell Nanomaterials Made from Enzymes?
Chhay Sun, John Johnson, David Kisailus

Biologically-Inspired Production of Lithium Ion Batteries
Kim-Kim Nguyen, Jianxin Zhu, David Kisailus

Colorful Paints to Make Hydrogen Fuels
Elizabeth Horstman, Megan Langdon, Shermin Arab, David Kisailus

Using Sunscreens for the Next Generation of Solar Cells
Ana Bowlus, Wenting Hou, David Kisailus

Biologically-Inspired Production of Nanostructured Materials for Clean Water
Alexander Dudchenko, Nichola Kinsinger, David Kisailus

Biologically-Inspired Production of Nanostructured Materials for Solar Cells
Luke Turalitsch, Nichola Kinsinger, David Kisailus

Not Your Grandma's Jewelry: Amino Acids for Nanostructured Platinum in Fuel Cells
Christian Contreras, David Kisailus

Supported, in part by:
National Science Foundation
and the Air Force Office of
Scientific Research