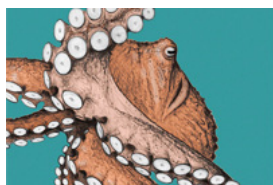




Blogs

[About the SA Blog Network](#)



Octopus Chronicles

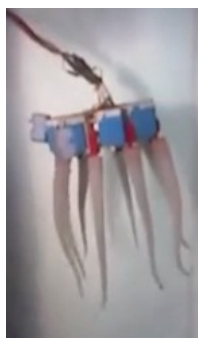
Adventures and Discoveries with the Planet's Smartest Cephalopods

[Octopus Chronicles Home](#)

Robot Octopus Swims with Lifelike Arms [Video]

By Katherine Harmon Courage | August 1, 2013 |

The views expressed are those of the author and are not necessarily those of Scientific American.

[Email](#) [Print](#)


Swimming robotic octopus with flexible arms; image courtesy of the Octopus Integrating Project

Most octopuses get around primarily by [crawling along the seafloor](#). And if they need to get somewhere in a hurry, they can employ their funnels to [jet away](#) like their pelagic cousins, squid. Researchers in Greece, however, have made a robot octopus that can propel itself through the water using only its eight arms.

Their prototype, announced earlier this summer, has mastered a handful of different swim strokes—including some even the octopus itself can't pull off.

The robot octopus, initially outfitted with stiff limbs, can move all of its arms in and out in unison, slowly propelling the body along in the water. It can also perform a

straight-armed technique in which each arm moves in and out independently. This pattern—referred to as “sculling”—though creepy and extra artificial looking, produces a fluid and steady motion that is very much *unlike* the discontinuous movement of the real octopus. Finally, when outfitted with flexible arms, the oct'bot elegantly executes a very cephalopodian swim. In this style of swimming, the robot undulates its arms out together and then pulling them back in—very much like a real octopus or squid.

The team behind these eight-armed aquabotics is from the Foundation for Research and Technology in Hellas. They presented [their work](#) in June at the IEEE International Conference on Robotics and Automation in Karlsruhe, Germany. They are working as part of the Octopus Integrating Project consortium, which aims to create an entirely soft-bodied octo-bot that mimics the locomotion, abilities and looks of an actual octopus. Soon, for example, the group hopes push forward and experiment with additional swimming styles, as well as models of the extendable web

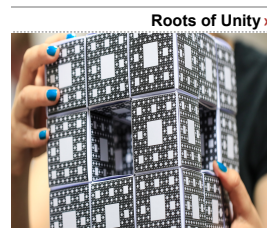
More from Scientific American

[MIND »](#)

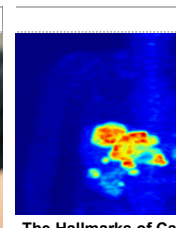
[Classics »](#)

[DIGITAL »](#)


Blog Network Highlights



Build Your Own Fractal with MegaMenger!



The Hallmarks of Cancer: Reprogramming Energy Metabolism

ADVERTISEMENT



Most Read Posts

 Beautiful Minds
[Is Kindness Physically Attractive?](#)

 Observations
[Spain Confirms First Ebola Transmission Outside of Africa](#)

 Extinction Countdown
[Sloth Bears Confirmed Extinct in Bangladesh](#)

Observations

Latest Posts ▼

that connects real octopuses' upper arms.

Such an unusual robot could be useful in search-and-rescue operations, deep-sea exploration and in furthering [the field of soft robotics](#). Waiting for a bot to arrive conveyed on arm power alone—whether sculling or swimming sidestroke—might be tedious, however. So the research group also plans to eventually outfit the bot with a jet-propulsion system similar to that of the octopus'. So, although it might not yet be a precisely faithful copy of the real octopus, it approaches the general idea—in broad strokes, at least.

Illustration courtesy of [Ivan Phillipsen](#)



About the Author: Katherine Harmon Courage is a freelance writer and contributing editor for *Scientific American*. Her book *Octopus! The Most Mysterious Creature In the Sea* is out now from Penguin/Current. Follow on Twitter [@KHCourage](#).

[More »](#)

The views expressed are those of the author and are not necessarily those of Scientific American.

Tags: [locomotion](#), [ocean](#), [octopus](#), [robot](#), [robotics](#)

Previous: Will the Robot Uprising Be Squishy?

More Octopus Chronicles

Next: Even Severed Octopus Arms Have Smart Moves

Clean Coal Era Begins

Observations

Clay Jenkins and Zachary Thompson Are Ebola Heroes

Follow Us: [FB](#) [TW](#) [GO](#) [RD](#) [HN](#)

See what we're tweeting about
Scientific American Contributors



ChristieNic Hi @michelelinn -- wanted to connect with you re: content marketing & novel tactics w/ white papers
o minute ago · reply · retweet · favorite

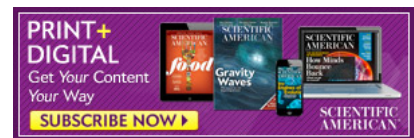


michaelshermer RT @BillGates: When markets fail, philanthropy can step in. Lessons from 10 yrs of Grand Challenges: <http://t.co/ysqrWHFxy> <http://t.co/npr...>
o minute ago · reply · retweet · favorite



ClaraMoskowitz I recently heard this fantastic story from @cosmicpinot about carrying his Nobel prize through airport security: <http://t.co/JEWBugab9z>
o minute ago · reply · retweet · favorite

[More »](#)



Latest Headlines on ScientificAmerican.com

Ebola Spread Shows Flaws in Protective Gear and Procedures

Make Your Own Hexaflexagons...and Snap Pictures of Them

What It's Like to Carry Your Nobel Prize Through Airport Security

Kids Who Exercise Don't Sweat Tests

Star-Forming Clouds May Spit Out Life's Building Blocks

Latest from *SciLogs*

Nobel Prize 2014: United by Struggle

Climate Change Communication: Taking the Temperature (Part 7) with Marshall Shepherd

Mario Vargas Llosa: Confessions of a Latin American Liberal

Could My Dogs Transmit Ebola?

Blood Moon Update — Too Much Cloud Cover

[More »](#)

ADVERTISEMENT

[Rights & Permissions](#)

Like 135

Tweet 8

+1 12

Share 4

+ reddit this!

Add a Comment

You must [sign in](#) or [register](#) as a ScientificAmerican.com member to submit a comment.

[Add Comment](#)