

May 15, 2013 | By Mario Aguilera

James Cameron to be Publicly Honored with Scripps Nierenberg Prize

Renowned explorer and filmmaker donates lander system that played key role in record-setting expedition and will be used by Scripps researchers as part of the next age of deep-sea exploration



James Cameron emerges from the DEEPSEA CHALLENGER. Photo by Mark Thiessen/National Geographic.

Ocean frontier explorer and world-renowned filmmaker James Cameron has been named by Scripps Institution of Oceanography at UC San Diego as the recipient of the 2013 Nierenberg Prize for Science in the Public Interest. Cameron will deliver a presentation on his record-setting *DEEPSEA CHALLENGE* expedition and exploration of the frontiers of the deep sea on Friday, May 31, on the UC San Diego campus. Although the event is sold out, more information is available at: nierenberg.eventbrite.com.

In addition, Scripps Institution of Oceanography's capacity to probe the mysteries and promise of the deep sea has been considerably boosted with a key undersea gift of technology from Cameron, who last year became the first person to complete a solo dive to the world's deepest point. Cameron has

donated an extreme-depth unmanned undersea exploration system known as a “lander” to Scripps for the institution’s future deep-sea exploration endeavors.

The Nierenberg Prize for Science in the Public Interest, awarded annually by Scripps, is named for William A. Nierenberg (1919-2000), a renowned national science leader who served Scripps Oceanography as director from 1965 to 1986. In addition to the lander gift to Scripps, Cameron will donate the \$25,000 Nierenberg Prize money to Scripps to kickstart operations of a new “Lander Lab” based at Scripps to oversee the lander system’s operations and research applications.



James Cameron has donated this deep-sea lander

Developed by long-time Scripps engineer Kevin Hardy for Cameron’s historic *DEEPSEA CHALLENGE* expedition, the lander includes an instrument frame, command/control spheres, empty camera spheres, buoyancy spheres, water and biological sampling systems, and deck support gear. The Cameron lander comes equipped as a complete deep-exploration system that can be configured in a full 14-foot, 1,000-pound mode—the workhorse design for Cameron’s historic *DEEPSEA CHALLENGE* expedition—or smaller versions that can be deployed from a variety of vessels.

“James Cameron’s landers worked in conjunction with his record-setting manned submarine by providing a stand-alone camera platform to film the submarine, to survey and scout locations prior to manned dives, and to test new technology before integration on the manned submarine,” said Hardy. “The lander also acted as a baited lure to attract fish and other animals, concentrating them for photography and behavioral studies.”

instrument to Scripps. Photo by Charlie Arneson.

Sampling devices can be tailored to the lander to address various branches of ocean science, including biology, chemistry, geology, and physics.

“Scripps Institution of Oceanography is extremely grateful to James Cameron for his generous lander gift, which not only holds historical value, but will prove to be a key resource for many significant deep-sea expeditions in the near future,” said Catherine Constable, interim director of Scripps. “The lander will help us unlock the mysteries of Earth’s least explored environment, which remains a true frontier of science.”

Doug Bartlett, a Scripps marine microbiologist and chief scientist of Cameron’s *DEEPSEA CHALLENGE* expedition, plans to put the lander system to work soon for Scripps science.

“The lander will be used with various payloads to collect seawater, sediments, animals in baited traps, and microbes following in-situ filtration and in-situ enrichment,” said Bartlett. “It may see operation in the (Pacific Ocean’s) Sirena Deep this June.”

On March 26, 2012, Cameron plunged 11 kilometers (6.8 miles) below the ocean surface in a one-man submarine to the Challenger Deep in the Pacific Ocean’s Mariana Trench, the first solo diver to reach such depths. Scripps has been collaborating with Cameron for nearly a decade, focusing on developing new ways to explore and study the deepest parts of the oceans. The *DEEPSEA CHALLENGE* was a joint scientific expedition by Cameron, a National Geographic explorer-in-residence; National Geographic; and Rolex to conduct deep-ocean research and exploration.

More on the Nierenberg Prize...

The Nierenberg Prize for Science in the Public Interest was created through a gift from the Nierenberg family to honor the memory of William A. Nierenberg. The prize, which includes a bronze medal and \$25,000, is awarded each year for outstanding contributions to science in the public interest. Nierenberg was a leading expert in several fields of underwater research and warfare, and was known for his work in low-energy nuclear physics. He was elected to the National Academy of Sciences in 1971 and was the recipient of numerous awards and honors for professional research and public service. Past Nierenberg Prize winners are: Daniel Pauly (2012), Ira Flatow (2010), Richard Dawkins (2009), James Hansen (2008), J. Craig Venter (2007), Gordon E. Moore, Ph.D. (2006), Sir David Attenborough, OM (Order of Merit) (2005), Dame Jane Goodall (2004), Jane Lubchenco, Ph.D. (2003), Walter Cronkite (2002), and E.O. Wilson, Ph.D. (2001).

More on Scripps and deep-sea discoveries...

With its decades-long history of deep-sea exploration, Scripps is recognized as a world leader in investigating the science of the deep ocean, from exploring the deep’s geological features, researching its exotic marine life inhabitants, to development of the requisite sensor and sampling technologies.

Scripps’s history in exploring the deepest regions of the ocean dates back to the 1950s and ’60s, when Scripps research geologist Robert Fisher meticulously mapped the Mariana Trench’s deepest points. He employed innovative sounding techniques to firmly establish Challenger Deep in the



Geographic Magazine.

Mariana Trench as the deepest point in the world's oceans. In 1952 Fisher identified Horizon Deep in the Tonga Trench as the second-deepest point in the oceans and the deepest spot in the Southern Hemisphere.

This work set the stage for the famous dive of Swiss oceanographer Jacques Piccard and U.S. Navy Lieutenant Don Walsh aboard the bathyscaphe *Trieste* in the first manned voyage to the bottom of Challenger Deep on January 23, 1960, and later Cameron's record-breaking solo dive in 2012.

Scripps engineers also pioneered designs in free vehicles, autonomous unmanned diving platforms not connected to a ship by rope or wire, for reaching far into the ocean depths to gather data and samples. Scientists John Isaacs and Frank Snodgrass developed fundamental techniques of free vehicle operations still used today.

"Our present designs utilize new materials, processes, and technologies—all the things you expect to have evolved," said Hardy. "But we owe a lot to these first Scripps trailblazers of undersea robotic systems. We are only just beginning the exploration of the ultra-deep ocean. James Cameron's gift will profoundly accelerate our understanding of the hadal (extremely deep) zone. It's a different Earth down there."

"The generous donation (by James Cameron) will enable the lander system to be brought back into service, helping us to examine the distribution, characteristics, and adaptations of extremophilic microbes in the trenches," said Bartlett. "I am hoping that we can bring back some of the scientists from the *DEEPSEA CHALLENGE* Expedition for the next deployments and recoveries of this lander, and that we can start off where this expedition ended."

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