

PRESS RELEASE

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"Most rewarding experience": UOG professor Chief Scientist on National Geographic expedition

The waters around Guam bore witness to a significant coral bleaching event several years ago. Rising sea temperatures during the last El Niño stressed corals to the point of expelling their symbiotic algae, draining them of color and leaving behind whitened skeletal frames along the ocean shallows.

Corals around Guam were not the only victims of this climate stressor. Reefs in the Federated States of Micronesia were not spared from the bleaching event, but the story differs for reefs in the FSM's remote atolls. There, researchers are finding that more corals managed to survive the event compared to those around the main islands in the FSM.

Scientists anticipated that, with more fish around to help promote growth and less pollution affecting them, reefs in these atolls would have a greater chance for recovery. But scientists had "no clue" corals there would also be more resistant to bleaching, according to Dr. Peter Houk, Professor of coral reef and fisheries ecology at the University of Guam's Marine Laboratory.

"In fact, based on what we know about global scientific literature, it wasn't clear that they would be," Dr. Houk said.

These observations were made during an expedition into the FSM atolls - a major collaboration between UOG, FSM national and state governments, National Geographic

Pristine Seas, Micronesia Conservation Trust, Scripps Institution of Oceanography, and Waitt Institute.

Unique UOG tie with National Geographic

The collaboration marks the first relationship of its kind between UOG and the National Geographic Society, according to Dr. Houk, who served as the Chief Scientist for the expedition. Click here for a National Geographic Society video of the expedition <https://www.instagram.com/reel/C3TsoCOvgYZ/?igsh=NDZ3M256enM3enJk>

He credited the opportunity to the development of a larger scientific network fostered through the University.

Since coming to UOG in 2013, Dr. Houk has received small-level grants to work with Micronesia on coral reefs and fisheries, which has been supporting his students. The students are doing great work in places like Yap, Kosrae and Saipan, each in different systems with a focus on management, Houk said.

"People started realizing, 'Hey, this is a pretty powerful network.' And we had a chance to help engage the Federated States of Micronesia."

A network involving National Geographic is a big win, Dr. Houk said.

"The amount of marine resources in FSM waters is insane ... and having UOG in and working with that and getting students in the mix on that is awesome," he said. In addition to coral reefs, scientists are assessing deeper and open waters around the FSM atolls to get a comprehensive look at their resources.

The expedition took almost two months and ended in late November 2023. Starting from Kosrae, the expedition covered more than 2,000 miles and visited 10 to 12 atolls before reaching the end of its journey in Yap.

With climate change well underway, one of the main goals for the expedition is to understand coral resistance to bleaching, their recovery or lack thereof, and the impact of human presence.

Those two words – "resistance" and "recovery" – combine to form "resilience," or how prepared organisms are to "fight the future," Houk said.

Another major goal is to inform resource management guidance for the outer atoll communities and management policies for FSM national government. The project is also meant to enhance the capacity of local scientists, with 12 scientists from the FSM states participating in the expedition.

Opportunities at UOG for Western Pacific region students

It was also an opportunity to tell regional students about opportunities at UOG. According to Dr. Houk, the expedition team reached out to marine science students in community colleges at each stop of their journey.

"It's one thing to hear about UOG's program, it's another thing to hear about UOG's program while you're standing on a National Geographic boat next to a submarine looking at new species of coral found in (their) waters," Houk said.

Some of his graduate students on the expedition were "getting the most rewarding experience of their lives," he added, "It's amazing."

Houk has begun incorporating information from the expedition into his lessons.

"And this will all continue," he added.

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Photo captions:

2024-expedition

From top, Alik William, Trenton Skilling, Bersin Elias, and Bond Segal, core members of the Micronesia Coral Reef Monitoring team, dive in an area off Pingelap Atoll in the Federated States of Micronesia as part of a research expedition involving the University of Guam, National Geographic Pristine Seas, and FSM government.

2024-expedition2

Lettuce coral in a reef off of Pingelap Atoll in Pohnpei. The coral survived despite the heat stress during the last El Niño several years ago. Scientists are interested to see if the coral will survive another heat stress expected next year.

2024-peter-houk

Dr. Peter Houk

Photos courtesy of Dr. Peter Houk for the University of Guam

(Note: Please reach out to Dr. Houk houkp@triton.uog.edu for use of these photos not related to this press release.)