

3-D surprise: Girl missing part of arm gifted a prosthetic

June 4 2015, by Tamara Lush



Brooke Bowersox, right, a Clearwater Marine Aquarium trainer, and 10-year-old Annika Emmert of Riverside County, California, work with the prosthetic tail of Winter the Dolphin. Emmert, a 10-year-old who was born without her right arm,

received a 3D-printed bionic limb from a student-led non-profit at the University of Central Florida. Winter lost her tail when she was caught in a crab trap and now lives at the aquarium. (AP Photo/Tamara Lush)

When 10-year-old Annika Emmert patted Winter the dolphin's smooth back at the Clearwater Marine Aquarium on Thursday, she thought that was the best part of her morning.

She was wrong.

Cozi Zuehlsdorff, the actress who starred with Winter in the "Dolphin Tale" movies, set a cooler next to Annika. The girl opened it, thinking it was dolphin food.

"I was really surprised," said Annika, whose eyes welled with tears when she saw what was inside. "I was like, that doesn't look like fish."

Instead, Annika—who was born without part of her right arm—was shocked to see a custom-made [prosthetic limb](#), decorated with bright flowers. A bionic limb, if you will, that's controlled by Annika's muscles and electrodes.

The most remarkable part: The limb was created using 3-D printing technology.

Limbitless Solutions, an Orlando-based nonprofit run and staffed by University of Central Florida engineering students, made the limb. The group's mission is to "print" prosthetic limbs for children and to encourage other companies and nonprofits to use the technology by providing the plans and software.

Printing Annika's arm took about 40 hours. Each piece is modular: When Annika grows, she'll get upgrades in the form of larger parts.

"That's the beauty of 3-D printing. You can just print a new, longer finger, a new, longer forearm, and we can keep the electronics the same," said Albert Manero, Limbitless' executive director.

The arm costs about \$350 in materials, but Limbitless gives every [limb](#) away for free.



Anni Emmert, left, a 10-year-old who was born without her right arm, stands with her parents, Mark and Karon Emmert, at the Clearwater Marine Aquarium in Clearwater, Fla., Thursday, June 4, 2015. Anni received a 3D-printed bionic limb from a student-led non-profit at the University of Central Florida. Researchers surprised her with her arm at the aquarium on Thursday, where Winter the Dolphin, who lost her tail in a crab trap, also received a new prosthetic tail from the same non-profit. Winter lost her tail when she was caught in a crab trap and now lives at the aquarium. (AP Photo/Tamara Lush)

Behind Thursday's event is Winter's real-life tale of overcoming adversity. In 2005, she was found as a baby tangled in a crab trap. Circulation had been cut off to her tail. She was brought to the aquarium but lost the tail. Winter was eventually fitted with a prosthetic tail—though not a 3-D-printed one.

Manero said Anni loves "Dolphin Tale," and it made sense for everyone to meet on the day she received her new arm. The Emmert family flew to Florida from their Southern California home.

"We wanted to do something really special for Anni," Manero said.

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