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'Nemo' no fish story thanks to UCI adviser

By **STEPHEN LYNCH**

The Orange County Register

Put aside the fact that sharks don't speak English. That they rarely, if ever, join 12-step programs to stop eating fish. The only problem Adam Summers had with Anchor, the hammerhead shark of the hit movie "Finding Nemo," was the nose.

"Hammerheads have eyes on the ends of their head. They have their nostrils out there, too," he says. "But they put the nose right," he points to the center of his face, "here."

Summers was annoyed - for about 30 seconds. "It's a movie," he says, laughing.

Being a technical adviser on a cartoon requires certain compromises. That's to be expected. What surprised Summers, an assistant professor of ecology and evolutionary biology at the University of California, Irvine, was the corners "Finding Nemo" didn't cut.

For three years, Summers was Pixar Studios' ichthyologist, introducing its artists to the mysteries of the sea. While animation isn't known for its verisimilitude - and Wile E. Coyote thanks his anvil-flattened head for *that* - the "Finding Nemo" crew was eager to get as much right as it could.

"The fish behave the way fish really behave," Summers says. "There's lots of schooling, lots of mindless swimming around. They put in a lot of the random weirdness of fish."

So while the hammerhead's nose is out of joint and the coral is a little crowded, the pectoral fins of a clownfish (*amphiprion ocellaris*) are in the right place, and the waves move to sophisticated mathematical formulas. This realism may not be why "Nemo" was the No. 1 movie last weekend, raking in \$70 million, but it certainly helped, Summers says.

"I think those things give it a foundation, so that subconsciously, or consciously, it's easier to relate to," he says. "It helps the filmmakers, and it helps the film."

Finding his ichthy

Sitting in his offices at UCI, Summers is the very model of a Discovery Channel nature-show host. He's dressed casually in a work shirt and jeans, his feet up on his desk. He keeps shark jaws on the bookshelf, a "periodic table of fish" pinned to his door. Pixar prizes its advisers as much for their charisma as their knowledge, and it's easy to see why they picked Summers. He tells fish stories with the same enthusiasm as a Minnesotan after a day on the lake.

Summers started his academic career studying math and engineering, "but I wasn't smart enough to be a mathematician or interested enough to be an engineer. I always loved critters, though."

After two years working as a diving instructor on the Great Barrier Reef, Summers switched to biology, first concentrating on snakes and lizards, then fish. Today, his research focuses on the cartilaginous skeletons of creatures such as sharks and rays.



FISHING FOR FACTS: Adam Summers, UCI assistant professor and resident fish expert, served as an adviser on "Finding Nemo."

ANDY TEMPLETON, FOR THE REGISTER

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It was "pure luck" that, when Summers was a fellow at the University of California, Berkeley, his landlady was an instructor at Pixar's in-house university. In the fall of 2000, he was invited to speak to a group of animators, "and basically I gave what would be the first two lectures in a graduate-level course in ichthyology."

Pixar was impressed.

"He opened up our eyes to the whole world underwater," says Andrew Stanton, the writer and director of "Nemo." "He had tons of visual aids, graphics, models. It was color-by-numbers for us."

Summers was impressed, too, but it wasn't until later that he was *really* floored. "I had never seen an animated movie," he says. "I didn't realize, but there were, like, four Oscar winners in that room."

Eight days later, the Pixar crew showed him the first shots of Marlin, the clown fish who would play the lead in "Finding Nemo." It was a 15-second clip of the fish asking Disney for money.

"It looked really good," Summers says. "I knew they were going to do a great job."

Fish heads, fish heads

Soon after, Summers was hired as an adviser. He arranged lectures on everything from the behavior of light in water to the movement of waves. He led a field trip to the California Academy of Sciences, where "every character was there in jars." One artist climbed around inside a dead whale to see its baleen. "They were willing to do anything," Summers says.

The biggest issue Summers dealt with was balancing anthropomorphism with anatomy, like the day the animators called and asked, "Where are the eyebrows on fish?"

"Well, fish don't have eyebrows," Summers says. "But eyebrows are good for facial expressions, so we started to look for fish that had ocular ridges."

Summers chuckles. "The eyebrows shouldn't move," he says. "But at least they're in the right spot."

Most of the time, the animators were able to accommodate Summers' science. But on a few occasions - such as a shark's, uh, endowment - he lost the debate.

"I was disappointed that you had these three male sharks and you couldn't tell they were boys," Summers says. The artists added "claspers" for one scene and showed it to him. "They looked terrible!" he says, shaking his head. "They were right."

Stanton says that on "Finding Nemo" and "A Bug's Life," the animators specifically tried to keep things authentic. "We listen to everything they have to tell us, to every rule, so we know when we're breaking them," he says. "The only rules we break are in service to the story."

For every inaccuracy, however, there are any number of ichthyology in-jokes, Summers says. In one scene, Marlin meets an anglerfish, a surrealist monster of the deep. Female anglers are as big as 8 inches long, Summers says, but males are only 1 inch or less. To mate, the male attaches itself to the female as a "testicular parasite."

"And the female in the film has one!" Summers says, smiling.

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