

# Loral O'Hara

RESEARCH ENGINEER



Tom Kleindinst/WHOI

“ Here I was working with Tony Delane, a welder, to install pressure housing racks in the aft bay. The aft bay takes up roughly the aft third of the vehicle. I designed the racks. They will hold most of *Alvin's* pressure housings, the titanium bottles that house the electronics for propulsion and for controlling the vehicle, cameras and lighting, and data handling.

On the old *Alvin*, many of the power and data components were inside the personnel sphere. We freed up a lot of space inside the sphere by moving those components into pressure housings outside the sphere, but we also had to find a place to put all those housings. We had this big space in the aft bay, but there wasn't a lot of structure to mount things back there.

Instead of adding a lot of heavy structure to support the housings, we made the housings become part of the structure. This is the starboard rack. There's another one just like it on the port side. The bottles will fit in the large holes in the racks so they span across the vehicle from one rack to the other, so they are actually part of the structure.

A lot of what drove this design was that at sea, the crew has to be able to pull out the contents of the housings to service them. So you had to be able to access the ends of the bottles.

The racks are a solid, high-strength plastic called polyethylene. If we made them of titanium, we'd have to add an equivalent amount of foam or some other buoyancy to float it. This plastic floats itself. All of this was fabricated here. The plastic came in as a big sheet, and then Tim Kling cut out all the parts with the water jet.

I came to WHOI in 2009. I was only planning to stay here for a little while, because I had another job lined up. But then I started working on the *Alvin* project and got more involved in that. When it came time to leave, I decided to stay and finish the project. Three years later... [laughs].

I'd love to go down in *Alvin*. Before I came here, I was studying rocket propulsion. The motivation for me is the same. I love exploration, particularly when it involves people. What I want to do with my life is build vehicles that let people work and live in places that are either inaccessible or accessible to only a few. ▲