Vol. 1, No. 6

**by Kirsten Rodenhizer**

What do the ocean — a watery world rich with life — and the cold, lifeless reaches of outer space have in common?

Both are airless, low-gravity environments into which it is dangerous and expensive to send humans. This similarity underlies the work done by mechanical engineering professors Inna Sharf and Meyer Nahon at UVic's Space and Subsea Robotics Lab.

Sharf administers space robotics, Nahon is in charge of undersea robotics, and both do some work in aeronautics. The two, a married couple, came to UVic in 1991.

The subsea studies include research and development of remotely operated underwater vehicles (ROVs) — which perform such underwater tasks as offshore oil platform inspection, cable repair and scientific exploration — and autonomous underwater vehicles (AUVs), which have no cables connecting them to the operator.

Sharf and her students recently completed a project for MDR (previously known as SPAR Aerospace), the company that built the space shuttle Canadarm. Systems like the Canadarm are designed for use in zero-gravity conditions and, on earth, they can't even support their own weight, much less move. Because of this, they can onm Á 5 ١ v ays Nahon.

Another of Nahon's projects involves ROV slack cables, which transmit power and information to the vehicles when they are underwater. These cables often get caught or tangled.

"We are trying to simulate what is happening with the cable so operators can keep track of what it is doing and predict what it is going to do while it is trailing behind the ROV," says Nahon.

Nahon and his students test their simulations against real-world conditions using a mini slack-cable ROV in UVic's McKinnon pool. This allows them to see whether their simulations represent the motion of the cable accurately.

Both Nahon and Sharf receive a large portion of their funding from the Natural Sciences and Engineering Research Council of Canada (NSERC). This funding has helped pay for general operations, equipment and the hiring of students.