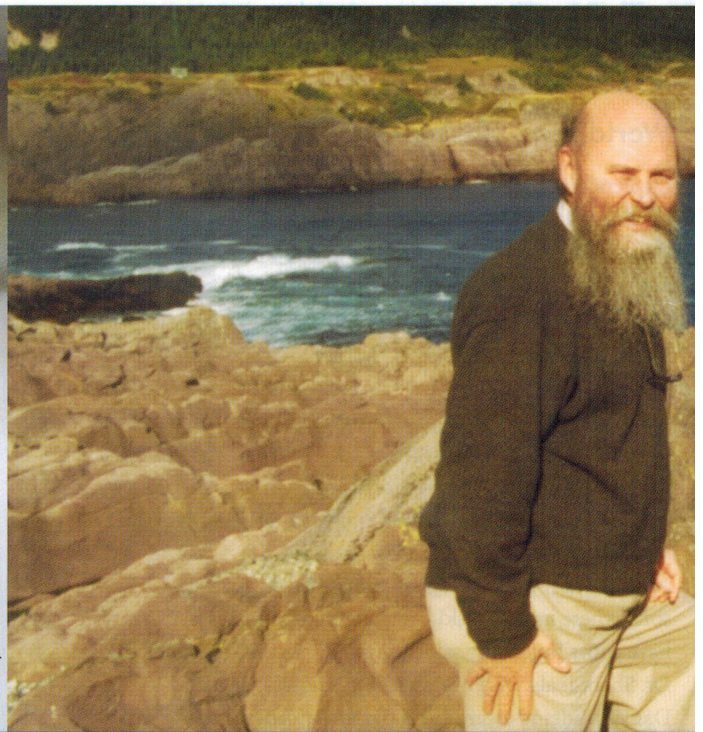




Photo by Gina Saunders



CULTURING INNO

ON A COLD JANUARY DAY IN 2002, FRAN KIRBY (B.Sc.'84, B.Ed.'87, M.Ed.'92) was preparing to launch the framework portal of a new e-learning Web site for rural health practitioners, when a major snowstorm closed roads and stranded travelers, putting the event on hold.

Fran leans forward over her well-organized desk as she recounts how the inclement weather actually reinforced the need for the new technology they had created. "One of the rural doctors called me and said he couldn't get in from Brookfield, and he remarked that this was a perfect example of being isolated and being at least able to get online and do some courses.

"We have physicians in remote areas who cannot travel during winter months," says Fran, manager of the Faculty of Medicine's Office of Professional Development and project leader for The Electronic Rural Medicine Strategy (TERMS).

TERMS, a set of online professional development courses and an accompanying Web portal, www.RuralMDcme.ca, was devised to make it easier for rural doctors to upgrade their medical knowledge and skills.

In July, TERMS was one of four Memorial-led projects awarded funding through the Atlantic Innovation Fund, an initiative of ACOA implemented to foster innovation and boost the region's economy.

Speaking to *Luminus* by telephone, Dr. Arthur May (B.Sc.(Hons.)'58, M.Sc.'64, D.Sc.(Hons.)'89), chairman of the AIF advisory board, which selected 47 successful projects from 195

applications, says that all the funded projects exhibit a strong potential to create wealth, but also had to be based on a completely new idea.

"The project had to demonstrate you were using or developing leading-edge science and technology, that you knew what you were about. It wasn't something you were just borrowing off the shelf," he said.

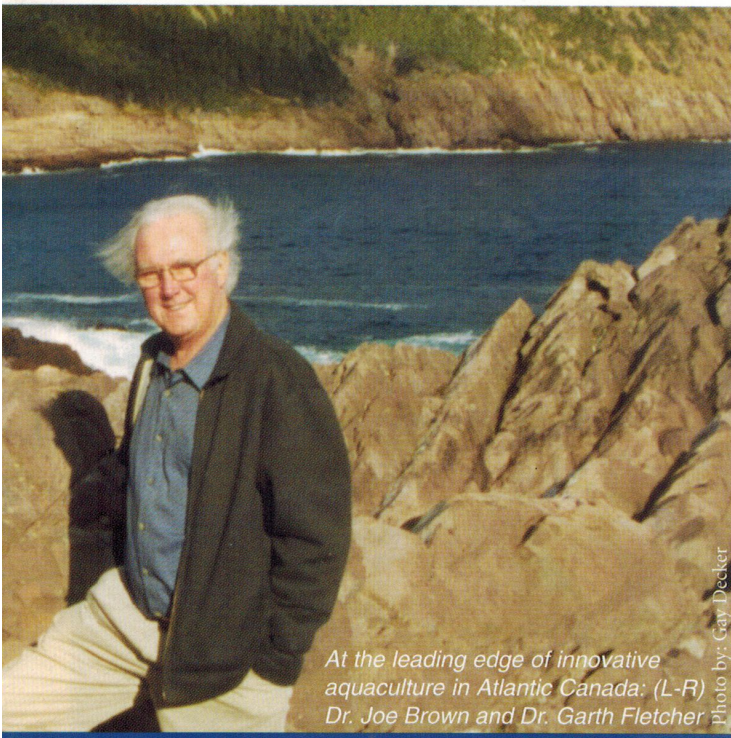
The first of its kind in Canada, the *RuralMDcme* Web portal has proven itself as an innovative technology with immediate economic benefits. TERMS already hosts five accredited online courses on its Web portal, and with the help of the strategy's six university partners, including Dalhousie University, and many public and private partners located across Canada, 25 more are planned over the next three years.

Fran's eyes widen as she talks about global opportunities for TERMS' commercialization through the licensing of either online courses, or the Web portal, to other countries. "We're not just thinking Canada, though Canada is our first priority. But if you're going to build on the portal framework, there's more opportunities outside the country to get the money back into Atlantic Canada and to show that we're not just leaders in Canada, but leaders in other countries as well."

The Hottest Topic in the World: The powerful waves visible from Dr. Garth Fletcher's office in the Ocean Sciences Centre are a fitting backdrop for his own dynamic personality. Interviewing him is a challenge as he rapidly chronicles his impressive research history on gene transfer in fish.



Fran Kirby manages rural medicine strategy



At the leading edge of innovative aquaculture in Atlantic Canada: (L-R) Dr. Joe Brown and Dr. Garth Fletcher

Photo by: Gay Decker

INNOVATION

by Gay Decker

His work on creating freeze-resistant salmon gained worldwide recognition in 1982. Since then he's used gene transfer to produce salmon that reach market size a year earlier than those currently grown by the Atlantic industry. Now his team has secured AIF-funding to develop salmon that can fend off disease, too.

Farmed salmon are more susceptible to infection because they are raised in confined spaces, a problem which can cost the salmon aquaculture industry dearly. Garth churns out a rapid-fire sampling of the damage. "In Chile, \$100 million is lost annually because of bacterial disease in salmon. In Scotland, over a four-year period, \$230 million was lost, along with 200 jobs. New Brunswick estimated \$50 million was lost from 1996 to 1999."

Garth's research on transferring disease-resistant genes to salmon is leading edge. "We're the hottest topic in the world because we create transgenic salmon. We are the only team internationally touching the subject for commercial purposes," he says.

Contributing to Rural Communities: In a small office, spilling over with books, binders and papers, the affable Dr. Joe Brown (M.Sc. '76) chats optimistically about his team's research on another innovative aquaculture project at Memorial. Joe is the project

Providing the culture in which innovative ideas are nurtured: (L-R) Dr. Andrew Pulham with Dr. Jim Wright



leader for the AIF-funded cod aquaculture project, focused on improving the production process for farmed cod—from hatchery to supper table.

Raising cod in captivity is a multi-stage process that requires a detailed simulation of the fish's natural life cycle and environment. Supplying the right food is very important. In addition to algae and zooplankton, cod are fed proteins and lipids to ensure they receive adequate nutrition. Light also plays a key role.

"By turning lights on and off, using different photo periods, we can trick the cod into spawning several times a year, which is good from a commercial perspective," says Joe.

Joe is particularly enthused about the potential commercial benefits of cod aquaculture for rural Newfoundland. "The actual industry is out in the bays and that's what gets me excited... This may help some of the communities. Once you get it out there, it tends to be done well. People really get enthusiastic about it."

Tapping Reservoirs of Talent: Newfoundland's offshore also holds exciting research opportunities for Memorial's Department of Earth Science. That is perhaps why, by the time of our 7:30 a.m. telephone interview from Halifax, Dr. Jim Wright, the department head, had already been working for two hours.

Jim is also the project leader for the Pan-Atlantic Petroleum Systems Consortium (PPSC), a group of Atlantic universities that received AIF funding to supply the specialized expertise needed to extract oil and gas from the east coast's offshore reserves.

"I believe the drilling in the Flemish Cap will be the most remote from land anywhere in the world. It's a cold, harsh environment on the best of days," says Jim.

The PPSC's AIF funding will allow Memorial to build a strong team of experts. So far, Dr. Andrew J. Pulham has been appointed to a Canada Research Chair in petroleum geoscience, and three more appointments are planned in the areas of reservoir engineering, asset integrity management and underwater systems.

Jim is excited about the new ideas AIF funding will help engender. "Hire good faculty and then turn them loose. That's what we're trying to do. Provide the culture and climate in which ideas can be born, nurtured and developed."

Arthur May agrees. "Atlantic Canada is well behind the rest of the country in R&D capacity and well behind the rest of the country in capacity to innovate... we are sort of going to the root of that problem by taking the capacity we have and magnifying that through partnerships within Atlantic Canada and between public and private sectors and encouraging people to build on things they are doing to create economic activity. That's what it is all about"—he pauses

for emphasis—"pulling ourselves up by our boot straps, with some help from our friends." 