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The Dalhousie School of Occupational Therapy **Orientation '96 Committee** 

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## science / environment the Gazette September 26, 1996 The purest of mathematics

#### **BY ARIEL J.D. GORDON**

Walking into Richard Wood's office, you see what you'd expect of a professor - filled to overflowing bookshelves, a computer, and a chalk-daubed blackboard - but there are a few items here that stand out. The politically correct dictionary sitting on one shelf. The black cowboy hat on another that would seem to complement his all-black outfit. The blocks of wood on his windowsill tere ' form a rough cube.

The book he finds amusing, the hat is a personal fashion statement, but the uneven places of wood reveal his passion to. research. Those blocks, rough and uneven, are a demonstration of category theory, Wood's specialty. Like most other professors, Wood is required to publish on a regular basis or be bumped from the tenure track. He doesn't mind though, because he loves what he does. And what he does, is research.

"I think it's important to do both teaching and research because the two complement each other," he says.

"I don't believe in this business of having people who are dedicated teachers who don't do research, and for that matter, I think that researchers tend to be better if they have to do some teaching."

For Wood, it's a question of finding the right balance.

If you look at this 48 year-old math professor's blackboard, you'll see layers of formulae, what Wood calls extracts of conversations with other profs, the crux of six different papers. It doesn't get cleaned very often, but he happily clears a corner to explain category theory. With neatly labelled diagrams, it's easy to see he'd be a good professor.

Wood teaches at both the graduate and undergraduate levels, and this year will be instructing a first year calculus course as well as more advanced courses. When teaching, Wood tries to publish two or three papers annually, but dreams of a bumper crop of five or six in one year. In years when he's on sabbatical he does better, but seems to spend more time just thinking — it's all fodder for the next research project. The writing tends to get done once the sabbatical is over.

"The great thing about doing mathematics research is that you can do it almost anywhere," says Wood. "I do a lot of it when I'm flying around in airplanes because there's not much else to do there. If you have an idea, you can start working on it with a pad of paper and a pen or pencil almost anywhere — at the beach, at home, wherever." "I don't want to give the impression that mathematics nowadays is only a paper and pen discipline because there's lots going on there that requires experimentation," he cautions, nibbling on the doughnut I've brought as a thank-you for the lunch-hour interview. "But what I do find is marvellous about mathematics is its portability.' As a researcher in a purely theoretical field, one would think Wood would miss the excitement and hands-on nature of typical laboratory work. But he says, "I find mathematics such a lively

## **Professor R.J. Wood describes** his love of mathematics research

many other disciplines that I don't feel t all isolated.'

Wood graduated from Dalhousie with his Ph.D. in 1976 and has taught here since 1977. Gretchen Smith, Administrator for the Math, Statistics and Computer Science department at Dalhousie, remembers Wood from his years as a student at Dal.

"Richard Wood was a good graduate student," she says. "And he would drive a motorcycle to and from classes."

Wood never expected to stay at Dalhousie, but doesn't mind where he's at now.

"The course loads that we have at Dalhousie in the mathematics department are reasonable for doing research in mathematics," he says. "You can very easily overload somebody with undergraduate teaching so they don't have enough time to do research."

In terms of his own specialty, Wood says a substantial part of modern mathematics is concerned with studying mathematical structures, inseparably linked to category theory, which takes it upon itself to have this overview of mathematics.

"And then we get to the really nice self-referential aspect of the

subject that reaches out to so subject, in that a category is a mathematical structure, and there are meaningful ways of talking about relationships between these mathematical structures," he burbles happily. "So not only do we have category of groups, the category of spaces, we have the category of categories.".

Wood doesn't really expect anyone who isn't a professor or a graduate student, with a similar specialization in category theory. to grasp more than the basic concepts at work here. The research that Wood does and the papers he writes are geared to those in his field. The Dal professor realized the other day that 1996 was his twentieth year in the field of mathematics and was mildly astonished by the passage of time. He foresees more years of teaching and research, given the nature of the work he does and the advances in the field, especially with on-line journals and programs like Latex that make writing and publishing papers much easier.

"I was happy a few years ago when I managed to solve a problem I'd been working on for fifteen years," he says, smiling.

"I'll have to find another problem now."

# **Beach sweep** cleans debris

#### **BY BARBARA MULLER**

What happens to disposable tampon applicators when you flush? Not a question many people ask themselves. On Sunday Sept. 22, the answer to that question, and a whole lot of trash, was found.

This past Sunday, the 12th bi-annual beach sweep at McNab's Island, organized by the Friends of McNab's Island Society, brought together almost 150 volunteers to clean up the island. Geared with gloves and bags, people picked garbage for several hours. finding everything from a Barbie doll shoe to rusting car pieces. Also found were lobster cages, ropes, styrofoam cups, large plastic tubing, and plastic (mostly oil) bottles. Halifax's lack of sewage treatment facilities accounted for the hypodermic needles, used con-

doms and tampon applicators, which were found littered all over the area. Millions of litres of raw sewage is dumped into Halifax Harbour each day, including sanitary and storm water sewage. The last proposal for sewage treatment, with a \$400 million price tag and a McNab's locale, never passed.

Trash was not limited to sewage products, however. and included debris from boats and visitors to the island. Aluminium cans, about 85% of which were beer cans, as well as intact glass and plastic bottles were collected separately and recycled.

The day finished in good spirits, and with 300 bags of garbage. If anyone would like to learn more about McNab's Island, or visit this provincial park, they can contact The Friends of McNab's Island So-

ciety at 434-2254.

