interview by Sara Franca for the DCS Newsletter
on the occasion of my retirement
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What do you like most about the field of computer science?
I came to UofT in 1969 as a graduate student of physics. I talked to various prospective supervisors, but I didn't find anything interesting. To me, they didn't even seem interested in their own research. But just upstairs, on the eleventh and twelfth floors of the physics building, there were people who were just bubbling with enthusiasm for their work; that's where computer science was located then. The field and the department were just starting up. Back then, it was not clear whether there was enough material for a respectable academic discipline; it was likened to "telephone science" (and phones were really primitive then). I have watched, and participated in, the progress of cs from then until now. It has been amazing and wonderful. I have seen the entire field develop from almost nothing to the most active, productive, and varied subject in the university. What better field could there be?

Who has had the most impact on you and your research?
I guess that's Sir C.A.R.Hoare and Edsger W. Dijkstra. They largely created the field of formal methods. Edsger was a good friend and mentor, and Tony still is. In 1977 I was lucky to be made a member and secretary of IFIP working group 2.3. It's a group of about 25 researchers in my field from all over the world, including 5 Turing award winners. And in 1998 I was made a member of working group 2.1, which developed Algol 60 and Algol 68 and influenced Haskell. Each group meets for a week every 9 months, and we discuss each other's research. That's been the biggest influence on my research.

What research project have you enjoyed working on most?
The project originally called "predicative programming". My idea was to treat programs as executable specifications, and treat specifications as boolean expressions (predicates). The book *Funding a Revolution: Government Support for Computing Research*, Committee on Innovations in Computing and Communications: Lessons from History, National Research Council (U.S.A.), National Academy Press, 1999, said "In this approach, programs are derived from specifications by algebraic calculation. In the most advanced manifestation, formulated by Eric Hehner, programming is identified with mathematical logic. Although it remains to be seen whether this degree of mathematization will eventually become common practice, the history of engineering analysis suggests that this outcome is likely.". In the meantime, it resulted in several PhD theses, several books (including one by me), changed the course of Tony Hoare's research, and became a conference series.

What was your favourite course to teach?
CSC465/2104 Formal Methods of Software Design. I created the course in 1982, and wrote two textbooks for it (*the Logic of Programming*, 1984; *a Practical Theory of Programming*, 1993, 2002, 2012). I won't claim the course was popular; few people chose it. But each year there were several students who became enthusiastic about the material, and that was rewarding. I also really enjoyed teaching CSC258 Computer Organization, which I have taught since 1974. Keeping that course up-to-date has been fun, and I even snuck in a little of my own research on high-level circuit design.

What accomplishment to date are you most proud of?
I am proudest of my students who wrote brilliant theses and went on to do great work in academia or industry. Several became heads of computer science departments, and one became the Microsoft vice-president in charge of software development.

What has made DCS special for you?
I could have been a big fish in a little pond, but I much prefer to be a little fish in a big pond. I have been surrounded by the brightest and best faculty, staff, and students. But it's more than that. A couple of times I was the target of recruiting by other universities, including Stanford and the Oregon Graduate Institute. But UofT DCS, at least for my time here, has always had a supportive culture, and that's why I have stayed here. We treat each other with respect, and we cooperate. I have spent time at many other places, and they aren't always as nice to each other as we are.

What are your hobbies?
My main hobby is folk music. I play guitar and violin and piano (not at the same time), and I am part of two groups that play regularly. The songs I lead seem mostly to involve death; I don't know why. I ski, and I snorkel (not at the same time). I still like to travel, although I can't do short stay trips across many time zones any more.

What are your plans after DCS?
It's a cliché, but I want to spend more time with my wife than was possible when we were both working; she has just retired too. We're going to try to avoid winter as much as possible. I hope I'll have more time for music, and I want to do some writing that isn't cs research.

What is the fondest memory you have of DCS?
Well, how about this one: I was just finishing my PhD, thinking about applying for a job, and making a list of places I might like to apply to. The chair of DCS at the time, Tom Hull, said forget about it -- you'll work for us. I didn't even ask what the salary would be; I just said ok. So I've never applied for a job in my life. That was a different world!

What will you miss most about leaving DCS?
Leaving? Wait a minute -- I'm retiring, but who said anything about leaving?