

York to launch 2 new streams of atmospheric chem study in September

by Salman A. Nensi

The York Senate has granted a request for two new streams of study and a new name for the faculty of science.

Now known as the faculty of pure and applied science, the name change recognizes York's strengths and innovations in the area of applied science, says faculty of science dean Kim Innanen. He regards the name change as a signal of the faculty's diversification and is part of a general trend of hiring talent and promoting excellence in the applied sciences.

The name change could be seen as the first step in creating a separate applied science or engineering faculty at York, says Innanen. He feels that it would be better for both pure and applied science to remain under one umbrella faculty since they both began with the same undergraduate base. Even so, he is unwilling to discount the idea of a faculty of engineering at York completely.

The creation of two streams of undergraduate study in atmospheric chemistry, (one leading to a specialized honours degree in chemistry, the other to a combined honours degree in chemistry and earth and communication science) is an important part of the general trend, said Innanen. The two new streams are the first of their kind in North America. Already in place are the space and communication science stream and still to come are streams of study in applied biology and biotechnology.

The push to create the atmospheric chemistry (atchem) streams comes, in part, from a grass roots movement from within the faculty. Both Innanen and chemistry department chair Diethard Bohme agree that there is a need, in government and industry, for trained atmospheric chemists. According to Innanen, many countries are realizing that atchem is becoming very important, in an international strategic sense.

York's reputation for excellence in atchem is well known. Based at York are both the Centre for Research in Atmospheric Chemistry and the Canadian Institute for Research in Atmospheric Chemistry. These groups, with the existing chair in industrial research, now held by Dr. Hiromi Niki, and the new streams of study, have added to York's reputation. York is fast becoming a global leader in atchem research.

Other universities are not attempting to copy York's commitment to this field. According to Dr. Martin, associate professor of chemistry at the University of Western Ontario, "York has an excellent department that is concentrating on atchem. To avoid duplicating research, Western is focusing on analytical chemistry."

The international concern for the environment has led to atchem gaining much importance over the last decade. The Federal Atmospheric Environment Service (AES), Canada's second oldest government service, recently announced a new position of atmospheric chemist in all six environmental regions of Canada.

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Two years ago, the then Assistant Deputy Minister Howard Ferguson, recognizing the growing political and public concern over the environment, began to lay the ground work for these positions.

Dr. David Wardle, a top research scientist in the AES's experimental science division, explains that the absence of undergraduate programmes in atchem may be due to the nature of the science

itself. A good atmospheric chemist must be a combination of biologist, physicist, chemist, meteorologist and mathematician. Wardle explains atchem as, "... the study of the complete cycle of atmospheric pollutants, from the time they enter the atmosphere until they are eventually redeposited in the earth, sea, ozone and so on." Hence the need for a comprehensive interdisciplinary background in any atmospheric chemist.

Guy Fenech, head of the office of director general of the atmospheric research directorate at the AES, describes the new atmospheric chemist's mandate as, "Finding out as much as possible about the pollution problem and figuring out how to solve it." With such a mandate, Fenech admits that the AES is having difficulty filling all six positions.

York is having similar problems in filling a new research chair in atchem. The position created in 1988, with a donation of \$1 million by the Rogers family, in memory of the late G.W. Rogers (owner of Saint Mary's Cement Limited) is still vacant.

"G.W. Rogers, whose grandson attended York, was very concerned with the environment," notes York's vice-president (external affairs) Ian Lithgow. "Mrs. Rogers has often remarked that, when seen from their farm, Toronto seems to have a nasty brown haze hanging over it." The Rogers' concern about the environment led to the donation to atchem in hopes that the environment is still curable.

"There are only half-a-dozen qualified scientists in the world

and negotiations are liable to last a while yet," said Lithgow. The two new atchem streams will begin, without the position filled, in September 1990. There is an expected enrolment of 15 students annually. It is hoped that these will be students who would not have otherwise considered attending York. This means that they will aid in offsetting much of the expense generated by the new streams. Bohme is confident that the new streams will not place a large financial burden on the faculty, and that there will be no increase in tuition fees.

Innanen, agreeing with Bohme, notes that the first two years of study will consist mainly of courses that are already offered. He further suggests that the need for additional lab, computer and other facilities for third and fourth year students is of very great concern. "We have, at the preliminary architectural stage, a plan for a new Academic Science Building, to be built on the site between the Petrie Science Building and Norman Bethune College. Steps are also being taken to obtain funding from the provincial government in order that we may strengthen the science library's holdings."

The new building and the restocking of the library will relieve much of the intense pressure now being placed on the faculty's limited resources.

The growing importance of atchem, the need for qualified atmospheric chemists, and the entrenchment of York's position as a major global leader in atchem research more than makes up for any of the costs involved in setting up the new streams of study.

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