

with different price tags. "Terracing is a major up-front cost per acre" and can interfere with basic farm operations like turning a tractor around, says Jim Porterfield, technical specialist for land and water resources at the American Farm Bureau Federation. By contrast, soil-conserving practices such as no-till farming or adding biomass "residue" to the soil surface after harvest often require purchasing a few extra attachments for standard farm machinery, he says. With farming's low profit margins, these choices can make the difference between a good year and a loss.

Foster contends that RUSLE is perfectly up to the task of making these evaluations. He says the model accommodates no-tillers like Kinsella by "lowering the erosion curve" based on actual no-till data. In the Northwest, both Foster and Renard say that recent modifications to the way climate affects erosion in RUSLE have greatly improved its

accuracy. Foster admits that the freeze-thaw style of erosion there "makes the Northwest a very challenging problem to deal with." But, he says, difficult economic conditions among farmers there have left many of them unhappy with conservation regulations, resulting in attempts "to kill the erosion prediction technology behind the policy."

But Foster reserves some of his sharpest criticism for SCS, which he says has delayed implementation of RUSLE—originally scheduled for last October—until this August for fear of complaints, and possibly lawsuits, from farmers who might have to adopt more expensive plans than USLE required. Equally "embarrassing" given the delay, he says, might be cases in which farmers are told that elaborate preparations already under way can be dropped. Rumors as to how predictions of the two programs will differ have been rippling through the farm community, but Foster says

that few generalizations can be made.

Schertz flatly denies the charge of stalling, saying the agency has "no real concern" about possible challenges in court and that SCS simply underestimated the time needed to take the research-scale package provided by ARS and come up with a practical tool for use in the field. But even when RUSLE is up and running in SCS offices, Schertz continues, the agency won't push farmers into quick makeovers of their plans if the old and the new predictions aren't too far apart. "A lot of conservation plans that were good yesterday are going to be good tomorrow," he says. So at this point, no one is betting the farm on major plan revisions accompanying the August deadline.

—James Glanz

James Glanz is a free-lance science writer living in Chicago.

SCIENCE IN CANADA

Report Condemns Pressure to Publish

On 24 August 1992, Valery Fabrikant, a research professor in the department of mechanical engineering at Concordia University in Montreal, calmly walked into a university building and gunned down four faculty members. He's now serving a life sentence in prison, but repercussions from the incident are just beginning to spread through the Canadian university system.

Fabrikant said he killed his colleagues to draw attention to his grievances against the university: charges of research fraud, research contract irregularities, and his claim that he was unjustly denied tenure. Two new reports, made public over the last 3 weeks, found no basis for Fabrikant's charge of fraud, but concluded that some of his other complaints should have been taken seriously. One report notes that university officials proved incapable of dealing with Fabrikant's charges or handling his increasingly threatening and disruptive behavior. But the second report is potentially more damning. Not only does it find that some of Fabrikant's complaints had some legitimacy; it goes on to say these problems—conflicts of interest, excessive outside professional work, and misappropriation of authorial credit—extend throughout Canada's scientific and technical schools.

The first report, authored by John Scott Cowan, former vice-rector of the University of Ottawa, lambastes Concordia officials for allowing an increasingly aggressive cam-

paign of charges and threats by Fabrikant to go unchecked. Concordia's board of governors fired rector Patrick Kenntiff and three other officials just after the report was released on 31 May.

The second report, "Integrity in Scholarship: A Report to Concordia University," was released on 6 June. Its authors, a three-



Aftermath of a killing. A new report bears out some charges brought by Valery Fabrikant before he shot his colleagues.

person committee chaired by former York University president Harry Arthurs, found a prevailing culture at the university of "production-driven research" which they compare to an auto industry driven by quantity, not quality. Bigger grants and more equipment go to those with long publication records, the report notes, and these "ends are sometimes used to justify means which are highly questionable." Those means, the report says, include an abundance of inappropriate authorial credit, as well as a large amount of outside contract work by faculty that detracted from their duties as university teachers and researchers. These problems, the report says, are not unique to Concordia, but are products of "the almost inescapable pathology of the surrounding research culture, of systems...which have developed in Canada over the past 25 years, and ultimately of developments in scholarship which, if not universal, are certainly widespread."

Some of the blame, the report states, can be laid at the door of a 1970s Canadian government policy of giving private-sector bidders preference in government basic re-

search contracts. The solution hit upon by university researchers was to privatize themselves: form private companies and bid on government work. The Arthurs report suggests that at least two of Fabrikant's colleagues, S. Sankar and T. S. Sankar, were quite successful at this. The report says they attracted research contracts, per diem payments, and profits, all the while using university facilities and students to do the work. This led to more publications and more prestige and grants. The report goes on to note that these researchers are highly regarded scientists, and characterizes their participation in these practices as "unfortunate." All the scientists have issued public statements strongly denying any allegations of impropriety.

After the Arthurs report came out, Reginald Groome, chair of Concordia's board of governors, echoed its conclusions about the overall research climate when he told a 9 June press conference that Concordia is "merely in the same type of situation that many universities across the country are in, but we are taking the rap because of what happened." But Claude Lajeunesse, president of the Association of Universities and Colleges of Canada, downplayed the extent of the problems enumerated by the Arthurs report. "The granting councils have been paying more attention to the quality of publications," he says.

More details on the extent of these alleged improprieties may be coming this summer, after a Concordia audit on the use of research funds by the engineering and science faculty is completed on 30 June.

—Douglas Powell

Douglas Powell is a graduate student at the University of Guelph.