

Spring 1999 Convocation Address

Saturday AM

Convocation is a time of celebration and reflection. For, you, our graduates, as well as your families, friends and teachers, it is a well-deserved moment of triumph. Your hard work, late nights preparing papers and studying for exams, your financial and personal sacrifices have truly paid off. Today we confirm your standing as Dalhousie's newest graduates. The platform party, the faculty and staff of the university are delighted for you. On their behalf, I congratulate all of you.

Convocation is also typically a time for reflection. For, you, our graduates and your guests, it usually involves both fond and difficult memories of the struggle to get here. Thoughts about your future, I'm sure, also loom large for most of you. For the Dalhousie community, this occasion also elicits the same concerns about where we've been and where we're going as an institution. Allow me to take a couple of minutes to share Dalhousie's story with you. Since it's an adventure story, let me tip you off at the outset that we follow the time-honoured conventions of the genre – trials and tribulations at the start of our tale and triumph at the end.

Dalhousie's story starts out as part of a larger national tale. Canada is extremely fortunate among nations to have created an excellent system of higher education, but during the 1990's the academy has faced some stern challenges. As government priorities shifted, real government support for education

dropped by almost 20%. Inevitably, across the country tuition fees rose sharply to offset reduced funding and maintain quality, but even with tuition raises of 70% in recent years, fee increases only offset half the universities' losses in government funding. To the south our US neighbour and greatest competitor took a different tack. While our governments cut funding, theirs increased support. The gap between Canadian and American funding per university student has increased by 50% over the past two decades. I fear that the implications of this growing gap will soon come back to haunt us. In universities, as in other areas of life, you get what you pay for. Think about what that means for a moment in the context of the development of the global knowledge economy. As someone put it, if you think education is expensive, imagine the costs of ignorance.

These developments threaten the quality of our national education system and the long term competitiveness of our economy. Over the past decade university enrolments have increased significantly while the number of professors in our universities have fallen sharply as a result of funding cuts. For our students, the result, obviously, has been a significant rise in class sizes. Eventually, unless something changes, this will result for some students in less personal attention, less time for assignments and evaluations, less time for individualized instruction. It stands to reason that an 11% reduction in the number of professors in Canadian universities at a time when enrolments have been rising sooner or later must have an impact on the quality and capacity of our national education system. To make this point a little more graphically, the 11% loss in faculty

numbers equals 2,000 professors. If we exclude Dalhousie, that's more than all the professors combined at all the other universities in Nova Scotia and New Brunswick.

Let me add one other ingredient to this mix and then I'll draw a couple of conclusions. Our faculty teach and do research. Their work as scholars enables them to bring the latest discoveries into the classroom for their students. That's the link between cutting edge research and education. It's also the link between the university and national economic development, since it is these discoveries that provide the foundation for new industries and new jobs. So how are we doing with research? The answer is "it depends". It depends on how you look at the matter. After a decade of cuts, the Canadian government recently restored research funding to the same level they supported in 1990. That's the good news. Unfortunately, even after this renewal, Canadian researchers receive only one-third the level of support of their American competitors. The next time you read a story about the "brain drain" to the United States, or learn about a famous Canadian researcher who has sold his ideas to a foreign company and moved to an American university to pursue his work, you'll know why.

The consequences of all this are pretty obvious. Over time, it will get harder to maintain the quality of our excellent university system. Education will suffer. Our buildings will deteriorate. Researchers will become less productive. The transfer of new technologies to the economy will slow. Innovation and competitiveness must slip. Our economic prosperity and quality

of life inevitably will deteriorate. In sum, our story will reach a crisis point.

At Dalhousie we've refused to sit back and accept this picture as our inevitable fate. Quite the contrary. Despite all the difficulties involved, we're pushing ahead in a pretty impressive fashion. Over the past few years, following our merger with the Technical University of Nova Scotia, the new Dalhousie has added faculties of architecture, computer science and engineering to our united academic strengths. We've also created a host of new programs to improve our students' academic and career choices. We've started up new research centres, too, focussing on some of the critical areas of national concern. All of this, of course takes money, lots of it. So, five years ago we launched a national fund raising campaign to help finance these initiatives. The result has been our greatest success ever! Over the five years our alumni, friends and corporate supporters have contributed or pledged \$80 million to help us move forward at Dalhousie.

How will we use these funds? For a start, we're increasing our scholarship support to help us continue to attract the best students in Canada. This year, Dalhousie students had the fifth highest entering grades of any university class in Canada, a clear indication of Dalhousie's reputation in a very competitive educational marketplace. Good students motivate each other and ensure strong academic standards. It is essential that Dalhousie remain competitive for the best that our region and our country produce.

We're also using new funds to rebuild our faculty numbers and support their research activity. Over the past five years we've created 29 new faculty positions with money from our endowment and capital campaign. These appointments will open new initiatives in petroleum engineering, women's health issues, business law, biomedical engineering, informatics, research into treating schizophrenia, computer science, forest genetics, ocean research and forensic psychology to name but a few. At the same time, our faculty members continue to work at the forefront of their research fields. Last year, Dalhousie professors attracted over \$54 million of external research support from government and corporate sponsors enabling the university to hire over 800 additional research staff, technicians graduate students and support personnel to work on projects. These Dalhousie projects account for one-third of all the research and development work carried out in all sectors, private and public, in Nova Scotia. In a knowledge economy this matters more and more each year.

Finally, as you probably noticed when you arrived on campus today, we're also working on renewing our campus with some of the resources we've raised. Our new computer science building across the street from this auditorium will be open this Fall. Down the road a short distance, at our DalTech campus, we're working on a new home for Industrial Engineering and the Continuing Education Department that will also be ready this Fall. And of course, last week we started construction on a new building for our Faculty of Arts and Social Sciences just next door to where you're sitting. When we open its doors to the Class of 2,000, we plan to host a special celebration of the arts

at Dalhousie to mark the occasion. The long term impact of these projects on Dalhousie will be profound. New science, language and computer labs, new high tech classrooms, offices and common rooms, -- in short, the very environment where we pursue the Dalhousie educational experience, will be greatly enhanced.

In a word, despite lots of stresses and strains, Dalhousie is busy renewing itself. Certainly this is true for the Faculty of Engineering, whose graduates we're celebrating today. Our Faculty recognizes that it is critical to expand the range of educational opportunities for engineering students in areas that promise substantial economic growth in the future. This year, in cooperation with the Faculties of Medicine and Dentistry, the Faculty established a new School of Biomedical Engineering. Start up support for this project will come from a \$1.25 million grant from the US based Whittaker Foundation. The Faculty has also developed plans recently for an exciting new undergraduate program in Food Sciences. These programs reflect the dynamic research interests of professors in the Faculty. While it is impossible to list all of the projects carried out during the past year, a few merit special attention: a project to produce tougher concrete by adding fuzzy fibres is moving forward to the stage of industrial application; a consortium of oil companies recently tested a new process that enables producers to avoid using screens and filters in oil wells to sift out sand and gravel, a change that promises millions of dollars of savings in the future; faculty have accepted a government contract to work on innovative methods to reduce urban and rural household

water usage, thereby cutting the cost of developing new sources of supply; a simulation model developed in Mechanical Engineering has been adopted by the Technical Research Centre of Finland to test bio-energy options in the production of electricity, heat and liquid fuel; a new, high-efficiency electrical plant design that improves productivity and reduces pollution is being introduced in India, supported by a \$2 million CIDA grant; and, just to make sure that you don't think that the University stood aside during all the recent hoopla over the Titanic disaster, faculty in Metallurgical Engineering have been asked by an educational film company to test samples from the wreckage of the Titanic's hull and to analyze coal samples used in its steam generators to enhance our understanding of the causes of the disaster. Watch for the outcome at a cinema near you!

These projects depend on the quality of our faculty. I'm pleased to inform you, therefore, that one of our number, Professor Mo El-Hawary, who serves as Associate Dean, was recently awarded the prestigious McNaughton Medal by the Institute of Electrical and Electronics Engineers of Canada for "significant and sustained technical contributions to electrical and electronics in engineering in Canada." Professor El-Hawary, who recently published a major book on Electrical Power Applications of Fuzzy Systems has also been chosen by the IEEE to receive its Outstanding Power Engineering Educator Award, to be presented later this summer. I also wish to congratulate our Dean of Engineering, Professor Adam Bell, who was chosen by his colleagues across Canada to chair the national committee of

the Deans of Engineering and Applied Science for the past year. It's important and gratifying to see this sort of leadership from our distinguished faculty and academic administrators recognized throughout the profession.

So that's our Dalhousie story. A lot of challenges, a few crises, but in the end we're moving forward with increasing momentum. If that's the story, why is it important?

To answer that, let me return to the heart of the university, our students. From personal conversations and surveys, I know that our students graduating today came to Dalhousie for a variety of reasons, -- to broaden your experience and your outlook, to pursue career goals, to meet new people and expose yourselves to a different environment. At the end of your studies, whatever their subject matter, and whatever your original motivation for coming to Dal, we're confident that you have changed over the years as we've worked together to master course content, develop your minds and improve what Thomas Mitchell calls "the mental skills of speech and communication, reasoning and analysis, creativity and imagination, and moral discernment. These are the capacities," he says, "that represent real brainpower; they are our best hope for enlightened progress." If we've been successful in helping you achieve these goals, whatever your discipline and your career plans, we've helped you become active learners, good problem solvers, responsible citizens ready to use reason to test, question and explore the mysteries and challenges of the world. In short, we've helped you renew and expand yourselves. This, of course, is the same

challenge Dalhousie faces, to renew our university and expand its capacities the better to serve you, your fellow students and our community. The skills we cultivate and the talents we nurture at your university matter a great deal, -- they matter to your personal chances for success and they matter to the future prosperity and vitality of the communities that have supported your studies.

Every good story has a beginning, middle and end, with a crisis and its resolution along the way. The Dalhousie story certainly has that. The best stories, however, even as they end, also leave you wanting to know more about what's going to happen to the central characters with whom you've spent time and for whom you've learned to care. Now, of course, I'm talking about you, our graduates. At this point, it's your turn to write the next chapter. As you move forward to the next stage in your lives, we wish you every success and much happiness. We're very proud to admit you into the distinguished company of Dalhousie graduates. thank you & good luck.

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