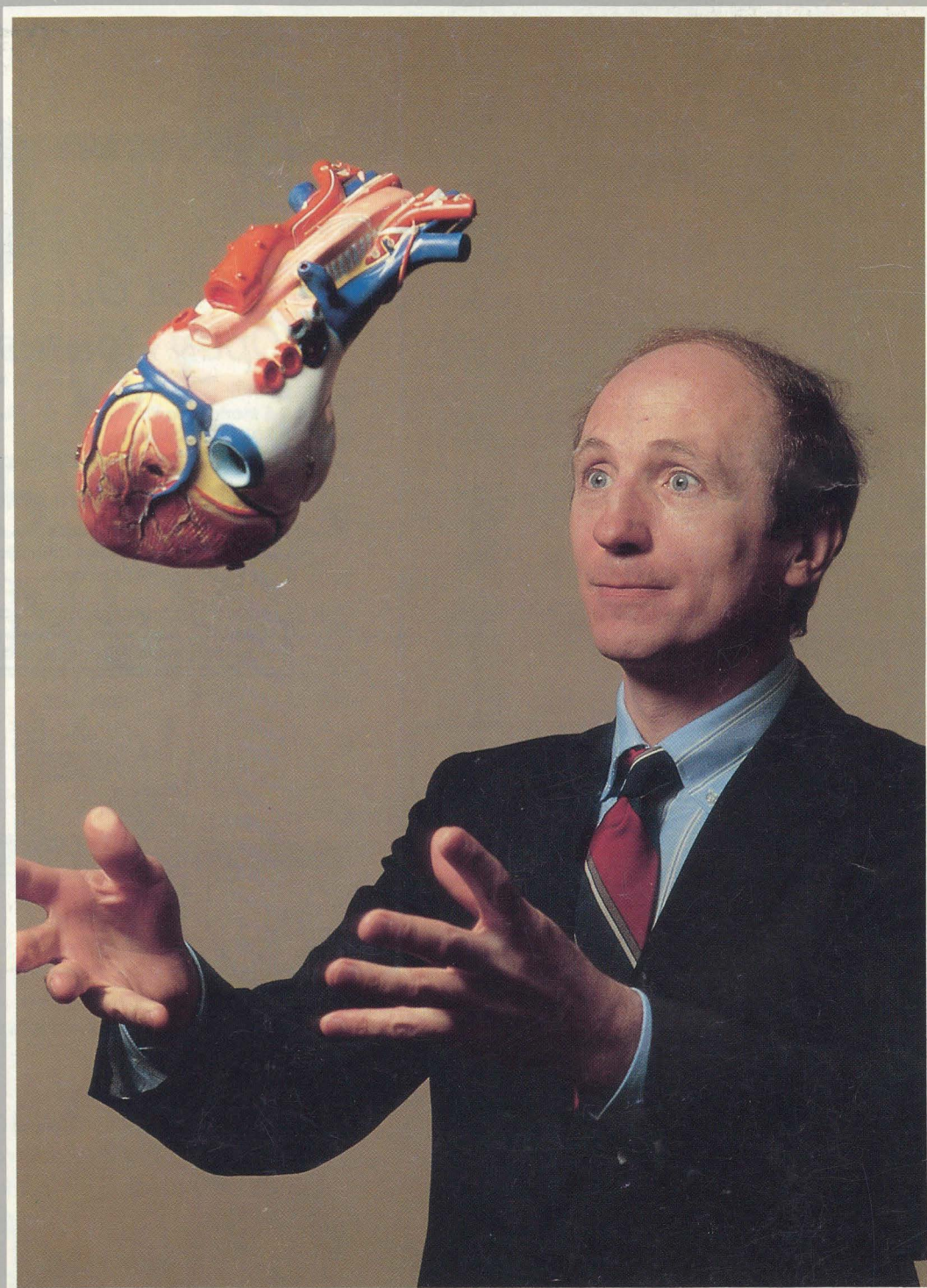


DALHOUSIE

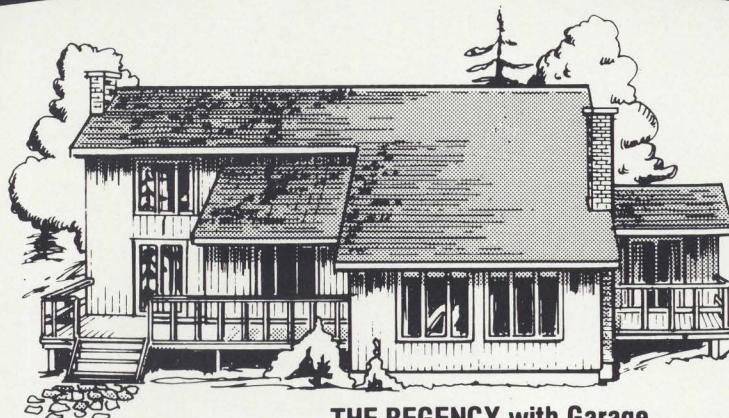
A L U M N I M A G A Z I N E



Donald Hill (MD '60): He's got a lot of heart. Page 8

Winter 1987

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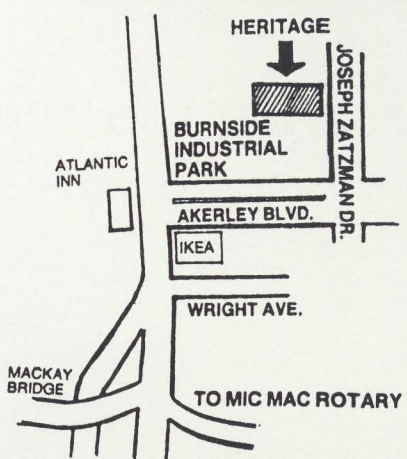
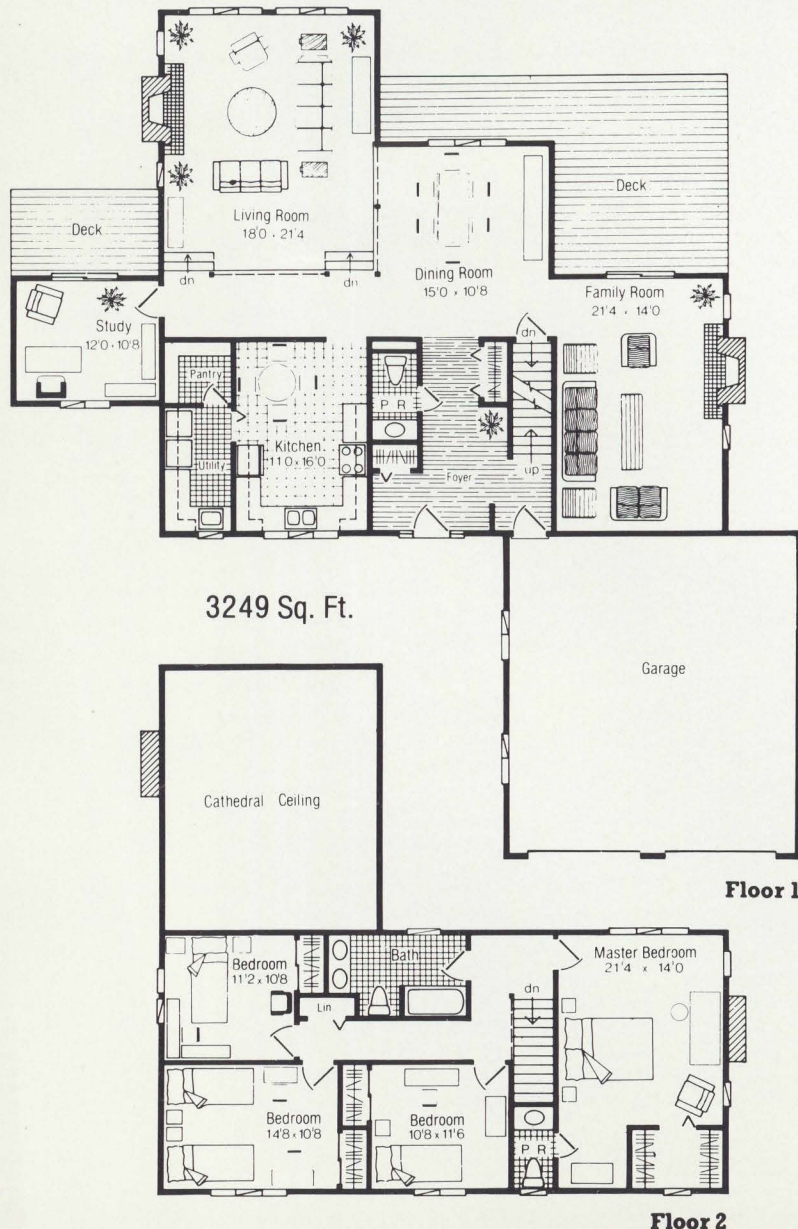
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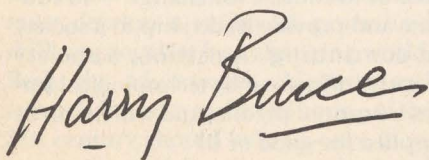


For any magazine editor, choosing an eye-catching cover illustration is a routine crisis. Often, everyone in the office gets in on the discussions, which range from amiable to heated. The mighty newsweeklies, such as *Time* and *Newsweek*, sometimes design three covers for a single issue, and make their final choice according to which story is hottest at the last minute, and guesses about what the opposition magazine will do. This exercise, which as often as not still results in competing magazines featuring the same cover story, costs big bucks; and a magazine like ours can't afford such luxurious fun. Still, we have our moments.

We decided in November that Dal grad Donald Hill, a pioneering heart surgeon, would be our cover story in this issue. Trouble was, the place where he was making medical history was San Francisco. We knew, however, that he was coming home to Dalhousie to deliver a lecture in the Student Union Building; and that, although his schedule was as tight as that of any royal visitor, he might be able to squeeze in a few minutes for our photographer.

The photographer was Michael Creagen, and we chose him because we liked his spooky portrait of Dal's vampire authority, Dr. D.P. Varma, in our Fall issue. We told Creagen he'd have no time to set up Hill in an operating room, wearing a surgeon's smock, Creagen would just have to do the best he could in the minutes he had with Hill. His best was better than anything we expected. Creagen borrowed a model of a human heart from the Victoria General Hospital, carted it over to the SUB, handed it to Hill, and said, "Fool around with this for a minute or two while I knock off a few photos."

The result is what you see on our cover. We think it perfectly expresses the zest for life that characterized Hill's performance as a whiz hockey player for Dal three decades ago, and has since inspired him to become one of the world's great heart surgeons. About this cover, there was no debate at the *Dalhousie Alumni Magazine*.



DALHOUSIE

A L U M N I M A G A Z I N E

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13 Special report: Atlantic Canada's future in the information economy

To mark the formal installation of Dr. Howard C. Clark as the ninth president of Dalhousie, the university sponsored a two-day symposium on the possible impact on Atlantic Canada of "the information revolution in the post-industrial society." Here, in a 13-page package, we offer condensations of six of the more provocative addresses at this historic Dal conference

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Dalhousie Alumni Magazine is the official periodical of the Dalhousie Alumni Association, and appears three times a year. Deadline for the next issue is June 1, 1987. Send material to: Alumni Office, Dalhousie University, 6250 South Street, Halifax, N.S. B3H 3J5; or to Public Relations Office, 5th Floor, the Killam Library, Dalhousie University, Halifax, N.S. B3H 3J5.

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Volume 4 Number 1



(Carlos photo)

A creed for our entry into the 21st century

By Dr. Howard C. Clark

To mark the formal installation of Dr. Clark as president of Dalhousie, the university sponsored a public symposium on Atlantic Canada's future in the information economy (see page 13). His convocation address was a fit conclusion to this challenging conference

Should the nature of the university evolve in order to play its proper role in the society of the 21st century, and if so, how? To answer that, one must first be able to describe the world in which the university will then exist. There is no doubt that Canada then will be very different from today, and that technology will be an even more dominant factor in society. But can we predict *what* technologies? Can we describe *how* a variety of technologies, and our societal absorption of them, will have transformed the economic, social and cultural fabric of our society? A number of exciting and sometimes very worrisome descriptions of the future in the information economy have been given to us in the past few days. But such predictions can con-

sider only information technology or other technological advances of which we are *now* aware, such as biotechnology or the new technologies emerging from materials science.

New technologies are emerging increasingly rapidly. It was only in 1972 that the first recombinant DNA was created. The first biotechnology company was established in 1976, and it is predicted that by 1995 world sales of biotechnology products will reach \$180 billion annually — all in 23 years.

But when we gaze into the crystal ball, it is not one or two known technologies whose impact we are trying to predict. Instead, it's the compounding effects of many technologies, most of which have not been conceived. Indeed, our inability to predict the future in a

comprehensive sense is matched only by our reluctance to take to heart the lessons of the past! As Peter Magrath of the University of Minnesota has so plainly put it: "He who lives by the crystal ball will soon learn to eat glass."

All that we can say about the future is that it will be dominated by rapid change, driven by currently undreamed-of technologies. The future task of the university, and a formidable task it is, will be to educate for change — to educate and provide leadership to a society in continuing transition, a society greatly influenced by technological forces we cannot predict, and which can be applied for good or ill

We cannot suggest in any detail the role the university should play. At best we can suggest how the university

should behave in the 21st century world of change. Let me describe what I think must be three characteristics of our behaviour.

The first requirement, and perhaps the most important, will be to "stay close to each other" — to re-establish the university as a living, vital, interacting community. Thoughtful analysis of our present state can only confirm the views expressed years ago by such writers as Oppenheimer and Leavis. Writing more than 20 years ago, Oppenheimer argued that "Science by itself will self-destruct." We increasingly recognize that knowledge is now dispersed among tiny, international, specialized groups in the universities; that, as knowledge is produced ever more rapidly, the number of such groups increases; and that very little of this specialized knowledge finds its way into the common stock of our human knowledge. As Winchester has put it, the consequence is that: "Our knowledge of the good and the beautiful has been incredibly enfeebled. Yet it is as a centre of vital knowledge, as a centre of common knowledge of the good and the beautiful, that the universities must make a contribution in the 21st century and beyond, if 'Science is dead' is not to become a slogan in that century."

Is there indeed hope that we can regain a vital sense of community, of common knowledge, within the university? Two things give me encouragement. Firstly, I sense growing recognition, which we must encourage, that the technologies of the late 20th and early 21st centuries are going to be multidimensional, multidisciplinary. To be associated with them, to be at the forefronts of understanding of them and of their impact on our societies, narrow, specialized knowledge will be insufficient. Increasingly, the narrow specialist will find it necessary to work in closer association with others, to work in a community. Secondly, there is growing recognition that the best education we can provide for the non-predictable world of the 21st century, must have both depth *and* breadth and must develop a variety of generalized skills appropriate for a changing world. Both the educational objectives and research interests of the Dalhousie of the 21st century should help us once more assert the unifying, community-based nature of the university.

If the first requirement of university

behaviour in the 21st century is "stay close to each other," the second must be "stay close to the customer." The university exists to serve society, and the community *is* our customer. In the next century the rapid rate of change will require us to be very close to our community, if we are to serve it well. Not only must the doors of the university be genuinely open, but also the boundar-

ies between the university and society must become diffuse. We must reach out through a variety of educational processes — using a variety of technologies — to extend the range of educational opportunities well beyond the boundaries of the university.

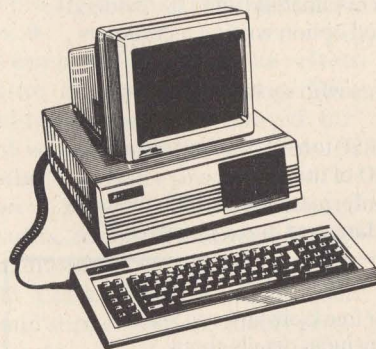
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and (with appropriate safeguards) be closer to the marketplace generally. We should also develop approaches whereby resources of the university can be made accessible to the community, so that Dalhousie can be a more effective partner in community development and in addressing social issues. Indeed, as a vital part of a rapidly changing society, Dalhousie will need to keep under review — and probably to redefine from time to time — the nature and extent of its relationship with our community.

Finally, the Dalhousie of the next century must "stay a leader." There are many facets of leadership, but it certainly includes integrity and moral leadership. We must remember continually that the purpose of learning is, as Robertson Davies said, "to save the soul and enlarge the mind." The much more critical and perhaps typically pungent way in which Margaret Fulton, former president of Mount Saint Vincent University, put it also deserves our attention:

"The university is but a small part of what it believes itself to be: we wrongly conceive ourselves to be the custodian of truth, the centre of society, the author of wisdom, the tutor of responsibility. Nor do we do, beyond conveying substantive knowledge and teaching verbal and mathematical skills, many of the things we believe we do: we mistakenly believe we foster intellectual integrity, wisdom, maturity, and human sympathy towards individuals. We simply do not effect any ascertainable change in those dimensions of the human personality associated with excellence of personal character. Is it any wonder there is concern about values in higher education?"

Whether or not we agree with that totally, the call for leadership is a strong one. As we enter the 21st century, increasingly influenced by a variety of technologies, the difficulty of the choices society will have to make will increase. The university, with its understanding of the nature and scope of research and scholarship and technology, with its primary function of educating the next generation, has a unique responsibility to provide leadership.

We *must* produce graduates in whom we have carefully and consciously nurtured the ability to make mature moral judgements. We must, as a university, consciously and deliberately play our true role as a forum, a neutral constructive forum, where the

substantive social and economic issues of our time — especially those arising from technologies which have often been derived from the results of university research — are thoroughly and constructively debated. Our task is not to define the solution, but to contribute to the social process of arriving at a resolution, to be an active and constructive participant, and to provide moral leadership as our society wrestles with fundamentally difficult issues in a technological age.

Our task is to be a leader.

Warren Bryan Martin of the Carnegie Foundation for the Advancement of Teaching has put it well:

“The best rationale for the type of university most needed now is not that it is a centre of basic research and sound scholarship, though it is; not that it is the place where professional skills are taught and careers launched, though those things happen there; nor that it brings general education, socialization and preparation for citizenship to otherwise benighted students, though it does provide these answers. The best rationale for the university is that it is the place where the most substantial

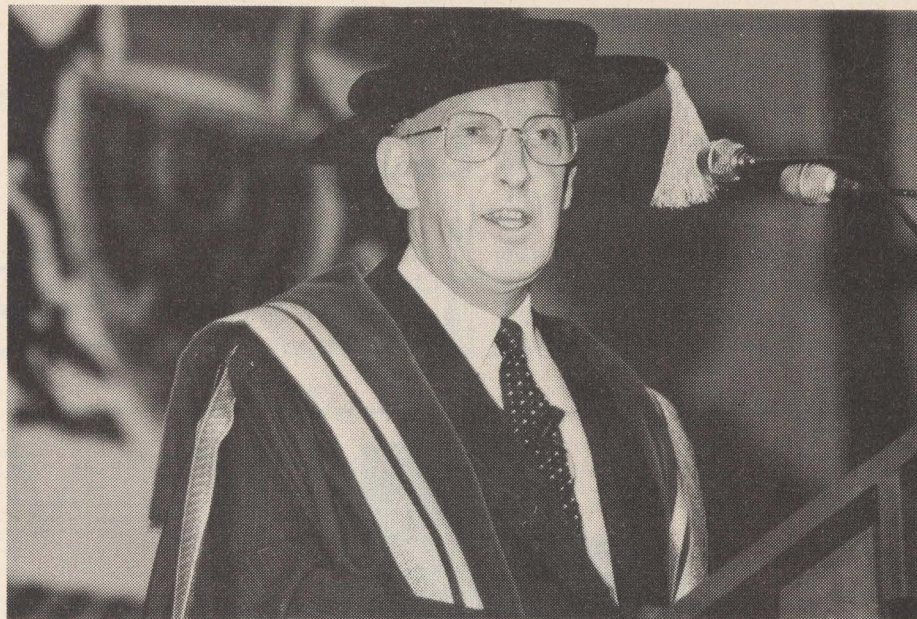
Dalhousie “must provide moral leadership . . . in a technological age”

issues of society — political, economic, social — receive sustained and disciplined attention; where contending theories and methodologies meet; and where prospects are best for the emergence of appropriate responses to these enduring challenges.”

Dalhousie must be that type of university.

Finally, I do wish to acknowledge with deep gratitude the considerable confidence which the board of governors and senate of Dalhousie have expressed in me. I hope it does not turn out to have been too much of a risk! I am excited by the possibilities and opportunities ahead of us, and in undertaking these responsibilities I commit myself to the task of ensuring that over the next years Dalhousie will:

- Stay close to itself.
- Stay close to its customer.
- And stay a leader. □



(Carlos photo)

Now it's official

Before hundreds of well-wishers at a special convocation, Dr. Howard C. Clark formally takes office as president of Dalhousie

Universities must provide leadership — to graduates and to society — as new technologies unfold in the decades ahead, said Dr. Howard C. Clark, who was formally installed as Dalhousie's ninth president on Nov. 9.

In a ceremony rich with the velvets and satins of academic regalia, New Zealand-born Clark was prayed for, wished wisdom, and offered advice from other university presidents.

Before academics, politicians, business leaders, contralto Maureen Forrester, and hundreds of well-wishers, 56-year-old Clark doffed a plain black gown and slipped into the stately presidential robe — full-length and decorated in royal blue and gold.

In a clear voice that rang with his New Zealand accent, the president repeated the declaration of office, promising to “promote the welfare of the university and the members thereof.”

After acknowledging greetings from the Association of Universities and Colleges of Canada, the Association of Atlantic Universities, Dal's faculty, non-academic staff, students and alumni — each time with a tip of his gold-tasseled mortarboard — Clark

strode past the colorful mass of stage guests at the Cohn to the podium, where he outlined the Dalhousie he sees stretching into the 21st century.

He left no doubt that Dalhousie must be a leader and educator, one that society can turn to with confidence in the increasingly technological era ahead:

“Our task is not to define the solution, but to contribute to the social process of arriving at a resolution, to be an active and constructive participant and to provide moral leadership as society wrestles with fundamentally difficult issues in a technological age.”

Clark said universities must re-establish themselves as communities where people work together. He said educators must move away from providing narrow and specialized knowledge and lean toward offering a varied education with generalized skills more appropriate for reacting to the unknown influences of technology.

Universities would have to reach beyond academic boundaries, opening their doors to the community so that they “stay close to the customer.”

The president called for new links with business and the marketplace.

Throughout his speech, Clark painted Dalhousie as a leader. Graduates, he said, must leave the university with the ability to make mature moral judgments. And the university itself must be a neutral forum where social and economic issues can be constructively debated.

In his first formal task as Dalhousie president, Clark bestowed honorary degrees on long-time public servant Zilpha Linkletter and renowned Cana-

dian artist Christopher Pratt.

He said it was an honor to share the platform with such notable Canadians who "typify so well the accomplishments and qualities that have brought distinction and recognition to so many from Atlantic Canada."

Only the second Dalhousie president ever selected from outside Nova Scotia, Clark called for the support and participation of everyone in the university community. — June Davidson

Dalhousie honors great psychologist, Donald O. Hebb

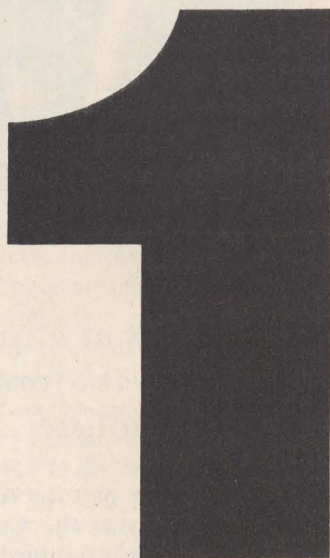
The university will honor the memory of Dr. Donald Olding Hebb, alumnus and former professor at Dalhousie and one of Canada's greatest scientists, with a special prize for graduate students. The D.O. Hebb Post-graduate Prize, established by the psychology department, will be awarded to students pursuing higher degrees in psychology who have demonstrated the potential to make significant scientific contributions to the field.

Hebb was one of the most influential psychologists of the 20th century. Born in Chester, N.S. in 1904, he spent most of his 81 years doing what the American Psychological Association (APA) called "creative, insightful theorizing, and ingenious experimentation, on psychology's fundamental problems." His research ranged over the fields of perception, learning, motivation, affect and thought.

A graduate of Dalhousie (BA, 1925), McGill (MA, 1932), and Harvard (PhD, 1936), Hebb held post-doctoral appointments at the Montreal Neurological Institute with Wilder Penfield, and at the Yerkes Primate Centre with Karl Lashley. He took a faculty position at McGill in 1947 and two years later published his influential book, *The Organization of Behavior*, which advocated the importance of the integrated study of the brain and behavior.

In the two decades that followed the publication of his book, Hebb's influence on psychology was immense. His department at McGill became an international centre for neuro-psychological research. His studies of perception, thought, and sensory deprivation, along with his cell-assembly theory, stimulated important developments in these fields.

In 1977, Hebb returned to Nova Scotia, joining Dal's psychology department as an honorary professor. He died in the summer of 1985. For more information on the D.O. Hebb Post-graduate Prize, call (424-3417) or write to the chairman of the psychology department. □



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He's got a lot of heart, and he's making medical history

J. Donald Hill was more interested in hockey than medicine when he enrolled at Dal 30-odd years ago, but now he's one of the world's leading thoracic surgeons, and a pioneer in the building of an artificial heart that may soon save countless lives

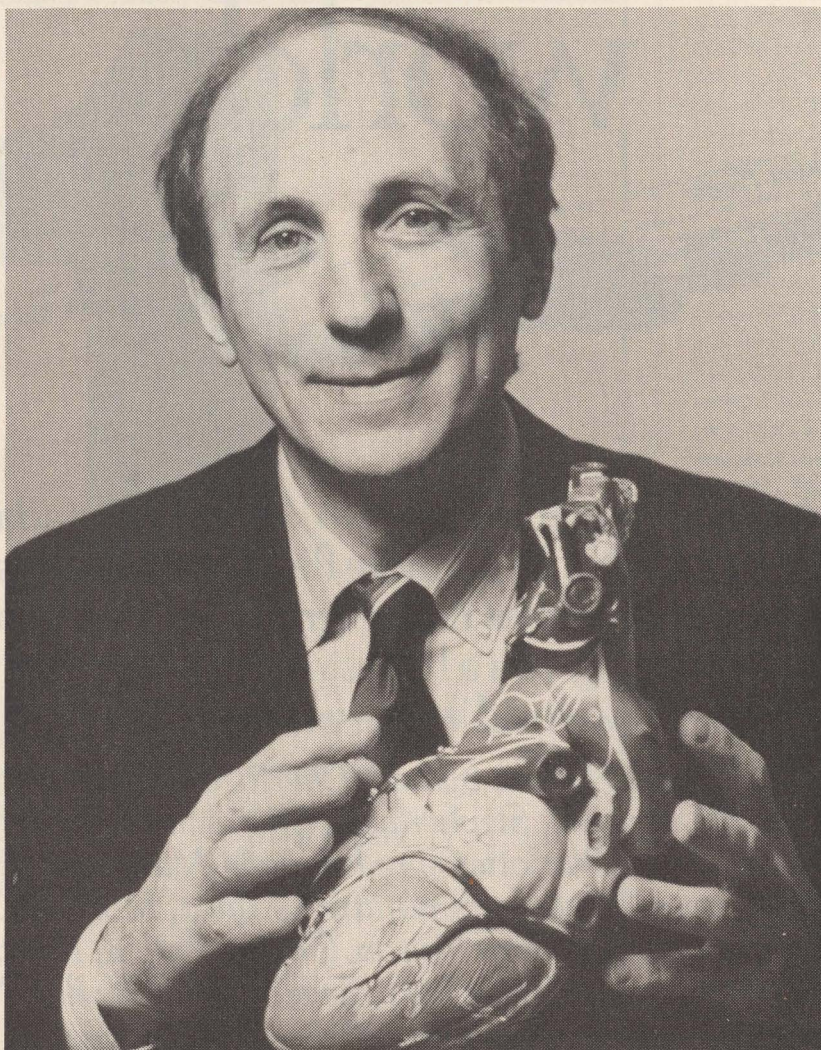
by Harry Bruce

If far-flung alumni who attended Dalhousie in the late '50s were wondering what in the world had ever happened to medical student and *Tiger* hockey star Donnie Hill, they got their answer on January 8, 1985. For that was the day a story that named him broke round the world. It was about a boy's gift from beyond death saving the life of the girl he adored, and Donnie Hill — 26 years out of the Dalhousie Medical School, 28 years after he won Dal's Climo Trophy for athletic ability, sportmanship, and team spirit — was the California surgeon who delivered the gift. It was the boy's heart, and Dr. J. Donald Hill installed it in the girl's torso.

She was Donna Ashlock, a freckle-faced 14-year-old who liked bicycles and basketball. The boy was Felipe Garza, 15, who liked break-dancing and Donna. They were classmates in a farming town southeast of San Francisco, but he was

not her boyfriend, as press reports claimed. He just adored her — and he knew she needed a heart transplant. Felipe appeared to be in perfect health, and his mother did not take him seriously when he said, "I'm going to die so I can give my heart to Donna." He hadn't told his parents about his recent headaches and blackouts.

Then, as *Newsweek* reported, "A blood vessel burst in Felipe's head; he was brain dead before he reached hospital. Hours later his family carried out Felipe's wish by donating their son's heart to the girl he loved. 'If it weren't for Felipe, my



That's a heart model. Hill works with the real thing (Creagen photo)

daughter would also be dead,' said Raymond Ashlock, after the transplant operation at a San Francisco hospital. 'He's a hero.' "

But he was not the only hero. For it could fairly be said that Donna Ashlock owed her life not only to the heart of Felipe but also to the hands of Donnie Hill, and to the medical team he oversaw as chairman of the cardiovascular department of the Pacific Presbyterian Medical Centre in San Francisco. Back in Halifax recently — he comes home a couple of times a year — Hill said, "The romance they had was a little exaggerated. He was infatuated with her but they weren't a solid couple." But the odds on what had happened were "millions to one," and Donna had been incredibly lucky. Felipe's heart was the right shape and size for her, and their blood types matched.

The story was so dramatic it inspired head-writers to celebrate Felipe with such tributes as "Boy gives girlfriend gift of life" (*The Mail-Star*, Halifax); "Teen gives love his heart" (*The Daily News*, Halifax); "Gift of the heart" (*Time*); "The ultimate gift from the heart" (*Newsweek*); and "Felipe Garza could not win Donna Ashlock's love but he gave her his heart" (*People Magazine*). On January 22, only two weeks after Hill's operation on Donna, she went home to Patterson, California, and the media heralded her release from hospital. She carried a bouquet of balloons, and two teddy bears, and her T-shirt proclaimed, "I left my heart in San Francisco."

"Donna went back to school a month after her operation," Hill said last September. "She has been readmitted on one occasion with rejection, which was expected, and she underwent normal rejection therapy successfully."

But the operation on Donna was not the first time Hill helped make big news at Pacific Presbyterian Medical Centre. In the world of heart surgery, which some criticize for the "Roman Circus" publicity it generates, Hill's stature is such that he's one of the few surgeons the big-time media regularly call upon for comments. A few weeks before the Ashlock operation, for instance, *Time* asked him what he thought of the highly controversial case of "the dark-haired infant known as Baby Fae." She was the baby who survived for 21 days after Dr. Leonard Bailey of Loma Linda University Medical Centre, California, had replaced her diseased human heart with a healthy baboon's heart. "This has been a success," Hill assured *Time's* millions of readers. "They have demonstrated that there is a window early in life where the opportunity to make a successful transplant from a baboon to a human exists."

He is probably best known as a pioneer in the development and use of a gadget called a "left-ventricle assist device" or LVAD. It's a fist-sized, pneumatically driven machine that pumps blood to sustain life in a heart patient during the search for the right human heart for a permanent transplant. "Less radical than the total artificial heart implanted in the late Barney Clark in 1982," *The Wall Street Journal* says, "LVADs are pumps installed piggyback with the sick heart still in place. They beat in synchronization with the heart's left ventricle, the key pumping chamber, increasing the power of the blood's circulation."

"Partial Artificial Heart Used as 'Bridge' for a Transplant," said the headline over a *New York Times* story in September, 1984. Hill had used an LVAD to keep 47-year-old Ronald Meehan alive till a good heart could be found for him. Meehan had suffered a massive coronary, and when he arrived at the medical centre he had only two hours to live. "Dr. Hill implanted an LVAD produced by Thoratec Laboratories Corp. of Berkeley, a company he helped found and holds equity in," *The Wall Street Journal* reported. "Linked to an air-driven power system at Mr. Meehan's bedside, the pump was worn outside his chest for 2½ days until a



Hill played centre on hot Dal teams of the late '50s

donor heart was located." The donor heart was that of a 28-year-old victim of a Los Angeles mugging; and before long Meehan was back home in Sausalito, California, planning his future.

"It was a little-noticed operation, but San Francisco surgeon J. Donald Hill was making medical history," *The Los Angeles Times* reported (though, in fact, the operation had been widely celebrated). "Hill became the first to successfully use an LVAD to sustain the life of a dying heart patient awaiting a human heart. Hill's achievement was in part the culmination of a goal almost two decades old. It meant that a patient desperately in need of a new heart did not have to die because no heart was immediately available. Instead, an artificial pump—the result of a nationwide research effort that has taken 15 years and hundreds of millions of dollars to produce—was used as a stopgap until a transplant could be performed . . ."

Two years later, in September, 1986, Meehan was leading a fairly normal life. He was a part-time consultant in the travel industry, and another of the Dal-trained surgeon's more famous patients, Richard Dallara, was up in northern California with a part-time job as an outdoor guide. Only 11 months before, Dallara, then 33 and dying of heart disease, had served as the first patient Hill treated with not one but two mechanical pumps. They kept him alive for four days, long enough for Hill's team to come up with a donor heart. With respect to the transplant, Hill said, "We took our time and everything went perfectly."

In October, 1984, Jon-Erik Hexum, star of the television series *Coverup* killed himself while fooling around with a .44 Magnum on the show's set, and Hill was the surgeon who implanted the actor's healthy heart in another man. The recipient, Hill said in Halifax last December, "couldn't be more thrilled. It's as though he has taken on the image of Jon-Erik Hexum." The first person ever to undergo a heart transplant in San Francisco was 54-year-old businesswoman Jane Falconer, in early 1984, and again the surgeon was Hill.

"That was the beginning of the heart-transplant program here at the Pacific Presbyterian Medical Centre," Hill told the *Dalhousie Alumni Magazine* last September. "She died last month due to an infection that could not be controlled. This was two and a half years after her original implant. The first-year survival rate for heart transplantation is about 80 percent, and the five-year survival rate is about 50 percent. In our first ten transplants we had a 100-percent rate . . . We have done 28 transplants with an 84-percent survival rate."

Born in Halifax in 1936, Hill grew up at what was then 58 Dutch Village Road, on the site of the first zoological gardens in North America; and attended Sir Charles Tupper School, Cornwallis Junior High, and Queen Elizabeth High School. While still in grade 11, he won a scholarship to take pre-med at Dal, and he was only 22 when he graduated from the medical school in 1960. In his undergraduate years, he recalls, "I was



Hill recently returned to Dal to lecture at the Student Union Building. Here, he's with President Clark, and student union executives Sandra Bell and Jamie MacMullin

heavily influenced in the direction I decided to go by professors George Wilson in history, and George Grant in philosophy, although I was probably the worst student Grant ever had. This was my first encounter with independent thinking, and going against the tide.

"In medical school . . . I was heavily influenced by Dr. Robert C. Dickson, who made medicine interesting, and Dr. Benge Atlee, professor of gynecology and obstetrics, who made it exciting. He had a great curiosity about life and medicine, and instilled that excitement in young medical students."

What Dalhousie sports fans of the late '50s remember best about Hill was his career as a star forward on the varsity hockey squad. "Hill has been Dal's driving spark up front all year," Hugh Fraser reported in *The Dalhousie Gazette* (March 5, 1958). The team would be "hard-pressed to find another player with his competitive spirit and ability." Hill also played for the Berwick *Apple Kings*, and helped them win the Maritime Junior Hockey Championship. In one game in the final series, he picked up four goals and three assists.

"You remember how the fans at the Montreal Forum would all stand up and start to roar whenever 'Rocket' Richard got the puck in his own zone and started up the ice?" asks Halifax lawyer F. B. (Ted) Wickwire (BCom '59, LLB '62). "Well, that's exactly the way Dal fans reacted when Donnie led a rush." More than a quarter century after Hill wowed *Tiger* fans, he told an acquaintance by mail, "When I was at home at Christmas, I met my old hockey friends, and I almost went out and played a game with them, in full

gear, but at the last moment I decided it was not really a smart thing to do. I hadn't played for so long, and can't really afford to break my arm or something similar."

In his final years at Dal, he found scalpels more intriguing than hockey sticks. He interned at the Victoria General Hospital, Halifax; served a stint as assistant resident in surgery at Cincinnati General Hospital; spent a year as a research fellow at the thoracic clinic of a hospital in Sweden; and by 1964, at age 27, had a fellowship in cardiovascular surgery at the Pacific Presbyterian Medical Centre. He's been there ever since.

"At that time in 1964-65," he recalls, "I took on a job to do the animal laboratory evaluation of the membrane oxygenator before it could be used on patients." An oxygenator is a device surgical teams use to substitute for a patient's lungs during open heart surgery. It takes carbon dioxide out of the blood and puts oxygen back in. Traditional oxygenators in the '60s, Hill says, did that by bubbling oxygen through the blood. This was efficient, but it was also damaging to the blood. The *membrane* oxygenator, however, would reduce this damage. It would be a device in which "a thin membrane separated the blood from the gas layer, and the oxygen diffused through the membrane into the blood, and the carbon dioxide diffused through the membrane out of the blood." The membrane oxygenator's replacement of the old bubble type would prove to be "a major step forward in the safety of oxygenators."

Meanwhile, the medical centre found the membrane oxygenator useful not only during heart surgery but also in

the treatment of acute respiratory failure due to pneumonia or other causes of lung damage. If a patient's lungs could no longer exchange gases properly, the centre could use the membrane oxygenator for anywhere up to 21 days to give the lungs a chance to recover. This technique is called "extracorporeal membrane oxygenation" or ECMO, and Hill says, with a trace of pride, "We did the first successful case of ECMO ever in 1971, and opened the door to this kind of therapy for other centres. Since then, membrane oxygenators have continued to be perfected . . . They have pretty well totally displaced the old bubble oxygenators."

By early 1974, Hill was still only 37 but he was already earning blushing kudos from his peers. Recommending him for membership in the American Association for Thoracic Surgery, a New York surgeon called him "a thoracic surgeon of superb physiological and technical skill. . . . Dr. Hill has been the recipient of many extremely complicated cases, involving severe respiratory dysfunction, and it has been a privilege to see how he and his large team have dealt with these problems." Studies by Hill and his colleagues had been "well-designed and well-executed, and have resulted in absolutely solid contributions to our understanding of cardiac and thoracic disease and management."

Hill had "a high order of intelligence," matched by "an extraordinary capacity for hard work." Not only that, he was "a born leader," and also just one heck of a nice guy, "with a delightful sense of humor and a ready smile." Not surprisingly, the association offered Hill a membership faster than you could say "extracorporeal membrane oxygenation."

Less formal praise, though perhaps more grateful, often comes from those whose lives Hill has saved. Writing to the surgeon's father in Halifax, a San Franciscan said in October, 1985, "Another write-up about your illustrious son, Don, appeared in the paper today, and you may not have heard about it . . . Well! He's still doing real well, and was on TV again this evening. He's looking great And his open-heart surgery on me four years ago must have been a success, eh! as I'm playing better golf than ever. (I guess I'll have to give him some strokes, eh! if we ever play together — even if I'm 78 yrs. young.)"

Hill doesn't play golf. If he looks

almost as fit at 50 as he did when he was the darling of Dal hockey fans, it's probably because he loves walking as much as he hates driving. His Datsun is 17 years old, but he's driven it only 35,000 miles. He gets up at 6:15 a.m., and walks to work. He gets further exercise "by walking up and down the stairs in the hospital," and by walking home again around eight at night. On weekends, he amuses himself by riding his bike, and by hiking along the California coast "because it's wild, and very rocky, and pretty desolate in some places." He plays a fair bit of squash, too.

Halifax friends marvel over Hill's breadth of knowledge. "I spend a lot of time reading," he says. "I am a slow reader but I enjoy every sentence." He reads novels, mostly historical, and also books and articles about what's happening in half a dozen scientific fields. "It has been fun to follow the arguments that have been going on," he says. "For example, the disappearance of the dinosaurs has brought together geologists, archeologists, palaeontologists, and astronomers. It's a fascinating story, with lots of opportunities for speculation, and to sleuth history . . . I also like to spend time with people in other disciplines because they raise interesting questions about one's own work, and stimulate you to use different approaches when you're thinking about solutions."

The need to find solutions to looming problems in medicine is a major preoccupation of Hill's. Is medical technology developing faster than society can cope with it? Technologies are leaping ahead in such fields as "transplantation, artificial organs, artificial intelligence, biotechnology, genetic screening, reproductive technology, life preservation, life extension, and pharmacological drugs to affect memory and learning processes." All these new technologies, Hill believes, are challenging not only the economics of health care but also our ethical and religious convictions, our laws, and certain principles of our entire Western culture. Indeed, as U.S. philosophy professor Jacob Needleman has put it, "No greater social need exists than to understand how we are to have all the benefits of advanced medical technology while retaining the ethical and spiritual values that have defined us as a civilization."

Thus, Hill was one of the original and most forceful promoters of last September's remarkable, transcontinental, three-hour, video teleconference: "Who

Lives, Who Dies, Who Decides?" Sponsored by his employer, the Pacific Presbyterian Medical Centre, and moderated by Ted Koppel of ABC-TV, the teleconference brought together leaders in medicine, law, ethics, business and government to wrestle publicly with the grim and tricky questions that the march of medical technology has raised. From its Washington base, the show encouraged participation by Americans and Canadians who were tuned in at more than 100 sites from Halifax to Anaheim. It was this angle that inspired the press to call the event "a combination of 18th-century-style, town-hall democracy and state-of-the-

art technology" that gave people across the continent a chance to help shape health-care policies.

Remembering Dalhousie, as it was in a time before communications technology made such conferences possible, Hill says his life here fell into two periods: "At first, I was more interested in hockey than a scholastic career, but I quit hockey in my third year. By that time, medicine was really getting interesting, and it has grasped my interest ever since." Donna Ashlock can thank heaven for that, and so can a lot of other people, both now and in the future. In the case of Donnie Hill, hockey's loss was mankind's gain. □

Coming: artificial hearts that last, and last

Almost two decades have passed since Christiaan Barnard performed the first heart-transplant operation on a human, but it's only in the past five years that heart transplants have been declared a success. North American surgeons performed a mere 25 to 30 transplants per year during the '70s; this year will probably see at least 1,000. San Francisco thoracic surgeon J. Donald Hill — one of the most eminent graduates in the modern history of the Dalhousie Medical School — says heart transplantation is certainly a magnificent scientific achievement. "But," he adds, "if 35,000 to 50,000 patients need hearts every year, and we can put in only a thousand, that's not what you would call a tremendous public-health success."

The answer may lie in a compact, powerful artificial heart of the type that Hill and his California colleagues have been trying to perfect for at least a decade. In a recent letter to the *Dalhousie Alumni Magazine*, Dr. Hill explained the progress they've made:

"In the mid-'70s, our main contributions lay in developing the optimal size and shape of a prosthetic heart for use inside the body, and also in developing improved and durable pumping chambers that would not fatigue with time. (They have to flex 40 million times a year and last for five years: that is, 200 million flexions without cracking or breaking.) At the same time, the surface of this material, which comes into contact with the blood, cannot make the blood clot. The surface had to be blood-

compatible so that clots would not form on it, and then go off and give the patient a stroke

"In the clinical area, we began implanting them six years ago, and two years ago we did the first successful bridge to transplantation The patient was dying acutely from heart failure from a heart attack, and we implanted the prosthetic ventricle for several days until we could find a donor heart Since that time, we have done two other successful ones, giving us a total of three, and other centres in the U.S. are also doing them now.

"How soon is the world likely to benefit from a permanent artificial heart?

"The pumps themselves are quite good, although the Jarvick heart, which people hear the most about, has a problem in developing blood clots and throwing them off. Other pumps do not have that problem The thing that is delaying their use on a permanent basis is the development of the energy system that must be implanted inside the body. At this point, the energy systems are all attached to the patient outside the body, and are sometimes quite large, and don't lend themselves to what is usually considered a quality life. The final goal . . . is to be able to implant artificial hearts so that the patient will be able to live a fairly normal and independent life, and to work, play and enjoy life.

"That will be in perhaps five to eight years." □

Thank you



1986 ANNUAL FUND PRELIMINARY RESULTS

Medicine	\$124,900
Law	58,500
Arts & Science	41,500
Management Studies	22,100
Health Professions	21,400
Dentistry	12,900
Graduate Studies	3,000
Other	31,600
Area of Greatest Need	120,400
TOTAL	\$436,300

The Annual Fund Volunteer Committee thanks you for the resounding success of the 1986 Annual Fund. The response from Dalhousie alumni and friends has been overwhelming. Our target was \$408,000 and receipts were \$436,300. Although final results are not yet available, we have exceeded our 1985 total by an astonishing twelve per cent! Each Dalhousie student will benefit from the growth of the Annual Fund. Crucial programs and projects in every faculty will receive much needed support from the funds raised. It is wonderful to see that you, the alumni, take such pride in maintaining Dalhousie's "margin of excellence".

Thank you,



George Cooper
National Chairman, 1986 Annual Fund

Final Results \$481,000!

There's a revolution coming, and we'd better be ready

The revolution lies in information technology, robotics, and artificial intelligence, and as it gathers steam its potential impact on society becomes increasingly uncertain. To examine its implications — and to mark the formal installation of Dr. Howard C. Clark as the ninth president of Dalhousie — the university sponsored a two-day symposium entitled “Toward the Information Economy.”

Hundreds of Atlantic Canadians turned out to hear businessmen, bureaucrats, politicians, scientists, professors, and a distinguished journalist discuss how Atlantic Canada and Dalhousie should adjust to exploit coming opportunities and avoid threatening possibilities.

The journalist was Norman Macrae, deputy editor of *The*

Economist. In his keynote address, Macrae struck a decidedly optimistic note, arguing that the time is not far off when information technology will enable Atlantic Canadians to work out of their homes, in their own beloved region, for distant employers. Others, such as Nancy Riche of the Canadian Labor Congress, were less sanguine. She warned that technology was already imposing on society “the structure of the pre-industrial era, when most people were servants.”

For Dalhousie, the symposium was among the most important gatherings of the decade, and on the pages that follow the *Dalhousie Alumni Magazine* offers chunks of the major addresses on “The Revolution in Knowledge: Atlantic Canada's future in the information economy.”

The third great technological revolution is good news for Atlantic Canada.

Here's why

By Norman Macrae

Macrae is deputy editor of The Economist, and author of The 2024 Report: A history of 1974-2024. He was the keynote speaker at the Dalhousie symposium, and said, "We are moving into an age where the prosperous areas will be the ones in which it is nice to live." It's nice to live down home

I will now proceed to say probably the opposite of what everybody else at this symposium is going to say, or has prepared.

First, the economic question. Is the capacity for economic growth going to continue, or accelerate, or slow, or collapse?

Answer: it's going to accelerate. Economic growth depends on (a) the advance of knowledge; and (b) whether we've got a tolerably sensible system for putting the advance of knowledge into productive effect.

As regards the advance of knowledge, we in the rich countries have increased real gross world product in each of the 20 decades since James Watt invented the steam engine in the 1780s. We increased it even during the four of those decades which we Europeans devoted mainly to trying to blow each other up. We have made this advance because of our increased knowledge, in each of those 20 decades, over energy and matter. To this has been added, in the past decade and a half, a breakthrough in the processing of information.

On our latest computers, on this single November day, any well-ordered researcher could test more mathematical correlations than Einstein could test in his lifetime. Even if places of research like universities turn too bureaucratic — and I sometimes fear that you might — this would be an unusual prelude to a period when research productivity abruptly slowed down.

Simultaneously, way downstream from the Einsteins, we littler people are



Macrae remains an optimist (Carlos photo)

just now becoming able to put a microprocessor into almost every machine, while biology is at this moment entering the economic system. Also, as maybe the biggest facts of our decade, the world's two largest countries, China and India, are now entering the open market. They will have a period of erratic, but eventually Taiwan-type economic growth. In this 1986, the world is almost certainly on the foreshore of the fastest period of market-driven economic development it has ever seen.

Do we know the right political system to handle this knowledge explosion? Yes. The best system for producing wealth is by getting politicians out of the way. Are we in the rich countries

going to vote to get politicians out of the way? I don't know, but I will tell you later why politicians should not matter so much by the year 2000.

Second big question. Is this new post-industrial revolution going to lead to an unprecedented switch of jobs and thus long transitional unemployment, and woe, woe?

Unprecedented? No, no. When my father was born in the late 1880s over half the workforce in both the United States and Britain were in three jobs: agriculture, domestic service, and jobs to do with horse transport. Today only three percent are. If you'd told that to the more affluent — and worthier, because more socially conscious — of my Victorian grandfathers, he'd have wailed that 60 percent of Britons were fit only to be skivvy housemaid, farm laborer Hodge, and sweepers of horse manure. Into what occupations would the poor descendants of these people possibly go?

Well, in Britain a housekeeper's granddaughter has quite an interesting job; she is prime minister. A farm laborer's son called Rutherford split the atom. And I have only recently discovered that my other Victorian grandfather was for a time a road sweeper, but today I distribute worldwide a finer type of horseshit.

Unlike in the 1880s, it is rather easy in the 1980s to see whither the job switches will go. They will go from hands-on production workers to information workers. Hands-on production workers are people who have to go to a workplace to lay their hands on something

other than a keyboard or a piece of paper. They include people who stand on factory assembly lines, or drive lorries, or pilot aeroplanes, or make or serve food or other goods.

By contrast, information workers are those who create, process or (most usually) distribute pieces of information. They include bankers, biochemists, lawyers, teachers, most salesmen, all software writers, all researchers, actually most brainworkers — a category to which even top managers and top bureaucrats should intermittently belong. In the 1950s in North America and west Europe, 70 percent of employed people were production workers and 30 percent information workers. Now, that ratio is very abruptly turning nearly the other way round. Astonishingly, it was only in 1979 that garment-making was replaced as the biggest export industry from New York City. It was replaced by lawyers' services.

Most of us in this room are or will be information workers, and a colossal thing is going to happen to us in the next 20 years. We won't need to live near our workplaces. That's thanks to the third transport revolution. The first century of industrial revolution after 1780 was based on the transport revolution of steam and the railways. As the railways spread across Britain the first Duke of Wellington, he of Waterloo, expressed his disapproval. "My lords," he warned, "these things will enable the working classes to move about." That was very shrewd of the old boy.

The railways broke up the previous system whereby the yokel was so immobile that he had to be constantly subservient to the most powerful big employer in his district, a system that had been nice for dukes and the very upper classes, but for nobody else . . .

The second transport revolution, dating from the horseless carriages patented by Karl Benz and Gottfried Daimler exactly 100 years ago, was that of the internal combustion engine. Seventeen years later, in 1903, their company, Mercedes, deduced that the top worldwide market for the automobile would be about one million; it seemed unlikely that more than a million working-class folk across the world could ever be trained as chauffeurs. This is an example of how we underestimate the transport revolutions that come along, and most people are doing it again at this moment.

Dating from these 1980s, we've got this third, and by far the biggest, transport revolution — of telecommunications allied to the computer — where cost and instantaneity are not going to depend on distance. So in the 21st century an information worker — say, a market researcher or investment banker — will be able to live on the beach at Tahiti if he wants to, and telecommute daily to the computers and other colleagues in the New York or Tokyo or Toronto or Timbuctu tax-haven office through which he works.

Coincidentally, this new mobility, which is appearing because telecommunication makes information a weightless commodity, is arising just when even the manufactured artifacts of the new industrial revolution are

"We will vote more frequently with our feet. If politicians try to boss us, brainworkers will go away and telecommute from Tahiti or Dalhousie. Countries that choose to have too high government expenditure, or too fussy regulations, will be residually inhabited mainly by dummies"

becoming very light and transportable. All the semiconductors produced in the world last year could have been carried across the world in 14 Boeing airliners.

The regional implications — and Atlantic Canada, hear this — are that wealth and jobs will move to the places in which it is nice to live. In the United States ten years ago, the move was said to be to the sunbelt, but it's also been to tree-lined towns in New England. In Europe the Mediterranean is our sunbelt, but I'd also buy property near the golf course in St. Andrews, if I were you.

And I say that this should be an advantage for Atlantic Canada, rather than the reverse. In this autumn of the horseless-carriage's suburban commuter age, I understand that one of Nova Scotia's sorrows is that your young

people flock to have more elbow room for careers to cities like Toronto, but that one of Nova Scotia's prides is that many of them sensibly say that life was nicer to live in the pleasant communities back here. The meaning of the telecomputer age is that Mahomet won't have to move to the mountain of job opportunities, because that mountain will move to the places where Mahomet finds it nice to live.

One important feature of a successful telecommuters' centre will be to have a good university. Before you start cheering, however, let me say that it will have to be a different sort of university from any university today. I don't think it will be mainly a place for locking 19 to 21-year-olds into exam-taking . . . I suspect universities will have to be integrated into a community of telecommuters. The teaching function will largely consist of more mature students playing into the database, a database kept up to date in each subject. Some will be searching there for ideas for new products, but a lot will just be updating their knowledge. It is often said that 90 percent of all scientists in all the history of the world are alive today. This means that any scientist of my age belongs to the one third of most old-fogey and out-of-date scientists the world has known.

I think the research function in universities will become much more international — not with little teams in each university researching some particular project, but with everybody putting research results into a common database pool across the world, and dipping into others' contributions to it. No doubt some faculties will become centres of excellence. A good centre of excellence here will include a faculty specialising in how and why small and highly educated societies can work in the telecommuting age. The scholars might then have to come physically to study in it . . .

University students can themselves become telecommuters. A lot of the students who enrol in even the most famous universities like Harvard may live in Hawaii, and just telecommute into its database and with tutors there. This means that universities are going to become more competitive with one another. I'm afraid I also think that university finance will come much more from fees, local business sponsorship, or local telecommuters' sponsorship than from government money.

Indeed, one of the most dramatic developments of these next several decades — a dramatic development for everybody and not just for universities — will be a massive decline of the importance of government.

The recent period of over-reliance on central government has been a peculiar one in human history. We now pretend we can change our lives by voting one Tuesday or Thursday every four years on whether Mr. Reagan or Mr. Mondale, Mr. Mulroney or Mr. Turner, whether what I call Mr. Thatcher or Mrs. Kinnock, is temporarily putting on the tribal manifestation which at the moment annoys us less. We then allow these people to spend half our money for us, and to boss us about deplorably. In future, we will vote more frequently with our feet. If politicians try to boss us, brainworkers will go away and telecommute from Tahiti or Dalhousie. Countries that choose to have too high government expenditure, or too fussy regulations, will be residually inhabited mainly by dummies

Products and industries will become obsolete in a much shorter time. Indeed, this is happening already By the year 2000 an innovator will put on the database any improvement he can see to any existing product. He'll send computer-aided design details and computer-aided manufacturing details of the prototype over the database, and the prototype will often be bought from that database (not put first into metal) because the buyer will be able to learn from the computer what it will do.

When that product reaches the supermarket, most of the purchases will be made by credit cards, and people will get rebates on credit cards if they agree they should take types applicable to the particular groups to which they belong With the aid of the new databases, and of the new credit cards, far more information will become available about what sorts of people buy each product, in response to what advertising slogans, at what price. The retail trade must expect to be integrated ever more closely into the swelling information industries.

What of the manufacturing industries? Will they be small firms, or small firms within big ones? I incline to the latter view, but I don't make myself popular with corporate vice-presidents when lecturing to big firms about it. I tell the head man that the proper future

managerial structure for the big company is himself as boss, doing rather little work, preferably telecommuting from Tahiti. Then, under him, there would be perhaps five divisional chiefs, telling the chap in Tahiti what they've introduced that's new and (more important) what they have specifically killed while still at a profit in the past month. Then, under them, everybody down to the newest schoolchild who's joined the firm will not be seeking to rise to become a corporate vice-president, but will be seeking ways to run her or his own small business, under the big firm's umbrella, with share options and other intrapreneurial rewards.

I think all very temporary company presidents will in future have to run big businesses through small intrapreneurial and competing profit centres. My guess is that the right size for a competing profit centre is very small, not more than 10 or 11 people, however dynamic your own top management. Jesus Christ tried 12, and He found that one too many.

While all the successors of us brainworkers with our present jobs are telecommuting from Tahiti, what's going to happen to the 30 percent with hands-on production jobs? Well, actually they'll be the same people. Wise youngsters will take hands-on jobs to draw wages while they're playing into the database to find or research the brainworker's job they want. They will often do this research through telecommuting into the home area where they want to return to live, which provides another future task for you at Dalhousie. The hands-on manufacturing jobs will be near the main markets, but components will be made in the cheapest workshops, especially in the cheap workshops of India and China. I'm afraid the rule for manufacturing concerns will be sub-contract, sub-contract, sub-contract. Then you don't have to give redundancy pay when a particular product quickly fails

The Soviet Union's internal system isn't working; and I don't think it will outlast this century. Some time in the next 15 years I think it likely that Soviet Russia will do a Deng Xiaoping, and dash for freer markets and detente. Every economically sophisticated 40-year-old in Russia, and there are a lot, knows that his country is in much the same state as West Germany was about 1948: a very

educated people but with supplies hopelessly entangled in black markets, because there is no nexus between the things that people most want and increased supplies of them.

Russia and east Europe today actually have a larger proportion of doctors, scientists and engineers in their non-agricultural workforce than has the United States. They have twice as many university graduates engaged in R and D as does Japan. Yet from these superb inputs they get such stupidly low outputs that, compared with the USA and Japan, only one seventeenth as many Russian families have motor cars. If the Russians did the sort of dash for freedom from controls that the West Germans did in 1948, they could have a post-1948-West-German sort of economic miracle

I'm often told I'm too optimistic. I reply that's what a 63-year-old like me finds it logical to be. Let me end by explaining why. For the first 23 years after my birth in 1923, everything was going appallingly wrong for suffering humanity, and for the 40 years after that almost everything seems to me to have gone almost unbelievably right. Perhaps I had an odd adolescence. My father was British consul in Moscow in 1936-38. As a teenager, I had two summer holidays from school in Moscow at the height of Stalin's purges. Friends who were Russian members of the embassy staff — including fellow teenagers, like some of the maids — were disappearing, probably to be shot. Before and after 1936-38 in Moscow, my father was a British consul in Germany, and then in Nazi-dominated Rumania. Because the family's interests were literary, many of our friends were Jews. The same terror stalked.

Then when I left school in 1941, my first job was a public-sector one, with the usual public-sector productivity — of minus something large. Actually, I trained for it in Canada, in Rivers, Manitoba, and the only previous time I saw Halifax was when leaving to go back to Britain to put that training into effect. Within a few weeks, I was a teenager throwing bombs about, briefly navigating an RAF bomber over Europe, creating a slum in the heart of my continent.

Although we were obviously killing mainly German women and children, it seemed righteous, because we already suspected there were Belsens down

below. But by late 1943, which was when I got there, the Russian armies were coming in from the other side, into the slum we were creating. All the politicians, including Churchill and Roosevelt, told us these Russians were fine and liberating democrats. And of course I knew from four brief school summer holidays that these were amazing lies. That has given me one advantage as a newspaperman. I've never since then believed a word either politicians or public relations officers have said.

Then, back from that mess to the supposedly more intellectual atmosphere of Cambridge University in 1945. More intellectual, my left foot. At one party in 1946 I talked to a middle-rank don with large vacuous specs who spouted what we would now call sub-Polytechnic Marxism.

This was Klaus Fuchs, lately back from New Mexico. He and others were at that time, out of genuine idealism, delivering from my own university the secret of the atom bomb to Stalin: a Stalin whose suitability for holding in his hands the delicate power to destroy the planet was not, in my view, well advertised by his desire to execute his doctors because they did not make him feel better on the increasingly frequent occasions when he went to bed mad roaring drunk.

That was our 1946. I don't know what I expected for the next 40 years. But here we stand, 40-memory-sodden-years on, and what have we done?

What we've done is octuple real gross world product. During this brief civilian working life of us returning soldiers from the Second World War, we have added seven times as much to the world's producing power as was added during all the previous millennia of *homo sapiens'* existence. This may help explain why some of us sound rather tired. It does not explain why anybody in this generation dares to be pessimistic.

I always like to end my pontifications with an anti-pontificatory story. My favorite at the moment has the advantage that it may even be true. One day in a recent summer the Lord Chancellor of England came hurrying out of the House of Lords, wearing the absurd black-and-gold robe and full-bottomed wig in which we still clothe the poor man. Down the steps below him a party of American tourists were being shown reverently around the palace of West-

minster. At the far end, the Lord Chancellor saw the Labor party's leader, Neil Kinnock, disappearing into the car park, and he needed to talk to him about some re-fudging of the timetable.

So the Lord Chancellor stood there, in his wig and black-and-gold robe, and he called to Neil Kinnock by his Christian name. Over the heads of the American tourists, he bellowed "Neil." Instantly, all the American tourists fell

to their knees.

A similar obsequiousness is not required with respect to all the forecasts I have shouted at you today. A small genuflection will suffice, toward such obvious points as that we are moving into an age where the prosperous areas will be the ones in which it is nice to live. And please, please, please, Nova Scotia, do determine to remain that way. □

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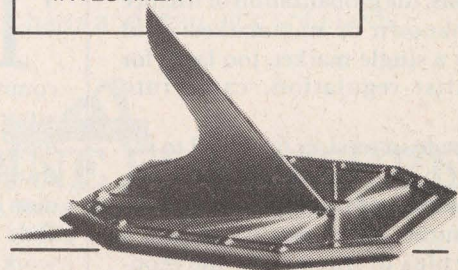
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Hustle the future. Let the past sleep

By James McNiven

McNiven is deputy minister, the department of development, Nova Scotia. The region, he said, could position itself well in the information economy — "But only if there is a will towards the future rather than a reverie about the past"

We make political myths about resource extraction and processing, and we are obsessed with gaining manufacturing facilities even though the numbers show us that these have almost nothing to do with the popular desire to lower the unemployment rate.

Big, highly automated goods-producing projects are highly visible and attract media attention and, hence, political attention, *even though they are nearly meaningless in terms of job creation*. Service growth is too incremental to attract attention, and is pejoratively felt to be dependent on goods-producing activities, so that neither media nor politicians do much more than pay lip service to the sector that has produced nearly all the net new jobs in the last decade and a half.

Perhaps this is fortunate. Ignorance about the transformation of the Canadian economy may keep the process from being messed up by well-intentioned people who are unconsciously trying to preserve the past. Further, increasing internationalization could be hampered before its global thrust really becomes strong. With some exceptions, the globalization of finance went unknown or unremarked until virtually a single market, too large for nationalistic regulation, came into being

Free trade in services is critical to the future of both Canada and the USA, though at present the USA is one of the few countries in the world running a trade surplus in this area of the economy. The trade talks, however, are almost totally dominated by controversies over production, and pricing of hogs and logs, and adjustments to the brewing and textile industries. Granted, these topics are of great importance

today, but arrangements with respect to services are of critical importance to tomorrow, when these possible agreements will have their greatest effect.

A Canadian economic strategy to deal with the transformation now upon us has to contend with four major domestic problem areas. The first is the need to recognize and deal with urban economic-development problems. These are often subtle, but relate to investments in communications and transportation in the urban area. As well, education and quality-of-life amenities are needed if Canada's urban areas are to attract the kind of footloose individuals who will be at the core of tomorrow's industrial development. The challenges facing economic-development officials with respect to footloose industries are nothing when compared to attracting footloose people. The example of the state of Texas assisting the University of Texas to find 32 \$1-million chairs in technology fields, and then attracting Admiral Bobby Inman and the MCC joint venture to Austin, are but the early signs of the kind of competition for service amenities to come.

The second Canadian problem area is that of rural development. Without an increase in communications capabilities and the attracting of new primary and secondary activities into these areas, the continuing depopulation of many Canadian districts will continue until there is little or no hope of revival. This will work against those older people whose educational skills are adequate for existing rural jobs but who have no place in the urban environment. The loss of services that cannot yet be replaced by telecommunications is perhaps the most critical short-term problem to avoid

The third Canadian problem has to do with the need to diversify. All ten provinces are rather narrowly dependent on one or a few major products, especially resource products. Even Ontario finds itself in the uncomfortable position of being quite dependent on the production of autos and automotive parts. Though the dependency may differ from one area to another, the lack of diversification is a serious problem. Economic decentralization that accompanies the information economy could help overcome this problem, provided a conscious attempt is made at diversification

The fourth problem is that of maintenance and adjustment. Since Canada has a relatively open economy, technical change or changes in world consumer tastes have a direct impact on the national economy. It is virtually impossible to shield Canadian business from these changes. It is important as a political and social objective, however, to try to mitigate the effects of sudden changes. Adaptation in an undiversified economy is not simply a synonym for migration, unless international migration becomes considerably freer. This may become the case, especially as the level of professional skills grows worldwide; but it is significant that labor mobility is not central to the GATT or the bilateral talks that will help to determine the world economy to the year 2000.

Maintenance implies that some industries must be kept in existence for reasons other than economic viability. There are often national security reasons or social reasons for maintaining industries when they should otherwise be allowed to close. This reasoning, unfortunately, is often abused for political reasons.

A national development strategy that focuses on problem areas such as these four can set the climate for the further development of the information economy. High-design industries, tradeable services, telecommuting systems, new rural centres, and sensible labor adjustment can grow while the social and physical problems of the economic transformation are mitigated

Nine years ago, the Atlantic Provinces Economic Council began a process of economic-strategy development that resulted in the publication of *The Atlantic Vision — 1990*. The strategy was based on meeting a gap between projected employment growth in a no-surprises scenario and projected labor-force growth, given existing (1978) numbers on Atlantic provinces population. In effect, the gap had to be met, if at all, by the creation of industries that were neither expected nor countable in a no-surprises scenario. We were challenged to create our own surprises.

The strategy for doing this focused on six items that had to be pursued if there were to be "surprises." They were 1) better information linkages; 2) more applied research; 3) more and better industrial design; 4) management training; 5) technical training; and 6) development of marketing skills.

These strategy items were met with more than a little puzzlement. But it appears that they are needed today even more than ever. Perhaps our strategy came too soon for its time. Both federal and provincial governments now recognize the importance of many of these elements. The first of them is still not really seen as important. Yet, if one is familiar at all with electronic conferencing, data bases and remote learning, it is apparent that better information linkage between Atlantic Canada and the rest of the world is perhaps the most vital of all these elements over the long run.

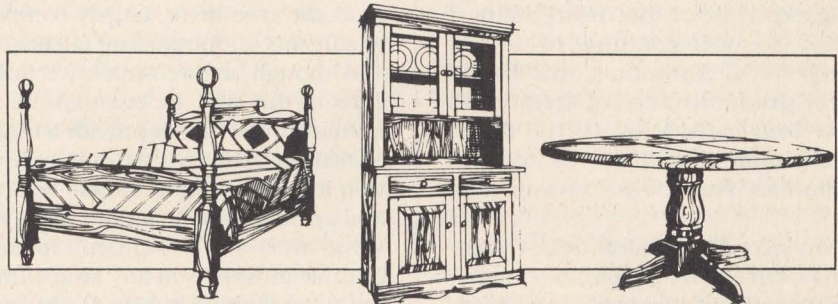
Atlantic Canada could be a real beneficiary from the transformation of the industrial economy. It has not benefited from the industrial economy in any real way since its industrial base disappeared in the 1920s. But if some of the individualism that led to Atlantic prosperity in the mid-1800s still exists in the region, then we may see a renewed prosperity in the early stages of the information economy. In the mid-1800s, shipbuilders built their ships and

then sailed them to foreign markets. In the late 1900s, their descendants could build information-based "ships" and "sail off" with them into world markets If we resolutely stick to preserving the past, and pour our energies into maintaining the mythology and obsession with primary and secondary industries as the main sources of employment, we will inevitably be forced into the economic backwaters

from which the region only recently has started to emerge

It is not enough for Atlantic Canada to simply wait for, and rely on, national policies to provide benefits. The region lost its position in the industrial economy half a century ago. It has a new opportunity to position itself well in the information economy, but only if there is a will towards the future rather than a reverie about the past □

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As the world changes, so must its universities

By Fraser Mustard

Mustard is president of the Canadian Institute for Advanced Research. He addressed the seminar on "university research and training in the emerging, advanced-technology, post-industrial societies." Here's a part of his challenging presentation

I argue that selected universities should be the homes of the long-term, fundamental research that would serve as the foundation for new knowledge development in the knowledge-base society into which we are moving

If universities did not exist, they would have to be created. The problem, however, is how to allow differentiation among the universities I have suggested that, of the ten scholarly activities, four are essential with respect to the demands of modern research: theory construction, observing and chronicling, experiments, and theory testing. I believe we will continue to see the emergence of institutions that have a heavy predominance of research in these four categories. In the Bovey Commission report, we called such institutions "research-intensive universities."

Post-secondary educational institutions will have to balance many requirements, and become more differentiated. Each must try to define its role in mass education; its role in fundamental, long-term research; its role as a centre of intellectual innovation; its role, and linkage, with the applied sectors in government and industry; and its role as a thoughtful, constructive critic of society, and the changes that affect society

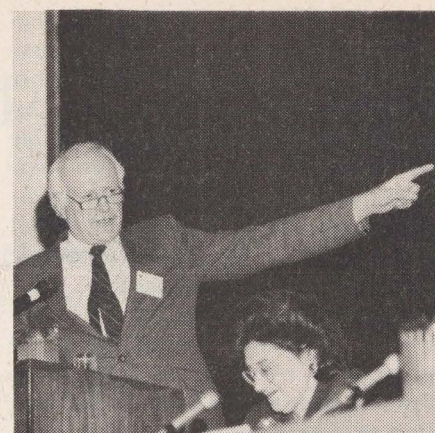
In some cultures, universities have long worried that grants from government for research might jeopardize their independence. In Canada we all wondered and, indeed, fought against the risk that government funding of our institutions would threaten our independence. Similar problems are now arising in the dynamic between industry and research. For example, industry could indeed steer universities in direc-

tions that would be solely in the interest of industry, and preclude the spreading of fundamental knowledge around the world. That spreading has been a characteristic of knowledge development in most cultures

The relationship between the educational function at M.I.T. and Stanford, and their research function, is totally different from that relationship at McGill and the University of Toronto. Stanford and M.I.T. concentrate on the primary research thrust, establish a faculty geared to that, and maintain a much smaller undergraduate enrolment, largely composed of students of outstanding talent.

Although research-intensive universities of this type are essential, we also need institutions that provide a broader education at the post-secondary education level. How should these be staffed and operated, and what should be their value structure? It is difficult to have a credible university of any kind without a strong scholarship base. We must recognize the need to separate research into its different categories. We must also recognize that there should be both research-intensive universities, and more general universities that maintain the core scholarship function.

If we cannot develop differentiations of this sort, we cannot handle the conflict between the needs of mass education at the university level and the demands of modern fundamental research in a rapidly changing society. The alternative is to have the research-intensive aspects of research placed in research institutes, or even in industry. In Canada there is evidence that this shift is already occurring. The failure of university medical schools to maintain a satisfactory research base within the university environment is leading to



increasing proportions of funding from the Medical Research Council going to non-university institutions, such as teaching hospitals. All they have to do to qualify for funding is to state that they are affiliated with a university. But anyone who has done research in a hospital knows that it is not the same as a university environment

Would it be bad for society if more and more of our fundamental, long-term research became based in institutions outside the universities? There are at least two reasons why this would not be desirable. First, the development of new knowledge has a profound effect on the culture, values and economies of societies. To have knowledge development separated from the advanced education that universities offer could lead to a failure to provide an educated population. It could also interfere with the preparation of well-educated people for modern research. Research institutes in hospitals, and industry-based research groups, might have a perspective that is too narrow.

Second, the nature of fundamental research is such that it requires a unique ethos to be successful. Fundamental research has no ideology. It has no set of formal beliefs, but it does have an ethos with rules of conduct. It is not a political movement that one joins by subscription. Membership is by election, and one must make a commitment in order to belong. Like most institutions, fundamental research has its hierarchies and rankings, but this order is based mainly upon achievement and confirmation by peers, rather than upon inheritance, age, brute force, or contrived manipulation. Those who want to become good researchers therefore seek centres that provide them with

the environment to acquire the knowledge, skills and culture they need to be successful in their fields.

It is difficult for most industrial laboratories to develop or maintain such an environment, and it is *very* difficult for government laboratories to do so. There are clearly exceptions in the industrial world, and it may be that successful, knowledge-based firms will, indeed, create an environment where the research ethos can exist. It is important, nevertheless, to retain institutions whose *primary* function is to develop knowledge and transmit it to the population, and whose existence depends on their ability to do this well in relation to the needs of their society.

At the end of the 19th century a turning point occurred in universities. It was the development of the idea of the graduate research university In North America, this led to a system of higher education that blended scientific research with teaching, and also merged high academic standings with popular social ideals. Perhaps the Americans, with their mixed system, have been more successful at this than we have been, with our "provincially funded university system" This structure is under stress today and must adapt to new demands.

Universities, as pivotal institutions in knowledge development and transmission, must respond to the nature of the new marketplace if they are going to fulfill a legitimate function Will the way in which universities function be determined by the marketplace, or has it always been determined by the marketplace?

One can argue that the original universities were founded primarily to serve religious ideals. Is the marketplace a substitute for these ideals? Perhaps one should not pose the question in quite this form. I think the university has to adopt, as its focus for the future, its pivotal role in the development and application of knowledge. In that sense, it must be free from adverse steering effects of the marketplace. More important, however, it must be in a strong position to *interact* with the marketplace because the quality of the knowledge developments, and their application, will have a profound effect on our economy.

The challenge for the university system is to develop a focus that is relevant

Universities and industries, get your acts together

By John Shepherd, chairman, Leigh Instruments Nordicity Groups Ltd.

. . . . Dr. Mustard's R & D culture must, in the main, be a function of demand from an entrepreneurial society. Failing such demand, and the close linkages that go with it, the R & D culture and the university sector, which provides so much of that resource, cannot generate the popular and political constituency that is necessary to the provision of an adequate policy framework and funding base.

Given that imperative, four consequences flow with respect to universities and university research. First, there is a strong pull towards applied research, or at least towards strategic research for which an industrial constituency (if not industrial funding) can be secured. Second, the imperative suggests concentrations of research. What attracts a Spar Aerospace to support the Canadian Institute for Advanced Research (CIAR) is the concentration of world-class talent in artificial intelligence, offering the possibility of a strong competitive edge in such fields as machine vision and remote manipulation.

Third, there must be accorded some priority to research excellence over teaching, wherever there is a conflict of resources. If this sounds rather Philistine, I apologize. But unless we can develop excellence in research, and thereby contribute to a dynamic, technologically based society, we will be providing an education for skills which will inevitably be lost to us

Fourth, the universities themselves must make an increasingly sustained effort to market their research capabil-

ities in the narrowest sense, and to broaden and deepen their collaboration with the private sector. Given the federal government's withdrawal, it is the university-private-sector axis that's critical to momentum in our society

In the crudest terms, the problem of science policy and funding for science is one of constituency. In an era of policy by Gallup Poll, research has no political priority It is against this current and foreseeable environment that we have to view Dr. Mustard's goal of dragging, pushing, or shoving Canada into the age where entrepreneurship and innovation can seize opportunities in what is no less than a new industrial revolution. The goal can be reached only by creativity, and by a sustained, concerted, and public attempt to influence the political community by sheer weight of voice and numbers Universities simply have to move into the arena, engage their counterparts in the private sector, and take political and personal risks.

In all our measured analysis of science policy and industrial condition, in all our fear of controversy, we are neglecting the ingredient of personal engagement and individual leadership, which makes for change in our society. At this point in time, when change will occur whether we like it or not, when we move or are moved from smoke stack to machine intelligence, the leadership qualities in the universities and the private sector will ultimately determine whether Dr. Mustard's vision of a research culture can be achieved in Canada. I hope we are all equal to the task. □

to the future. This requires changes in our universities that are perhaps as big as those that occurred at the end of the 19th century. The need to evolve will have — and is already having — significant effects on the administration of universities, on the organization within

universities, on concepts of disciplines, and on issues of specialized versus general education. The leaders among universities will be those that capture available opportunities, and contribute effectively to the emerging, knowledge-based society. □

Everything is *not* coming up roses

By Nancy Riche

Nancy Riche is executive vice-president, the Canadian Labor Congress, and while speaking on Social Issues in an Advanced Industrial Society, she argued that society might soon become "torn between the affluent minority and a horde of desperately poor people." Here's much of what she said

The current problems of working people — plant shutdowns, loss of job security, technological change, de-skilling, restrictions on collective bargaining rights — are all part of this brave new world. As new technologies are introduced into the workplace, workers are called upon to adapt, adjust, retrain, and relocate. As competition for world markets increases, workers in Canada are urged to be more competitive by accepting lower wages and reduced social services. At the same time, working people are expected to respond to the fantasy world promoted in advertising messages by consuming, spending, and accumulating. These are just a few signs of the current resurgence of a market society and market values. In effect, the survival of capital takes priority over labor, over people, over communities

With this kind of philosophy and political agenda as a backdrop, the future that is emerging is not the improved post-industrial society we envisioned a decade ago. Indeed, it increasingly resembles a pre-industrial society British columnist Neal Ascherson commented recently on the growing similarity between the situation in London today and that in Paris in Marie Antoinette's day: "London is travelling backwards through time towards a relationship between wealth and labor that is almost pre-capitalist. It means a huge service and craft population, making clothes and cutlery, furniture, and designer rugs for the rich, mending their electronics and guarding their homes. It means a capital city not unlike the pattern of eighteenth-century Paris, where almost all employment depended on the needs of the court and the thousands of privileged royal functionaries around it."

Since there is every expectation that Canadians will be living with rates of



unemployment in the 10 per cent range for the foreseeable future, problems of employment and unemployment must ground all discussions of our economic future, particularly when contemplating our future in the information economy. Unemployment could reach 20 per cent by the end of the century, if present trends continue. The major demand for workers in the next decade will not be for computer scientists and engineers, but for janitors, nurse's aids, salesclerks, cashiers, fast-food preparers, truck drivers, and kitchen help. And even these jobs are threatened.

It is not only the percentages employed that will decline but also the quality and meaning of the work, as more and more people are engaged in mindless, meaningless, and monotonous effort. Technology itself is a problem, but in a society where the market makes the final determination, the social consequences are far-reaching. And this market orientation is what we must be most worried about.

As Eric Kierans explains in commenting on the Macdonald Commission blueprint for the economy, "This yearning for free trade reflects a

centuries-old bias in favor of producers over consumers." Mr. Kierans also states that the heart and purpose of an economic system is its principle of distribution. Otherwise, our economic policy makes production an end in itself, and the pursuit of wealth and power continues for its own sake and not as a means to serve the needs of people.

Christopher Lasch, in his critique of Reagan conservatism, points out that, "Conservatives assume that deregulation, privatization, free trade, and a return to the free market will solve everything, promoting a revival of the work ethic and a resurgence of traditional values. Not only do they provide an inadequate explanation of the destruction of those values, but they unwittingly side with the social forces that have contributed to their destruction, for example in their advocacy of unlimited growth The poverty of conservatism reveals itself most fully in this championship of economic growth, the underlying premise of the consumer culture, the by-products of which the conservatives deplore."

Again, as Eric Kierans explains, more economic growth does not solve the evils of unemployment and maldistribution of wealth and incomes. He points out that the Macdonald Commission's emphasis on economic growth as the solution to Canadian ills has ignored the history and the experience of the last four decades, and that over that period we enjoyed phenomenal economic growth but unemployment increased and the distribution of income and wealth worsened.

The labor movement believes advances in the development of capital and technology could be used to greatly enhance the development of people here in Canada, and throughout the world. The Canadian Conference of

ATLANTIC CANADA'S FUTURE IN THE INFORMATION ECONOMY

Catholic Bishops states, "The critical question . . . is who controls these instruments and how will they be used. Unless communities and working people have effective control over both capital and technology, the tendency is for these to become destructive forces rather than constructive instruments in economic development The worker becomes more and more redundant and a victim of impersonal economic forces. *This is the central problem of our times.* It is first, and foremost, a moral or ethical problem in the structural order of our economy and society."

From labor's perspective, social goals must reflect a renewed national commitment to full employment, with an emphasis on permanent and meaningful jobs, new patterns of work with adequate personal or family income. The commitment should also entail the provision of basic social services: education, health care, social security, unemployment insurance, and child care. These social objectives, in turn, require a further commitment to finding new and more effective ways of distributing wealth and power among both people and regions in this country.

The last three decades have seen the collapse of the family wage system. This development is yet another signal of the arrival of the two-tiered society — essentially a society with no middle class, a society with a large number of poor people and a small number of rich people. It is no longer an unwritten law that a single wage will be maintained at a level to support a family. This trend reflects, among other things, a radical de-skilling of the workforce, the substitution of machines for skilled labor, and a vast increase in the number of low-paying unskilled jobs, many of which are filled by women.

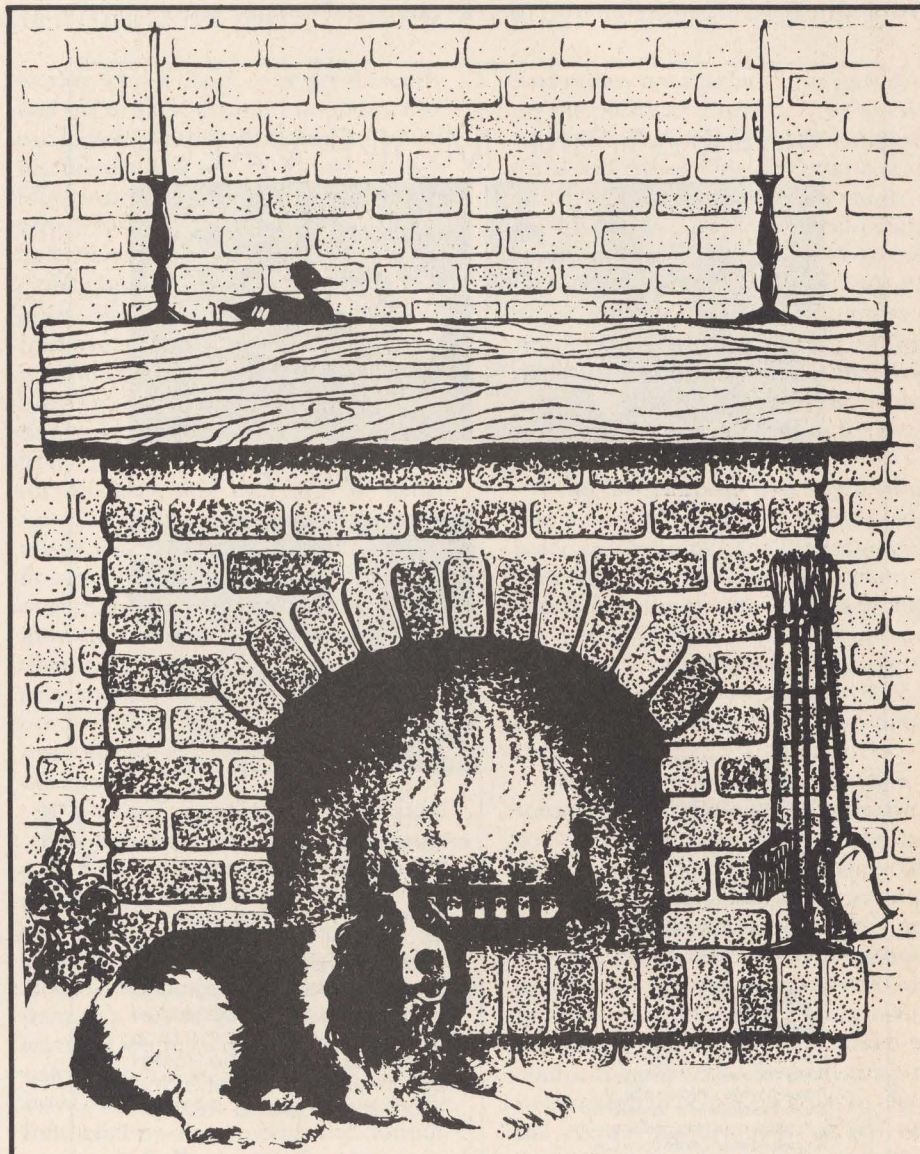
Are these the blessings of a knowledge-based society, a system increasingly characterized by production based on advanced technology, unskilled labor and mass consumption? The bottom 20 per cent of Canada's population earns a mere 3.6 per cent of all income, while the top 20 per cent takes 43.3 per cent. In all, 27 percent of Canadian families earn less than \$20,000 per year.

The magnitude of the problem is staggering. What we are undergoing in terms of social change is equal to and as dramatic as, the Industrial Revolution. Yet programs to help Canadians adjust are either under attack or non-existent

Our society could become torn between the affluent minority and a horde of desperately poor people. Some social historians see that happening to the United States by the end of this century. The Third World would not be joining the industrialized world. Instead, this new, market-oriented society would reshape our society to that of the Third World

Economist John Kenneth Galbraith has warned that the college and univer-

sity community must retain paramount authority for the education it provides and the research it undertakes. The needs of the industrial system must always be secondary to the cultivation of general understanding and perception. I was struck by his comments about how the corporations will use the federal government almost as their agent by controlling university funding and priorities. Galbraith wrote his analysis of the relationship between



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universities and industrial society more than two decades ago but it perfectly describes what is happening in Canada today. The following, from his book, *The New Industrial State*, could serve as a warning to universities, and to society generally, against recent federal policy that increases the power of corporations over research priorities at universities:

"Educational institutions must regain control of their own budgets. For many years this control has been undergoing steady erosion. Funds are accepted from the federal government, for

research, for teaching and for scholarships for specified purposes or areas. The funding largely reflects the areas of industrial need. In effect, it means that the industrial system, acting on its own behalf or through the agency of the federal government, has bypassed the university administration to adapt education to its requirements. Not only will corporate priorities distort the growth in response to the needs of the system, but those involved will tend to identify themselves with the goals of the corporation and industry sectors"

A Atlantic Canada, and this university, nap the transition to a knowledge-based society it would be useful to reflect on how much autonomy and freedom may be sacrificed

The neo-conservatives have transformed the market model from a means to an end in itself. The university system in Canada is being starved through lack of funding. The effects of restraint are clear for everyone to see. Laboratories and libraries have suffered. Class size has increased. Faculty salaries and other support have declined in real terms.

The federal and provincial governments share the responsibility for university funding. From 1967-77, operating costs were shared equally. The formula for the federal contribution was changed in 1977 to restrain government spending on universities. Recent government-appointed federal and provincial commissions to study universities have picked up on this theme of fiscal restraint. They have advanced a series of recommendations to justify further declines in government support.

These measures accelerate the privatization of the Canadian university system by placing more of higher education on a user-funded basis. Two such commissions, one in Ontario and the other here in Nova Scotia, have argued recently for massive increases in tuition, supplemented by a fund run by private investors such as banks and insurance companies to lend money to students to finance their education. Repayment would depend on their income level after graduation. This plan would mean debts of over \$100,000 for students from low-income families on an original loan of \$12,000. Wealthy students would pay substantially less, or in all likelihood incur no debt at all.

The basic question facing Canada's universities today . . . is whether high-quality and adequately funded institutions will be accessible to all, especially to the children of the working people who foot most of the bill. Or will the universities be the preserve of the rich, concerning future benefits on the already advantaged?

Eic Kierans asks a question we hear more frequently: "Is Canada splitting in two, one part protected under the corporate umbrella, and the rest vulnerable weak, employed, and unemployed who struggle for survival? Is corporate power beyond political control?" □

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Fine, but what about the losers? And what about the humanities?

By Denis Stairs

Denis Stairs is a professor of political science at Dalhousie. He wanted to cast doubt on the idea that "technology is not merely the key to 'progress,' but progress itself, and that its engine is taking us where every right-thinking person wants to go." Cast doubt, he did. The bulk of his remarks follows

It is manifestly clear, I think, that the automation processes associated with the so-called information economy will, in the immediate and intermediate terms alike, generate substantial dislocations in the work force, and that the bulk of these dislocations will be concentrated in clerical jobs, where women predominate, as well as in industrial areas in which robotics and other forms of computer-assisted-manufacturing techniques can be applied. These, of course, are precisely the areas in which the work force is probably least well-equipped to make a rapid and smooth transition to other forms of employment.

The problem, moreover, is intensified by the accelerating internationalization of the global economy — itself partly, although by no means solely, the result of technological change. The old industrial structure is everywhere in a shambles, and the political as well as economic impediments to its adjustment are ultimately responsible for the fact that acid rain is still falling on Nova Scotia. It seems clear, as well, that the dislocation process will be accompanied by what the clinically inclined too frequently describe as "de-skilling," and by the transfer of many of the employees in the most significantly affected sectors into service occupations in which the terms of employment are very poor, and the ability to acquire a measure of protection through traditional unionization mechanisms is extremely limited, if not absent

Over the *very* long haul, I think it highly probable that these shorter-term problems will resolve themselves in precisely the way that Mr. Macrae and other intellectual descendants of the 18th-century Enlightenment would suggest. But the long-haul prospects are not comforting to the 45-year-old steel-

worker who is about to be permanently laid off at SYSCO, and I doubt that he can look forward to spending the rest of his life on a beach in Tahiti, with a fortune-making "micro" (modem attached) carefully protected from the sun and the spray in a grass hut close by.

All this *does* mean, of course, that great efforts will have to be made to improve our capacity for mid-career retraining programs, and in this the universities will have to play their part. But I suspect that other types of educational institutions will also be required for this task, and they may be better suited to it. Moreover, industries themselves will have to recognize, as technology forces them to change their own operating systems, that public institutions cannot be expected to meet all of their specialized requirements, and that substantially increased investment in on-the-job training programs will be an unavoidable requirement of their own adaptive processes.

But policies of this sort, essential as they are, remain blunt instruments, and when all is said and done, it seems absolutely clear that the transformations we have been discussing (with such unqualified glee) will in fact bring real and prolonged pain to a very large number of people, many of whom will be permanent casualties of the mechanisms of adjustment. Those who look back upon the industrial revolution with the complacent observation that the Luddites were wrong should not forget that, for several generations, unemployed parents were sustained by the factory labors of their children.

In short, the new information technologies will generate some big winners, but they will produce big losers, too, and not all of them will be in a position to bounce back. This will cause misery.

And misery has a habit . . . of intruding on the political process I am not sure precisely what political manifestations will ensue. One obvious possibility is an increasing concentration of wealth in fewer and fewer hands, with a resulting intensification of class conflict. This will be particularly true if it turns out that substantial numbers of people are permanently excluded from the ranks of the employed, and if we find no substitute for work as the universally respected mechanism for distributing our wealth

I think it possible that in an environment in which technical knowledge is at once the source and the currency of power, political communication — expressing the wants of increasingly specialized interests, cloaked in increasingly specialized (and hence mysterious) bodies of knowledge — will be subject more than ever before to obfuscation and abuse.

The presence in society of an array of sometimes conflicting and sometimes co-operating groups of diverse interests is not, of course, a new phenomenon; and the kaleidoscopic competition for influence over public policy to which it gives rise has been seen by many political scientists in the past as an essential safeguard of liberal democratic politics. If the competing interests — and hence the competing pursuits — of individuals are not enough to keep Leviathan in check, the competing demands of powerful organizations and groups surely is. Or so the argument from pluralism goes.

This argument, however, assumes two things. The first is that the competitions (for there are many of them) are reasonably visible . . . and that the game can be understood by the citizen because the conflicting interests at stake are clear. The second assumption is that the excesses of particular players in the

Dal summer camp is "mini-university"



The "mini-university" program on the Dal campus in July gives youngsters a short, rich taste of what the university offers, including the career opportunities it provides. Dal has long offered summer camps for children in volleyball, basketball and hockey, but the "mini-university" is an expansion of the successful computer-sports camp of recent summers.

The aim is to give youngsters "hands-on experience" in academic-professional disciplines, inspire them to pursue their education, and help them think intelligently about career choices. In addition, the students learn about the importance of fitness and recreation in their lives.

They learn about graduate research programs, and witness demonstrations of scientific technology. The program consists of a two-week module, with five subjects. A module might include, for instance, Dentistry, Theatre, Arts, Law, Biology, and Recreation. Students spend an hour a day for 10 days in each subject, with general recreation and fitness sessions concluding each day's program.

Maximum enrollment per module is 75, divided into groups of 15 according to age. Senior Dal students serve as group leaders, overseeing safety and assisting instructors. Students in the "mini-university" are on campus daily from 9 a.m. to 4 p.m., including a supervised lunch period.

The first module is from July 6 to 17, the second from July 20 to 31. The fee is \$185 per session, with on-campus residence available for an extra fee. Athletics and Recreational Services at the Dalplex handles registration. Call 424-2558.

system can ultimately be restrained, controlled or disciplined by government regulation, should this prove necessary in the wider public interest

What happens, however, if these assumptions do not hold, so that the interests at stake are *not* clear, and the pursuit of them cannot be restrained even if they are? . . . Norman Macrae positively rejoiced in the thought that the information economy would erode the powers of governments because the actors within it could use their "wired world" to escape to other jurisdictions.

But if they can escape the regulatory clutches of governments, what remains to protect the individual or, for that matter, the national societies to which individuals belong, from the operations of technology-based enterprises that will most certainly exercise their power in the way all possessors of power everywhere have always done — in their own interest? . . .

Students of the problem of trans-border data-flows know that substantial volumes of data on Canadian citizens and economic enterprises are now stored in memory banks in the United States. Attempts by Canadian policy-makers to protect Canada's sovereignty in this field have been futile, largely because the pace of technological change has simply outstripped their capacity to keep track of the problem, much less to determine whether it really matters, and if so, how it can be solved. Still again, there is the issue of individual privacy, and how, if at all, it is to be protected against the exploitive intrusions of commercial and financial enterprises, and the potentially even more ominous curiosities of agents of government, both here and abroad.

Consider the fact that it is now possible for an American satellite, passing overhead on a clear day, to detect a cigarette pack lying on the front quad of the Arts and Administration building at Dalhousie. I am not so paranoid as to think that Washington cares very much about the smoking habits of Dalhousians, but we are speaking here of a capacity for backyard snooping that has simply enormous economic and political implications. And *none* of it is under effective public control.

I do not wish to sound hysterical about all this. But I think it fundamentally important to understand that we are dealing here with a form of *power*,

and that it is a power that is peculiarly resistant to those mechanisms of public control and accountability that we have come to take so readily for granted. If the abuse of that power becomes visible, governments will be asked to bring it to heel. For the first time, they may find themselves unable to do the job.

There are a vast number of *other* "social implications of the information economy" to which we could give equally alarming attention. The one I have raised, however, will be sufficient to allow me to say a little about the contribution that can be expected from the humanities and social sciences in response to the changes we have been discussing The true significance of these disciplines does *not* — repeat *not* — lie in what they can produce by way of "social engineering." A little of this, certainly, they can provide, and they can sensitize both public and policy-makers to the issues on the agenda. But on close examination, social problems are more often revealed to have had political causes rather than technical ones, and their solutions (if solutions there be) lie more frequently in acts of political will than in applications of technical expertise.

The most important contribution to be made by these disciplines, therefore, is not the training of social technocrats, but the imparting of a capacity to understand the environment in which we live; to know what is significant and what is not, and why; to distinguish between means and ends, and more specifically to know the difference between a simple fascination with the glitter of technology — which is a dazzling tool, certainly, but no more than a tool — and the pursuit of a life truly enriched by understanding, and hence by a sensitive generosity of spirit, in a tolerant and compassionate society. What these disciplines can contribute to the processes of economic production are watchful individuals with sceptical habits of mind and a capacity for sound judgment — or the ability, at least, to develop it. And I doubt that the information revolution has made, or will make, such individuals less necessary than before. Rather the reverse, I think

All of this discussion — and everyone else's, too — assumes that our politicians, in practising a trade that does not advance, do *not* resort to a technology that *does*, and blow us all away. □

Ballot 1987

Dalhousie Alumni Association Election of members to:

The Board of Governors of the University.

The Board of Directors of the Association.

Following are brief pen pictures of the candidates in this year's election.

Read them carefully, then mark your ballot below and return it to the Alumni Office not later than April 30, 1987.

BOARD OF GOVERNORS

John Chappell, BCom'79, is a financial executive, Merrill Lynch Canada Corporation. Halifax native. Activities while at Dalhousie included teaching assistant for marketing course; researcher for Canadian Marine Transportation Centre. Volunteer and professional activities include Investment Dealers Association. Currently serving a two-year term on the Alumni Board of Directors. Interests/ hobbies are sailing and squash.

Cherry Ferguson, LLB'72, a lawyer in private practice in Halifax. Previously served as general counsel for a public corporation for six years; received LLM in Health Law at Case Western Reserve University in Cleveland; teaches part-time in the Faculty of Medicine, a course in law and medicine; lectures at courses for physicians and hospital administrators; legal columnist for the *Canadian Hospital Journal*; serves on the Editorial Advisory Board for the *Canadian Hospital Journal*; Assistant Clerk, Nova Scotia House of Assembly; member, Nova Scotia Barristers Society; member, Canadian Bar Association, National Health Law Section and Joint-liaison

Committee between Canadian Bar and Canadian Medical Association; member of Dalhousie Alumni Board, 1985-87; member, National Parole Board and Board of Governors of Rothesay College-Netherwood; member, St. Andrews United Church, Halifax.

Betty (Catherine Elizabeth Murphy) Flinn, BSc'59, past volunteer with the United Appeal heart and cancer fund, and junior league. Activities at Dalhousie included intercollegiate sports, yearbook and newspaper committees. She enjoys sewing, skiing and swimming. Currently President of the Dalhousie Alumni Association, past member of the editorial board for the Alumni Magazine, past chair of the Reunion Committee, member of the Board of Governors.

Clifford Nelson Murray, DDS'69, is a dentist in Halifax. Established practice in 1974 after serving as a dentist in the Armed Forces. Volunteer activities include Past President of the Halifax Dental Society; member of various provincial organizations; past member of the Board of Governors of the College of Cape Breton. Currently serving a three-year term on the University's Board of Governors.

M. Vivian Layton, BA'58. Employed as a Senior High Mathematics teacher and head of the Math Department at the Sacred Heart School. Activities at Dalhousie included Gazette, Pharos, Dramatic Society and Glee Club. Currently, serving a two-year term on the Alumni Board of Directors. Past Chair for Reunion and Program Committees. Alumni representative on WUSC. Other volunteer activities include UNICEF, Camp Hill Hospital, Faculty Representative to the Board of Governors Sacred Heart School, Board of Directors of the YWCA, Past President of the Bedford Basin University Women's Club and Finance Committee for the Berwick United Church Camp. Leisure activities include tennis, skiing, swimming and music.

George Thompson, BCom'33, LLB'36. Past President of Acadian Lines Ltd. Activities while at Dal

included Students Council Freshmen Representative; President, Commerce Society; Life President, Class of '33; football; basketball; track; President and Treasurer, DAAC; Malcolm Honor Award. Currently completing a two-year term on the Alumni Board of Directors. Past member of the reunion and honorary degree committees. Other volunteer activities include Director, Rainbow Haven; N.S. Safety Council; Past President of the Canadian National Institute for the Blind; past Director Ashburn Golf Club. Named Canadian Transportation Man of the Year 1980. Leisure activities include golf and dancing.

BOARD OF DIRECTORS

David J. Almon, BA'74, BEd'75, LLB'79. Employed in the practice of law with the firm of Franklin, Mitton, Fountain and Thompson in Halifax. Activities at Dalhousie included: member of Dal Political Science Association, Law School Speakers Committee, student liaison with faculty committee for Law School, ski club. Formerly employed as a legislative assistant to the Parliamentary Secretary to the Minister of Energy, House of Commons, Ottawa. Professional activities include member of Nova Scotia Barristers Society and Canadian Bar Association, former Board member of a local child care centre, member of Halifax Board of Trade, and executive member of Federal Liberal constituency of Halifax.

Andrew Beckett, C.A., BCom'81. Currently employed as General Manager of the Student Union Building, Dalhousie University. Formerly employed by Clarkson-Gordon. Activities at Dalhousie included Treasurer, Residence Council, Howe Hall, and Resident Assistant for two years in Howe Hall. Current volunteer and professional activities include Chair, Board of Stewards, St. Andrew's United Church; Board of Directors, String Music Atlantic; Vice-Chair, Council on Student Life; Chair, Alcohol Awareness Committee; Executive, Atlantic Association of Universi-

Ballot 1987

Please mark choices with an 'X'. Return the ballot form by April 30, 1987, to The Alumni Office, 6250 South Street, Halifax, N.S., B3H 3J5.

BOARD OF GOVERNORS 1987-90

(three to be elected, three-year term)

- 1. John Chappell
- 2. Cherry Ferguson
- 3. Betty Flinn
- 4. Dr. Clifford Nelson Murray
- 5. M. Vivian Layton
- 6. George Thompson

BOARD OF DIRECTORS 1987-89

(six to be elected, two-year term)

- 1. David J. Almon
- 2. Andrew Beckett
- 3. Alexandra E. Carter
- 4. Eric Demont
- 5. T. Scott Fowler
- 6. Dr. Nancy MacDonald
- 7. Lois Anne MacGregor
- 8. David M. Meadows
- 9. Anne Petley-Jones
- 10. Dr. David Precious
- 11. Ruth Pulsifer
- 12. Dr. Peter Rans



DALUMNI

ties and Colleges Student Services; marking for C.A. Program; formerly Big Brother and Boy Scout Leader. Enjoys golf and woodworking.

Alexandra E. Carter, BA, MFA. Employed as Public Relations Officer for the Grace Maternity Hospital. Activities at Dalhousie include Glee Club; PiBeta Phi. Volunteer and professional activities include Program Committee (Dalhousie Alumni Association); Canadian Public Relations Society; Art Gallery of Nova Scotia; Health Care Public Relations Society; Tourism Committee, Halifax Board of Trade; former director, YWCA; Halifax BoT, CPRS-Nova Scotia Heritage Advisory Committee, City of Halifax. Interested in politics, arts, antiques, heritage preservation, gardening, special-events organization.

Eric Demont, LLB'56, practicing law in Wolfville. Activities at Dalhousie included debating, intramural basketball and football. Currently serving a two-year term on the Dalhousie Alumni Board of Directors. Other volunteer/professional activities include Nova Scotia Barristers' Society; King's County Barristers' Society; Canadian Bar Association; Rotary Club; Wolfville Town Council; and Police Commission and Eastern King's Memorial Hospital. Hobbies include politics, tennis, swimming, basketball, apple growing.

T. Scott Fowler, BSc'76, MBA'79. Employed as a financial consultant with Merrill Lynch since 1979. Activities at Dalhousie included Chair Intro Dal, Co-chair Winter Carnival, President Phi Delta Theta Fraternity, soccer, lab demonstration for entomology. Volunteer activities include Past President MBA Alumni Association, Executive of Black & Gold Club, Secretary of Investment Dealers Association of Nova Scotia, Chapter Advisor Phi Delta Theta Fraternity, past MBA representative to the Alumni Board. Skiing and basketball are important hobbies.

Dr. Nancy MacDonald, BSc'73, MD'77. Full-time practicing internist; member and zone advisor to Canadian Ski Patrol System. Activities at Dal

housie University. Leisure-time activities include competitive sailing; skiing; and piano.

included treasurer, Dalhousie Medical Students Society; co-chair, Medical students Charity Auction. Leisure: windsurfing, skiing, skating. Past Director of the Dalhousie Alumni Association; member, Student Relations Committee.

Lois Anne MacGregor, BPE'70, Dalhousie; MSc University of Illinois '74. Employed as a faculty member at Dalhousie's School of Recreation, Physical and Health Education. Activities at Dalhousie included varsity volleyball; junior varsity basketball; Secretary, National Students Association; Vice-President Phys-Ed Society; cheerleader. Current volunteer and professional activities include Program Committee, Alumni Association; Secretary, Volleyball Nova Scotia; board member, Dalhousie Alumni; member of Dalhousie Black & Gold Club; President of Halifax Women's Volleyball League; Chair 1987 Dalhousie Volleyball Classic; former head coach Women's Varsity Program at Dalhousie. Leisure activities include sports, dance, theatre.

David M. Meadows, LLB'74. Employed as a lawyer, Department of Justice, Federal Government. Activities at Dalhousie included the Debating Society, Dalhousie Law School; Student Liaison Committee, Dalhousie Law School; and, Dalhousie Legal Aid Service. Current volunteer and professional activities include lecturer, Nova Scotia Bar Admission Course; Faculty Assistant, legal writing, Dalhousie Law School; Moot Court Advisor, Dalhousie Law School; past member Nova Scotia Criminal Justice Project; member Canadian Civil Liberties Association; foster parent, Foster Parents of Canada; Chairman, Class of '74 Reunion Committee; fund raiser, Canadian Cancer Society; member Nova Scotia Barristers Society; and, member Law Society of Alberta.

Anne Petley-Jones, BA'67. Senior Systems Engineer for IBM. Activities at Dalhousie included the newspaper; Winter Carnival; theatrical group; and various volunteer clubs and societies. Current volunteer activities include executive member of the Advisory Board to the School of Business,

Dalhousie University. Leisure-time activities include competitive sailing; skiing; and piano.

David Precious, DDS'69, MSc'72. Currently practicing in Halifax. Chair, Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Dalhousie University; Head, Department of Oral and Maxillofacial Surgery, Victoria General Hospital. Activities at Dalhousie included Phi Delta Theta fraternity; football; President, DAAC. Current volunteer and professional activities include United Way dental coordinator; Past President, Canadian Parents for French; President, Canadian Association for Oral and Maxillofacial Surgery. Leisure activities are family-related.

Ruth (Murphy) Pulsifer, BA'57, BEd'58. Employed as a Guidance Counsellor at Cobequid Educational Centre. Currently serving a one-year term on the Alumni Board of Directors. Activities at Dalhousie included basketball, Pharos, Rink Rats, Publicity Committee, Shirreff Hall House Committee. Formerly involved with the Jr. League, CAMR, United Way. Enjoys skiing, spectator sports, crafts, and community involvement.

Dr. Peter Rans, PhD'84, is Assistant Director, Transition Year Program, Dalhousie University. Activities at Dalhousie included President, Dalhousie Student Union; student representative to Board of Governors and Senate; member of Committee on Student Life; member of Executive, Board of Governors; member of Finance Committee; member of Academic Registration Committee; Malcolm Honor Award recipient. Current volunteer activities include Multiculturalism Nova Scotia Education Committee; Dalhousie Faculty Association; Dalhousie Student Union Coordinating Committee; consultant on multicultural programs; co-facilitator for 'Returning to Learning' workshops at Mount Saint Vincent University. Currently working on a Masters in Public Administration on a part-time basis.

Alumni Travel 1987

The Dalhousie Alumni Association is pleased to announce and endorse three travel programs:

Bermuda March 21 — 28

Bermuda is a recreation haven, and the Belmont Hotel offers warm hospitality. Daily activities may include golf, tennis, or relaxing on the beach or by the pool. Price: about \$1,299 (Cdn.)

New York Weekend April 16 — 19

Enjoy shopping, theatre, and sightseeing during a long weekend in the Big Apple, while staying at the St. Moritz on the Park. Price: about \$829 (Cdn.)

Eight Ages of Britain June 13 — 28

A leisurely trip through the English countryside includes historical tours of Bristol, Cambridge and York. Price: about \$2,570 (Cdn.)

For further information call, or write to :

Canadian Educational Travel Association
4616 St. Catherine Street W.
Montreal, Quebec H3Z 1S3
1-800-361-7580

Alumni solve photo quizzes

When Dalhousie archivist Charles Armour used this magazine to ask alumni for help in identifying Dalhousians in two old photographs, the response overwhelmed, bewildered, and finally delighted him. He got dozens of letters from across the country, as well as long-distance phone calls; and more alumni wrote directly to the magazine. What bewildered him was that the letters didn't always agree about who was exactly who in the photographs, and what the events were. Armour now feels, however, that he has most of the identifications pretty well sorted out, and he thanks everyone who took the trouble to respond to his plea.

The first photograph ran on page 35 of last summer's issue, and it showed 13 young women in evening gowns striking graceful poses under a basketball hoop in the old gym. It turns out that they were part of a Glee Club show in the fall of 1940. They were, left to right, Edith (Wolfson) Coleman, Joan Graham (or possibly Anita Reid), Gwen Quigley, Norrie (Douglas) Wiswell (or Peggy Hibbard), Brooks MacNeil, Melda (Nightingale) Dunnet (or June Phinney), Bonnie Lindsay, Irma (MacQuarrie) Teichert (or Dorothy Ball Smith), Lorna (MacQuarrie) Beacher, Anne Goodere (or Laura MacKenzie, or Dorothy Stairs), Xenia (Reid) Dunn, Florence (MacDermid) Lang, Dorothy (Graham) Fowler.

The second photo, which ran on the inside back cover of our last issue, showed a musical band and spectators in the stands at the athletic field. Armour now knows that the game was between Dal and Acadia on Oct. 3, 1936, and that, leaving aside the unidentified youngsters at bottom left, those in the photograph included: bottom row, left to right, Henry Reardon, Raphael Wallace, Gordon Stoddard; next row up, left to right, John Morrison (with baton), Frank Morse, Leo Landreville, Alex Farquar (or Lloyd Dalton); third row up, left to right, Nora Jamieson, Edgar Stewart, Clem Egan, Henry Gold, Jack Burley, Ralph Plummer, Ian Robb, and a Mr. McLeod; fourth row up, left to right, unidentified man, Bud McKenna, Fred Stiefel (or Fred Danziger), J. Alexander Webster,

Cameron Annear, unidentified man, George Baird, a Miss MacMillan, Jack Reynolds, John Hutton, Oliver Campbell; fifth row up, Roy Killam, unidentified man, Robert Levine (with bass horn), Stan McQueen (to right of bass drum), Henrik Tønning, Ed Harrington, Daniel Matheson, Zilpha Linkletter; back row, Ben Dubilier, Carvel MacIntosh, Murray Feigenbaum, David Redmond, Selig Gellner, John B. Baker, Glynn Fitch, Jean MacDonald, Marion Little, Archie MacKenzie.

Further mystery photos will appear in future issues.

Dalhousie Alumni Association Annual Meeting and Dinner

Saturday, May 9, 1987
7 for 8 P.M.

Guest Speaker: Mike Duffy
CBC Parliamentary Correspondent

Tickets \$22.50 each
Available from
The Alumni Office
424-2071

Dal man rises at General Electric

Anthony L. Craig (BSc '66) has been named a vice-president of General Electric Company, Rockville, Maryland, and also president of General Electric Information Services Company, the world's biggest commercially available teleprocessing network. GE Information Services reaches 750 cities in more than 30 countries on five continents. It serves the manufacturing, shipping, retail, banking teleprocessing and health-care industries with electronic data interchange systems, financial systems, host-to-host network interconnections, and global electronic mailbox services.

After graduating in mathematics and physics from Dal, Craig worked for 17 years with International Business Machines Corporation in Toronto, Paris, and the U.S. He joined GE Information Services in 1983, and before his recent appointment as president, he was senior vice-president,

International Sales and Services Operations, responsible for all the company's activity outside the U.S.

New fiction from Dal grad

Ray Smith (BA '63), author of *Lord Nelson Tavern* (1974), recently produced another collection of fiction. It's called *Century* (Stoddart), and Smith says it's "a novelistic ensemble of investigations into the roots of evil. The book begins with a young woman's vision of Heinrich Himmler. Confused and humiliated, Jane Seymour looks into the face of evil. Her search ends soon enough, but ours continues — through the Seymour family's travels to Austria, America, and Africa, to Paris of the *Belle Epoch*, across Germany on the Orient Express in 1923 . . ."

Born in Mabou, Cape Breton, Ray Smith was a founding member of the Montreal Story Teller Fiction Performance Group from 1970 to 1976, and has performed readings of his works across Canada, in the U.S., and in Europe. He is now writer-in-residence at the University of Alberta, Edmonton.

Ladies' College marks centenary

The Halifax Ladies' College, an institution with close ties to Dalhousie ever since its birth in the year of Queen Victoria's Golden Jubilee, is celebrating its 100th birthday with a reunion next Oct. 23 and 24. Since 1984 the HLC has been the co-educational Armbrae Academy.

Many HLC grads continued their education at Dalhousie; and the first HLC student ever to get a university degree, Lucy Murray of the class of '89, earned it at Dal. Moreover, many HLC-Armbrae teachers have been Dal grads. The first woman ever to get a Dal degree, Margaret Florence (Newcombe) Trueman was an HLC teacher on the day the school opened, September 15, 1887, and served as its sixth principal from 1911 till her retirement in 1918. The current headmaster at Armbrae, Bonar A. (Sandy) Gow, earned both his BA and PhD at Dal.

Until Shirreff Hall opened in the

DALUMNI

early '20s the college, which was then a boarding school on Barrington Street, also served as an approved residence for women students at Dal.

Now, the HLC-Armbrae Academy invites former students, staff and Dal boarders to write immediately for information about the 100th Anniversary Reunion. Address inquiries to The Secretary, Halifax Ladies' College Alumnae Association, c/o Armbrae

Academy, 1400 Oxford Street, Halifax, N.S., B3H 3Y8

Law School, heal Thyself

To the editor:

I read with interest the article "Our Man

in Liechtenstein" in your fall issue, particularly the activities of Professor MacDonald, his knowledge of the European Court of Human Rights and his interest and past activities in international law. However, could it be that he is misdirecting his activities? It seems that his own department, right here in Halifax, can benefit from an increased awareness of Human Rights in an international setting.

I refer, of course, to the disgraceful vote earlier this year by the faculty of Dalhousie's law department, when they decided not to tie assistance by their department to Indonesia, to any indication of an improvement in the Human Rights record of that country. This vote was apparently prompted by concern regarding the brutal invasion (100,000 to 250,000 deaths) and illegal annexation by Indonesia of East Timor, and other well-documented Human Rights violations in that country.

I suggest that his colleagues in the law faculty could well benefit from his assistance so as to realize that they too can play a positive role in fostering Human Rights in the countries that the university has obtained Canadian funds to have joint programs with.

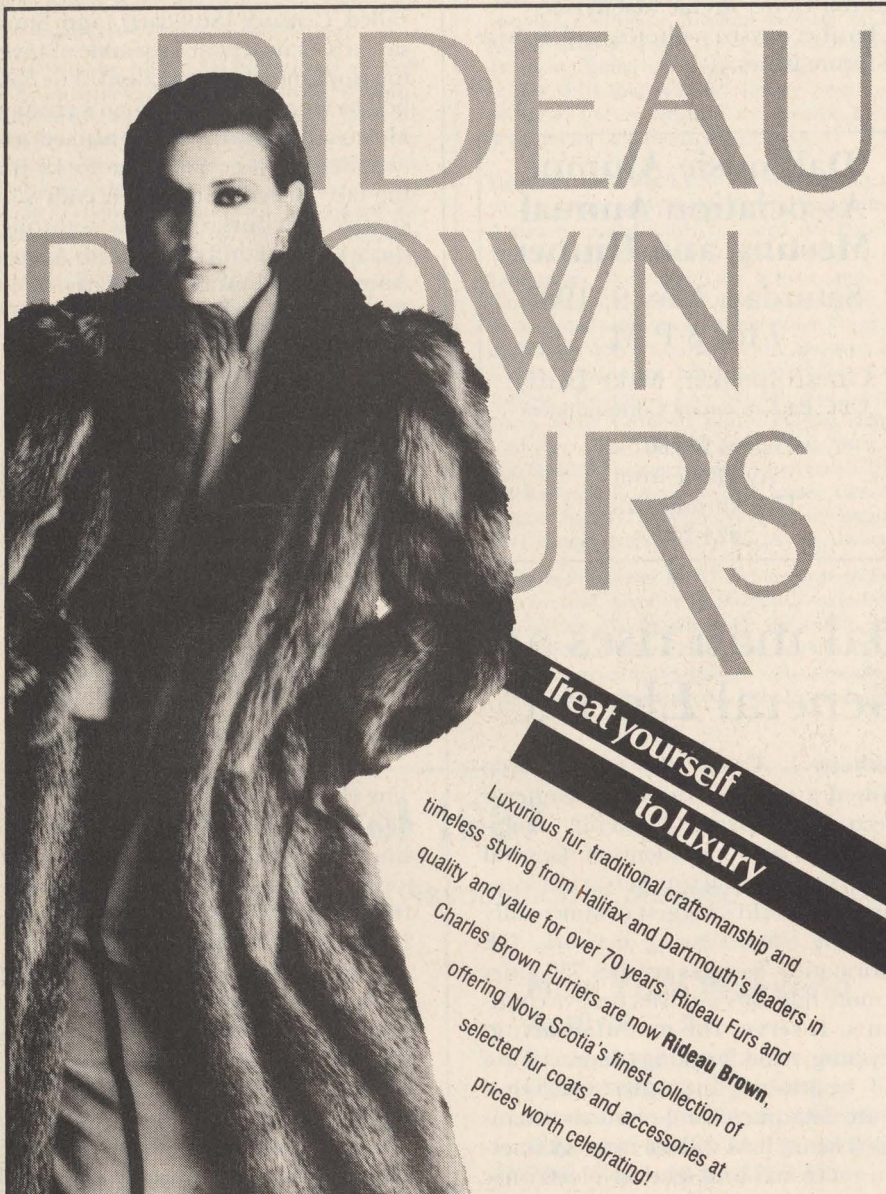
R. Shotton,
6020 Cherry St.,
Halifax, N.S.

Who remembers the '29 quake?

To the editor:

I am doing research for the Geophysics Division, Geological Survey of Canada, on the felt effects of the earthquake that occurred south of Newfoundland on Monday, Nov. 18, 1929, and was felt throughout Nova Scotia and Newfoundland. Felt aftershocks occurred in early December, 1929, in early February, 1930, and possibly at other times in this period. The main shock caused a tidal wave that was observed in part of Nova Scotia.

We want to get as many personal recollections of this major earthquake from as many Nova Scotian communities as possible. Our purpose is to gauge the felt magnitude over all of the province . . . We are therefore requesting reports from any of your older readers who clearly remember the 1929 earth-



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Furs guaranteed to make you look great.

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45 Portland Street, Dartmouth, 463-0032 / 1600 Barrington Street, Halifax, 429-9170

quake, the tidal wave, or the aftershocks in December through to February, 1930

We want to know how the events were felt. Did they frighten people? Was there any sound? Did furniture move? Was there damage to roads or buildings? Were there related events such as landslides or rockfalls? It is important for respondents to note the exact location, and if possible the exact date and time. Any photos or records provided will be copied and returned. Send material to me at Geomarine Associates Ltd., 5112 Prince Street, Box 41, Station M, Halifax, N.S., B3J 2L4.

Alan Ruffman,
President,
Geomarine Associates Ltd.

Alumni Brunch



At a Sunday brunch, sponsored by the alumni program committee, are Lois MacGregor and Nancy K. MacDonald

Inter-frat Council gets together



The Inter-fraternity Council encourages frat members who've graduated to take part in campus events. Left to right: Mike Dunn, chair; Peter Doig, alumnus, Sigma Chi; Scott Fowler, alumnus, Phi Delta; and interested students (Sutherland photo)

MBAs meet at Christmas



More than 100 alumni enjoyed the MBA Christmas luncheon. Here are Ron Storey, Eileen MacDougall, Susan Wark, and MBA president Cindy Robertson (Sutherland photo)

Memory researchers seek volunteers

Researchers exploring the lifespan development of memory processes invite alumni to join a network of subjects at various ages in a study of how we remember and why we forget. Alumni would contribute one hour of time in one experiment. They'll receive a full explanation of the research, and hints on how to remember better as aging proceeds. Interested persons of all ages are asked to call 424-3442, or 424-3417, or to write to Dr. Marcia Ozier, c/o Department of Psychology, Dalhousie University, B3H 4J1.

BODY LANGUAGE.

The Affordable Alumni Body

All this for \$185 per year: swimming, weights, squash, racquetball, skating, badminton, volleyball, basketball, indoor track, saunas and more.



424-3372

Dalplex

President and Mrs. Clark welcome Dal volunteers

Volunteers from the alumni association and alumni divisional boards showed up in full and happy force for a pre-Christmas reception at the home of President Clark and Mrs. Joy Clark. (Photos by Heather Sutherland)



Left to right, from the women's division, Lisa Nicholson, Elaine Gordon, Ingrid Jangaard, Norma Morrison, and Bernadette Macdonald



Dr. Drew Bethune, past president of medical alumni, chats with Dr. Clark



From health administration alumni were Robert Zed and Brenda Myers



Nursing alumnae at the president's reception included Evelyn Schaller, Pat Bailey, Kathy Corrigan, and Josie Richard

BODY LANGUAGE.



Choose the Body You Want
We've got everything from swimming
to weights to skating to saunas.

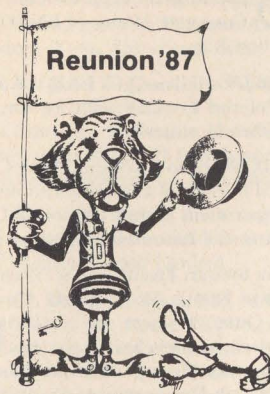
424-3372

Dalplex

Yes, we're still open

Construction of the women's residence makes the Alumni Office at 6250 South Street look almost as though it's buried in rubble from a bombing raid. The office wants all alumni to know that it's open for business as usual. From Monday to Friday, 8:30 a.m. to 5 p.m., we never close.

DALUMNI



The Dates Are Set: May 8-10

Special gatherings for classes of

'27	'52
'32	'57
'37	'62
'42	'67
'47	'72

But **EVERYONE** is welcome,
so c'mon back to Dal
for reunion weekend!

Class Notes

10 Frederick H. Palmer, Engineering, at 94, is in good health and residing in Victoria, Australia.

30 George C. Whiteley, BSc, and his wife, Charlotte, of Naples, Florida, toured Canada and the east coast of the United States in June via the Continental train, cruise ship, and helicopter, enjoying white-water rapids, Everest-like snow capped peaks, and beautiful harbours.

The 1986 recipient of the George Wilson Scholarship, which was set up by the class of 1930, was Thomas Bredohl, receiving \$600.

31 Dr. A. Gordon Cooper, BCom, LLD'68, was named honorary member of the board of The Halifax Herald Limited.

35 Robert M. Marven, BCom, of Surrey, B.C. is a retired general manager of the Fidelity Life Assurance Company of B.C. For several years he acted for CESO in the West Indies and Philippines.

39 Zilpha Linkletter, BA, MA'45, received an honorary degree from Dalhousie at a special convocation on November 8, 1986.

41 Dr. John S. Foster, P.Eng., DipEng, was awarded the 1986 Professional Engineers Gold Medal, the highest award of the Association of Professional Engineers of Ontario.

48 Dr. Rowland C. Frazee, BCom, LLD'75(K), LLD'80, received an honorary degree during the fall convocation at Mount Allison University.

50 Dr. Donald E. Curran, LLB, LLD'84, has recently been appointed chairman of the Nova Scotia Human Rights Commission.

Dr. Douglas H. Johnson, BSc, DipEd, MA'67, EdD'69 (Brigham Young University), retired in 1980 as director, math lab, coordinator mountain-lands articulation project at Utah Technical College in Provo, Utah.

Dr. W. Andrew MacKay, BA, LLB'53, LL.M'54, received the Weldon Award, presented annually by the Dalhousie Law Alumni Association in recognition of his unselfish public service to his community.

51 The Hon. Noel H.A. Goodridge, BA, LLB'53, has been appointed chief justice of the Newfoundland Supreme Court.

Anita (Simpson) Hagen, BA, DipEd'52, was elected member of the legislative assembly for the New Democratic party in the British Columbia election on October 22, 1986. Mrs. Hagen lives in New Westminster, the riding she now represents, with her husband, John, and their two sons.

Dr. Guy R. MacLean, BA, MA'53, was recently awarded status of president emeritus at Mount Allison University.

52 James S. Palmer, Q.C., LLB, was recently installed as chancellor of the University of Calgary.

53 Ann M. Marshall, BA, PhD, is superintendent of Kansas Neurological Institute in Topeka, Kansas.

W. Struan Robertson, LLB, BCom'55, was recently admitted to the Fellowship of Honour, YMCA Canada's highest tribute.

58 C. William Hayward, F.C.A., BCom, has been appointed vice-president, Finance, and secretary-treasurer, as well as a director of the N.S. Tractors group of companies.

Dr. Joey R. Smallwood, LLD, recently received the Companion of the Order of Canada Award at a ceremony at Government House in St. John's, Nfld.

60 Dr. Frank H. Sim, BSc, MD'65, an orthopaedic surgeon in the Mayo Clinic, Rochester, Minn., was in Halifax recently to address a national conference hosted by Dalhousie orthopaedic residents.

Dr. Josephine H. Somerville, MD, received the honorary degree of Doctor of Civil Laws from Acadia University.

61 Prof. Nelson Ferguson, P.Eng., Science, was appointed chairman of the Engineering Liaison Board.

Janice (Merritt) Flemming, DipEd, and P. Brian Flemming, Q.C., LLB'62, of Halifax, have been

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named honorary chairmen of the St. Joseph's Children's Centre annual fundraising drive.

62 Sharon Carstairs, BA, and Alexa McDonough, BA'65, two leading politicians, spoke on September 30 at a Dal lecture series featuring prominent alumni.

James S. Cowan, Q.C., BA, LLB'65, has been appointed chairman of the Cunard St. Theatre fundraising campaign.

63 Patricia (Martland) Roscoe, BA, a human resources consultant with Robertson-Surette, has been elected vice chairman of the board of governors of the IWK Hospital for Children.

Benjamin Swirsky, F.C.A., BCom, LLB'68 (Queen's), vice chairman and chief executive officer of Bramalea Limited, one of North America's largest real estate development companies, has recently been appointed to the boards of directors of Four Seasons Hotels Limited and Slater Industries Limited, both public companies listed on the Toronto Stock Exchange.

64 Dr. Kevin J.M. Moriarty, MSc, a computing science professor at Dalhousie, received an international supercomputer award, the only Canadian to receive the honour for two consecutive years.

Allan C. Shaw, BSc, was recently appointed a director of The Bank of Nova Scotia.

65 John G. Mroz, Q.C. LLB, has been appointed vice president, Real Estate Sales, of Central Trust Company.

Hugh K. Smith, Q.C., BCom, LLB'68, has been appointed to the Nova Scotia Advisory Board of Royal Trust.

66 Anthony L. Craig, BSc, has been elected a vice president of General Electric Company and appointed president of General Electric Information Services Company.

67 Dr. Maris Andersons, BSc, MD'72, has been appointed chief of staff, vice president of medicine at the Donwood Institute, Toronto.

Laurie M. Emms, P.Eng., DipEng, has been appointed chief engineer, Atlantic region, UMA Engineering Limited.

Marilyn (Compton) McLennan, BSc, MLS'83 (UWO), is now living in London, England as wife of a Canadian diplomat, having lived in Edmonton, Ottawa, Hong Kong, Belgrade, Yugoslavia, Lagos, Nigeria, and Bern, Switzerland, since graduation. She is now employed as a librarian at Canada House, Trafalgar Square, London.

John P. Merrick, Q.C., LLB'67, has joined the firm, MacInnes Wilson Flinn Wickwire, as a partner in the practice of law.

68 E. Susan Evans, BA, LLB'78, has been appointed vice president, Law and Corporate Affairs, of ENCOR Energy Corporation Ltd.

Raymond J.P. Halley, Q.C., LLB, was appointed a judge of the Trial Division of the Supreme Court of Newfoundland.

John R.D. Sherwood, BScEngPhysics, has been appointed director of Communications Services, a new department within Dalhousie University Computing and Information Services.

Dr. Moira Stewart Freeman, BSc, is an associate professor in Family Medicine, the University of Western Ontario, where she conducts primary care research and teaches in the graduate program. She recently organized an International Conference on Doctor-patient Communication. She lives with her husband, Dr. Tom Freeman, PostGradMed'77, and two daughters, aged 9 and 6.

69 The Reverend James T. Irvine, BA(K), BST'71(K), has been appointed a canon of Christ Church Cathedral, Fredericton, N.B., by The Most Reverend Harold L. Nutter, MA'47, effective Advent 1, 1986.

Frederick D. Morash, C.M.A., Commerce, was recently elected president of the Society of Management Accountants of Nova Scotia.

Brenda L. VanZoost, C.A., MA, has been appointed vice president, Finance, of Windjammer Windows & Doors Ltd., Amherst, N.S.

70 A. Jean MacDonald, BA(Hon), MSW '73(UBC), has moved to Nelson from Vancouver as the result of an appointment to the position of regional manager for the Kootenay region of the provincial Ministry of Social Services and Housing.

Dr. David B. MacKay, BSc, DipAgric Sci'77 (NSAC), DVM'81(Guelph), is practicing veterinary medicine in Saint John, N.B.

Gerald J. McConnell, LLB, has been named provincial campaign manager for the Nova Scotia Liberal Party.

Dr. Ronald D. Stewart, MD, was honoured by the American College of Emergency Physicians as the 1986 recipient of their highest award, the J.B. Mills Meritorious Service Award.

Ian A. Thompson, BA, has been named vice president of the International Cystic Fibrosis Association.

71 Dr. Mary E. Dykstra, MLS, has been appointed director of the Dalhousie School of Library and Information Studies.

72 Gary C. Smith, BSc, BEng'74(TUNS), is presently employed with Canada Liquid Air as production manager for the Maritimes.

73 Donald D. Adams, PhD, is co-editor of a new book, *Acid Deposition, Environmental, Economic, and Policy Issues*.

Roderick K. MacArthur, LLB, of Annapolis Royal, N.S., has been appointed clerk of the Nova Scotia legislature.

Philip S. Newsome, Commerce, has been appointed director of scouting in Nova Scotia.

Dr. Richard "Sam" Rowe, PostGradMed, is now working in the section of Endocrinology and

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Metabolism of the University of Manitoba, Department of Medicine, at St. Boniface General Hospital. He and his wife, Elizabeth Anne, have three children, Tom, Alison, and Iain.

74 Dr. Janet E. Chute, BA(Hon), daughter of Dr. Walter Chute, Professor Emeritus, Dalhousie University, and Mrs. Chute, received her PhD in anthropology from McMaster University on November 14.

75 Robert W. Howse, BA, was appointed member of the board of directors of the Halifax Herald Limited.

76 Dr. David M. Byers, BSc, MSc'78, Dr. Harold W. Cook, PhD'73, and two other members of the senior investigative team at the Atlantic Research Centre for Mental Retardation in Halifax, recently won a five-year scholarship from the Medical Research Council to continue work with cell development.

Rev. Dr. Pamela Dickey Young, BA, is now a professor of Religion and Theology at Queen's University.

Joseph R. MacGillivray, BSc(Hon), is currently employed as a research officer in the Oil Sands Geology Group, Alberta Geological Survey, Alberta Research Council in Edmonton.

77 Edward C. James, BEd, and his wife, Margaret, BEd(Brandon U), are living in Elkhorn, Man., where Ed is a guidance counselor/teacher in a K-12 school. They spend their free time restoring a local historic property called the "Brotherhood House." Ed also has a collection of over 500 antique cameras.

Alex A. MacBeath, C.A., MBA, has recently been admitted to partnership in the firm of Doane Raymond Chartered Accountants. He and his wife, Nancy, presently reside in St. Stephen, N.B.

Toni K. Newman, Arts, has taken a position as entertainment director of a Club Med in Senegal.

Laura G.M. Peck, BA, BEd'78, has recently been appointed vice president of Barry McLoughlin Associates, an executive training company in Ottawa.

Debi J. Peverill, C.A., BCom, has recently been promoted to the position of manager, Touche Ross in Halifax.

78 Catherine (Clancey) Byers, BSc, has joined Dalhousie's department of Chemistry as the instructor in charge of the general chemistry laboratory.

Eric B. Crowell, BA, has been appointed commercial and retail property manager, Eastland Group Limited.

M. Edwin DeMont, BSc, BScHonCert'79, MSc'81, recently completed his PhD in zoology at the University of British Columbia. He is the recipient of a Nato Science Fellowship and is working in the department of Pure and Applied Zoology at the University of Leeds, U.K.

Mark J. Surrette, BCom, president and managing partner of Robertson-Surrette, a human resource consulting firm serving Atlantic Canada, has been appointed a director of Maritime Warehousing & Transfer Co. Limited.

79 Richard E. Collins, BA, BA(Hon)'80, MA'81(U of T), is currently part-time professor of English at Saint Mary's University.

Michael E. Power, BA, MBA'83, LLB'83, has joined the law firm of Holm Ritch Penfound in Halifax.

Calvin W. Ruck, DipSocialWork, Dartmouth, is author of the new book, *Canada's Black Battalion: No. 2 Construction, 1916-1920*.

80 Paul E. Falconer, BSc, BEnvirDes '83(TUNS), BArch'85(TUNS), is now an architectural designer in the offices of Stull & Lee Inc., Boston and Los Angeles. He has just completed the professional development program at the Harvard Graduate School of

Design and is a design instructor at the Boston Architectural Centre.

James D. Wiswell, MBA, is a real estate analyst, Corporate Banking, Barclays Bank of Canada, in Toronto. He is presently completing the CMA program.

82 Stephen D. Adams, BSc, BCom'86, has started employment with Norwich Eaton Pharmaceuticals, a Proctor and Gamble Company, as of November 3, 1986, as medical representative for Nova Scotia.

Dermot C.G. Moore, BA, LLB'86(Osgoode Hall),



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currently completing his articles with Fleming, Smoke & Burgess in Toronto, will be joining the firm after Bar Ads.

Brian M. Rose, BCom, is presently employed with Eaton Financial Services, Halifax, as an account representative.

83 Susan Nickerson-Graham, LLB, is now director of community partnership at Chalmers United Church, a project designed to build community and encourage involvement in social issues.

Michel Ouellette, MSc, has accepted a two-year position as coordinator of conferences and summer programs at Mount Allison University.

Dr. John C. Polanyi, LLD, a University of Toronto professor, was one of three scientists to share the 1986 Nobel Prize for chemistry.

Dr. Cedric E. Ritchie, LLD, received an honorary degree from Mount Allison University during fall 1986 convocation.

Ron J. Stegen, DipEng, BCom'85, has been appointed business manager of Fairley & Stevens Mercury Lincoln, Dartmouth.

84 Ross Y. Archibald, BSc, is currently studying law at the University of Victoria.

Dr. Willard S. Boyle, LLD, Wallace, N.S., a retired nuclear physicist, has been presented with the Photographic Society of America's Progress Medal Award, the society's highest award.

David M. Layton, BA, has been selected a Rhodes Scholar to represent the Maritime region for 1987.

Michael T. Moore, BRec, MPhysicalEd(Administration)'86(U of Ottawa), has returned to his home in Corner Brook, Nfld. and established a Sport and Recreation consulting firm on April 16, 1986.

Gary L. Zed, BA, MBA'86, is currently studying law at the University of New Brunswick. Due to his success with his business Hotdog Heaven, Student Enterprises, and Sun Bums Beachwear, he was one of 250 people chosen from 120 countries to attend the World Conference on Youth, a week long seminar studying youth employment, held this past July in Nanaimo, B.C.

85 Doug D. Carrigan, BA, is to direct Halifax's St. Pat's High School's first-ever musical in April and will have a role in Neptune Theatre's last production of the season, Moliere's Tartuffe.

Victoria Mathias-Coolen, MEd, and **Darren F. Coolen**, BSc'85, are living in Hubbards, N.S. Victoria teaches part-time in the Psychology department at Mount Saint Vincent University and Darren is presently employed with IMP Group Ltd. as an associate systems analyst.

Robert S. McInnes, BA, Halifax, has been selected as a chapter consultant of Phi Delta Theta fraternity.

Linda D. Mosher, BCom, is an account executive with Hertz Canada Limited in Halifax.

86 Michael S. Francis, BCom, is an account executive with Avis Rent a Car in Halifax.

Pauline S. Johnson, MSW, has been appointed

executive director of the Federation of Foster Parent Associations of Nova Scotia.

David T. McVicar recently represented Canada at the 59th World Sports Expo in Chicago as president of SUNBUMS Ltd. He has also developed another manufacturing company in Halifax which imports fine leathers from Brazil, Spain and England for the purpose of making historic garments.

Heather A. Moyes, BN, and **Patricia M. Horner**, BN, have recently joined the staff of the Cross Cancer Institute in Edmonton.

Margaret (Pye) Snyder, BRec, is currently teaching at the Halifax YMCA and at Dalhousie's Dalplex programs geared for people 55 years of age and up.

Births

Catherine (Parks) Bell, BSc'79, and **Capt. John Bell**, Petite Riviere, N.S., on November 9, 1985, a son, William Douglas, a brother for Jennifer.

Jane (Cunningham) Campana, BA'77, and **Steven Campana**, BSc'77, PhD'83(UBC), Tantallon, N.S., on October 12, 1986, their first child, a son, Stuart Edi.

Beth (Hatt) Cole, BPhysEd'77, and **David Cole**, St. John's, Nfld., on August 11, 1986, a daughter, Jillian Joy, a sister for Gwenna.

Mary Jane (Lemon) Davies, BA(Music)'73, and **David H. Davies**, BA(Music)'73, LMus'75(McGill), in Halifax while on vacation, on August 15, 1986, their fourth child, Nicholas Rhodes, a brother for Sam, Ehren, and Sarah. Mary Jane is presently organist and choirmaster of All Saints Anglican Church in downtown Hamilton. David is organist and choirmaster at Christ's Church Cathedral, artistic director of both the Hamilton Children's Choir and the Civic Concert Choir of Hamilton, freelance music critic with the Hamilton Spectator Newspaper, music instructor of Hillfield-Strathallan College, and private teacher of organ and piano.

Maureen Dunn Dicks, LLB'75, and **Paul D. Dicks**, LLB'76, Corner Brook, Nfld., a son, James Christian, a brother for Ainsley Alexandra.

Kathy (Edgett) Foster, BSc(Pharm)'80, and **John Foster**, Moncton, N.B., on September 8, 1986, their first child, a daughter, Sarah Emily.

Cathy (Fisher) Fox, BA'82, and **Colin H. Fox**, BCom'82, Halifax, on September 17, 1986, their fourth child, a daughter, Charlie Elizabeth.

W. Bruce Gillis, LLB'70, and **Debbie Gillis**, Middleton, N.S., on November 18, 1986, a daughter, Kendra Marie.

Elaine (Weld) Himmelman, Arts'78, BChild-Stu(MSVU), and **John G. Himmelman**, BCom'81, Halifax, on October 5, 1986, a son, Jeffrey George, first grandchild for **Peggy**, BA'54, BEd'55, and **Gordon Weld**, DipEng'53.

Joan (Selig) Langley, BPhysEd'75, and **Larry M. Langley**, BCom'74, Halifax, on June 13, 1986, their second daughter, Sarah Elizabeth, a sister for Jean Marie.

Anu (Rautaharju) MacIntosh, BA'78, LLB'81, and **Alexander L. MacIntosh**, BSc'73, Halifax, on October 7, 1986, their first child, a daughter, Caitlin Meeri.



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Thomas D. Mann, BCom'78, LLB'81(UNB) and **Anne Caverhill**, BA'78(Acadia), LLB'81(UNB), Fredericton, N.B., on April 5, 1986, their second daughter, **Charlotte Caverhill Mann**, a sister for **Caroline**. Tom is employed as the chief executive officer for the New Brunswick Nurses Union.

Wendy (Kearley) Mason, BA'81, and **Clyde D. Mason**, BCom'73, New Glasgow, N.S., on July 1, 1986, a daughter, **Allison Kimberley**, a sister for **Rebecca**, 3 1/2, and **Jonathan**, 2. Clyde began operating **C. Mason Realty Ltd.** in New Glasgow in 1986.

Cyndi (Jordan) Murphy, BA(Hon)'78, MLS'80, and **Kendall Murphy**, Dartmouth, on September 11, 1986, a son, **Jordan Patrick**.

John L. Murphy, BSc'78, MD'82, and **Helen (Nicholson) Murphy**, BA'79(Queen's), on November 14, 1986, a son, **Neil John**, a brother for **Erin Joyce**, 3. John is enjoying a general surgery residency at the University of Ottawa.

Lisa (Menchions) Nicholson, BA'76, and **W. Alexander Nicholson**, Halifax, on August 29, 1986, a son, **William Alexander "Sandy"**.

Dr. Mark B. Romanowsky, MD'77, and his wife, **Renee**, have been residing in Lowell, Mass. for the past eight years. They now have five children, **Amy**, **Andrew**, **Ellen**, **Peter** and **Nicholas** — born August 25, 1986.

George G. Sheppard, BSc'72(K), and **Kathy (Kent) Sheppard**, Charlottetown, P.E.I., on August 23, 1986, their first child, a son, **George Graham**.

George is a teacher at **St. Peters Consolidated**, St. Peters Bay, P.E.I.

Mary Kathleen (O'Connor) Schnare, Commerce'80, and **Kevin P.K. Schnare**, BSc'81, MD'85, Halifax, on March 17, 1986, a son **Geoffrey John Daniel**.

Marian C. Spence, MLS'77, and **Donald B. Roger**, LLB'78, Toronto, September 2, 1986, a daughter, **Brittany Elizabeth Spence Roger**, a sister for **Charlie**, February 14, 1984. Don is a partner at **Tory, Tory, DesLauriers & Binnington** and **Marian** is the librarian in the Upper School at **Upper Canada College**.

Claire A.M. Violette, MBA'81, and her husband, **Wayne Harvey**, Halifax, in January 1986, their first child, a son, **Thomas**.

Marriages

Lori A. Abbass, BA'80, to **Auguste Gosselin** on April 5, 1986. The couple are in business together in **Moncton (Riverview)**, N.B.

Kathleen J. Andrea, BA'81, to **Robert G. Richardson**, BCom'84, in Halifax, October 4, 1986.

Rhonda F. Barteau, BA'78, to **Peter D. Stewart** in **Deer Island**, N.B., November 8, 1986.

Dr. Donald D. Betts, BSc'50, MSc'52, to **Patricia McWilliams** in Halifax, September 20, 1986.

Joseph M. Blondeau, BSc'83, BScHonCert'85, MSc'85, to **Deborah M. McGrath** recently in

Dartmouth. The couple reside in **Winnipeg**.

Anthony C.G. Blouin, PhD'85, to **Lyn Wilson** in **Huntsville, Ont.**, August 9, 1986. The couple are living in **St. John's, Nfld.**

Kerry A. Butler, BPhysEd'82, to **Craig A. MacDonald** recently in **Halifax**.

Elizabeth M. Canavan, Master of Arts'72, to **Bert Leonard** recently in **Dartmouth**.

David N. Cole, DipEng'82, to **Michele D. Cameron** recently in **Stellarton, N.S.** The couple reside in **Mississauga, Ont.**

James E. Copeland, C.A., BCom'82, to **Louise M. Smith** recently in **Mahone Bay, N.S.**

Karen A. Crosby, BScPhysio'83, to **Randy M.F. Works** in **Truro, N.S.**, September 27, 1986.

Bruce G. Dempsey, BSc'80, to **Susan L. Lavers** in **Herring Cove, N.S.**, October 18, 1986.

Maureen L. Dickie, BCom'82, to **Ross C. Beattie** in **Halifax**, October 4, 1986.

Susan M. Duncan, BCom'86, to **Stuart R. McLennan** in **Halifax**, August 30, 1986.

John A. Easton, BSc(Hon)'82, to **Jody Determann**, BScPT'84(U of T), in **Brockville, Ont.**, August 24, 1985. John began MSc in quaternary geology and geophysics at the University of **Waterloo** in January 1986.

Diane L.C. Forrest, DDH'77, to **Stephen P. Nowell** in **Lower Sackville, N.S.**, October 25, 1986.

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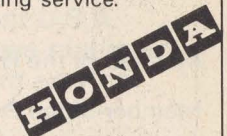
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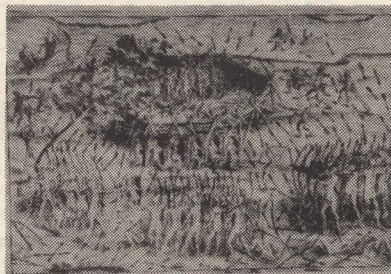


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Margaret C.M. Fougere, BCom'85, to **Alan G. Saunders**, BCom'84, recently in Dartmouth.

Pamela M. Godley, BSc'80, to **James W. King** recently in Oakfield, N.S.

Nancy E. Graham, BSc'79, BScHonCert'80, MSc'82, to **Timothy K. Tompkins** in Dartmouth, August 30, 1986.

David S. Haley, DipEng'83, to **Robin E. Bowman** in Halifax, November 8, 1986.

Donald M. Hartigan, BCom'80, to **Susan L. McKellar** in Dartmouth, November 8, 1986.

Perry W. Hill, Science'78, to **Mary I. Dagley** recently in Bridgewater, N.S.

Sarah L. Hills, BA'82, to **Vedat Amasyali** recently in Istanbul, Turkey.

Nancy J.B. Horne, BA'76, BEd'77(Acadia), MEd'85(MSVU), to **Ron McKenzie**, BSc'81(Acadia), in Dartmouth, July 25, 1986. Nancy is teaching with the City of Dartmouth and Ron is a partner with Nubody's Fitness Centers.

V. Anne Howell, BSc(Pharm)'86, to **Harold E. Carroll** in Truro, N.S., September 20, 1986.

Dennis J. James, BA'83, LLB'86, to **Angela Dwyer**, BA'85(MSVU), in Halifax, October 11, 1986. The couple are living in Truro, N.S. where Dennis is articling with Patterson, Kitz.

Anna K. Jurgens, BSc'84, to **Warren C. Chase**, BSc'83, BEd'84, in Halifax, July 12, 1986.

Mary-Pat Koskie, BA'79, to **Wolf J. Kumberg** in Niagara-on-the-Lake, Ont., October 10, 1986. They reside in Toronto.

Tom J. Krzyski, BA'75(K), to **Donna R. Popowich** in Halifax, October 4, 1986.

Peter M. Landry, LLB'74, to **Linda Tanner** in Little Harbour, N.S. in the summer of 1986.

Penelope G. Lewis, BA'84, to **Colin H. Taylor** in Halifax, October 4, 1986.

C. Robert Lloyd, Commerce'78, to **Patricia A. Coffin** recently in Dartmouth.

Dr. Gary R. McGillivray, BSc'79, MD'83, Post-GradMed'83, to **Lorraine Fraser** recently in Halifax.

James G. McGuire, Arts'73, to **Margaret R. Coulter** recently in Wallace, N.S.

W. Randolph Mitchell, BA'84, BAHonCert'85, to **Maureen E. Arab** recently in Halifax.

Jennifer D. Morash, BA'80, to **Gary W. MacDonald** in Cole Harbour, N.S., October 18, 1986.

Richard W.P. Murphy, LLB'83, to **Shelley A. Wilson** in Salisbury, N.B., September 1986.

Kent L. Noseworthy, BSc'78, LLB'83, to **Pamela M. Alnwick** in Halifax, August 9, 1986.

Brenda M. Pyne, Arts'80, to **Gregory D. Osborne** in Dartmouth, September 1986.

David A. Ricker, DipEng'79, to **Charlene A. MacDonald** in Dartmouth, September 27, 1986.

Ann E. Rogers, BA'80, MLS'84, to **Martin W. Jones**, BA'80, LLB'83, in Dartmouth, September 27, 1986.

Roger C. Strum, BCom'79, BA'80, to **Charmaine L. McLean** recently in Kentville, N.S. The couple reside in Val Belair, P.Q. where Roger is a helicopter pilot with Canadian Forces, Valcartier.

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Monique Y. Vantour, BCom'83, to **Andrew S. McLeod**, BCom'81, of Rothesay, N.B., September 15, 1984.

Christina A. Williamson, BSc(Pharm)'85, to **Ross A. Campbell** in Barrington Passage, N.S., August 30, 1986.

Cathy A. Wood, BSc'83, to **Peter J. Connell**, DipEng'81, BEng'83(TUNS), recently in Halifax. The couple reside in Toronto.

Deaths

Rev. Dr. Waldren Abbott MacQuarrie, A'13, of Georgetown, P.E.I., on May 8, 1986.

Gladys Maie (Lewis) Smith, BA'21, of Wilmington, N.C., on November 20, 1986.

William Campbell Dunlop, Q.C., LLB'22, of Halifax, on October 18, 1986. He spent his first 15 years of practice in Windsor, N.S. and later was a member of the firm of Walker, Wickwire and Dunlop, now Walker-Dunlop. During the time of his practice in Windsor, Mr. Dunlop lived in what is familiarly known as the Sam Slick House. He was instrumental in procuring the purchase of the house by the province and its establishment as the Haliburton Museum.

Frederick Harvey Leake, Pharmacy'22, Somerset,

formerly of Sackville, N.B., on November 6, 1986.

Dr. Gordon Kent Smith, MD'22, of Hantsport, N.S., on November 4, 1986. He was president of the medical staff of Payzant Memorial Hospital from 1938-60, when he was made honorary president. He was active in hockey and rugby at Dalhousie.

Dr. Herbert Redmond Corbett, MD'23, of Sydney, N.S., on November 7, 1986. In 1964 he was appointed head of Radiology at St. Rita's Hospital in Sydney where he remained until his retirement. In 1983 the department of Radiology at St. Rita's was dedicated in his honour. He recently compiled a history of radiology in Nova Scotia, which is in the Nova Scotia Archives.

Dr. Roberta McKenzie Forbes, DDS'24, of St. Petersburg, Florida, on November 22, 1986.

Dr. William A. (Bill) Hewat, BA'24, MD'28, of Lunenburg, N.S., on October 23, 1986. He practiced in Lunenburg for 33 years before his retirement. Dr. Hewat was an original member of the planning committee for Fisherman's Memorial Hospital in Lunenburg.

C. Edward Jones, Arts'24, of Digby, N.S., on June 20, 1986.

Dr. Guy Murray Logan, DDS'24, of Halifax, on October 31, 1986. He was director of dental services for Nova Scotia, serving Camp Hill Hospital

until his retirement in 1964. He also taught at the Dalhousie Dental School and was active in the N.S. Dental Association and Public Health.

Margaret E. (Swetnam) Norton, BA'24, of Grinnell, Iowa, on July 22, 1986.

Dr. W. Ross Cameron, MD'25, a native of Halifax, of Rockville, Maryland, on November 6, 1986. After graduation he joined public health organizations in the United States. His last position was assistant director of public health in Pinellas County, Florida.

Pearl Gertrude Young, BA'25, Taipei, Taiwan, formerly of Pictou County, N.S., on November 21, 1986. Following graduation she attended the Christian Missionary Alliance Training Institute in Nyack, N.Y., after which she did field work in Virginia, China and Taiwan.

Dr. John MacKay Hamilton, MD'27, of Shaker Heights, Ohio, on November 17, 1986. He practiced medicine in Cleveland, Ohio for the past 40 years.

Ralph "Rad" C. Hebb, BCom'28, of Halifax, on July 27, 1986. He was a partner in the firm of Dominion Securities until his retirement in 1971.

Commander W. Graham Allen, Arts'29, of Halifax, on October 31, 1986. In 1951 he was director of university liaison with students, faculty, alumni and the general public; public



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relations and publicity; activities in the art committee and convocation committee at Dalhousie. During that time he served as editor of *The Dalhousie Review*. After resigning from Dalhousie in 1957, he worked in freelance writing, broadcasting and public relations.

John Richard McFarlane, BCom '30, of Rothesay, N.B., on September 1, 1986. He worked with the department of National Revenue until his retirement in 1970.

Dr. William Stewart Woolner, BSc '31, MD '33, of Calgary, Alta., in July 1986.

Herbert R. Banks, BSc '32, of Barrington Passage, N.S., in September 1986.

Dr. M. Henry Brody, DDS '34, of Great Neck, Long Island, N.Y., on November 7, 1986.

Dr. Herbert Lindsay Knodell, BSc '34, MD '37, of Halifax, on September 23, 1986. After graduation he practiced in Dominion and Port Hawkesbury. In 1953 he returned to Halifax where he established a practice, retiring in 1980.

Dr. Arthur Gerald Shane, BSc '38, MD '42, of Halifax, on October 6, 1986. He was chief of ear, nose and throat departments at the Halifax Infirmary and Izaak Walton Killam Hospital for Children and was an associate professor in the faculty of medicine at Dalhousie.

Archdeacon Hastings B. Wainwright, BA '39(K), DDivinity '78(K), of Halifax, on November 29, 1986. He was rector of various parishes throughout Nova Scotia, chaplain at Camp Hill Hospital from 1971-79 and a canon of the Cathedral Church of All Saints in Halifax.

William J. Bradbury, BA '40, of Pittsburgh, Pennsylvania.

Dr. Phyllis Ruth Blakely, BA '42, DipEd '43, MA '47, LLD '77, of Halifax, on October 25, 1986. In 1982 she became the first woman appointed provincial archivist for Nova Scotia. She was made a member of the Order of Canada in 1978. The Federation of Nova Scotia Heritage established the Dr. Phyllis R. Blakely Lifetime Achievement Award in her honour in 1985.

Dr. Bentley Robertson Wilson, MD '43, of Middleton, N.S., on November 26, 1986. He was a medical practitioner in the Middleton area for 38 years.

Dr. C. Henry Reardon, MD '45, of Halifax, on October 13, 1986. He practiced medicine in Halifax until 1980. During that time he was a faculty member of Dalhousie's Medical School, director of student health at Saint Mary's University, and president of the Halifax Infirmary medical staff. He served as chief of the department of family practice in the Halifax Infirmary and was founding member of both the College of Family Physicians of Canada and the Nova Scotia chapter of the Canadian College of Family Physicians.

Dr. Lloyd Feanny, MD '47, of Miami, Florida, on May 7, 1985.

George Archibald Jesty, DipEng '47, BEng '49(TUNS), of Amherst, N.S., on October 14, 1986. He was employed with Maritime Marshland Rehabilitation Administration for 25 years, retiring in 1980 as chief engineer with the Maritime Council of Premiers under MRMS.

The Hon. Judge Vincent P. McCarthy, BA '50, LLB '52, of St. John's, Nfld., on June 24, 1986. He was a judge of the District Court of Newfoundland

land for the judicial district of St. John's West since 1977. Prior to his appointment as a judge he worked with the Department of Justice in Newfoundland, first as a solicitor, then as assistant deputy minister of justice and then as deputy minister.

Dr. Horace Bernard Colford, MD '51, of Halifax, on November 25, 1986. He served with the City of Halifax and Province of Nova Scotia provincial health departments as director of communicable diseases and later as director of maternal and child health. He was one of the founding members of Painter's Palette, an active group of local artists.

Dr. Elmer H. (Tony) Anthony, MSc '53, of Guelph, Ont., on November 26, 1986. After graduation he taught at Dalhousie and later at Guelph University, retiring in 1985.

John Walter Fowler, BA '54, LLB '55, of Red Deer, Alta., on November 9, 1986.

Ivy May Hubley, Pharmacy '55, of Amherst, N.S., on October 15, 1986. She worked as a pharmacist at the Victoria General Hospital for many years.

Dr. Daniel Angus MacDougall, MD '55, of Antigonish, N.S., on October 10, 1986. He practiced medicine in Sarnia, Ont., Redding, Mass., and Truro prior to setting up his own practice in Antigonish.

David Gordon McAlary, BCom '55, of Madawaska, Maine, on August 20, 1985.

Dr. Robert W. Napier, MD '62, of Halifax, on November 30, 1986. He began his practice in Bonavista, Nfld., and returned to Halifax in 1963 where he practiced medicine for 23 years. He was an avid writer, artist and sportsman.

Richard Albert Isnor, BCom '64, of Truro, N.S., on October 21, 1986. He was a former partner of Doane-Raymond, and the owner of Richard A. Isnor Ltd.

Dr. David Saunders Moore, PostGradMed '64, of Truro, N.S., on November 17, 1986. He was an obstetrician and gynecologist, practicing in Truro for 25 years.

Laurel Ann Fulton, Arts '71, of Halifax, on October 30, 1986. She was employed by Dalhousie University in the faculty of law.

Dr. A.G. Patrick McDermott, MD '74, of Halifax, on December 5, 1986. He joined the medical faculty of Dalhousie and the Victoria General Hospital as an orthopedic surgeon. He established and was the director of the bone bank at the VG.

Dr. Mary Nora Sophia Kernohan, BSc '75, MD '81, Goose Bay, Labrador, formerly of Parrsboro, N.S., on November 21, 1986. She practiced medicine as a flying doctor with the Grenfell Regional Health Service in Happy Valley, Goose Bay.

Dr. Richard C. Stewart, PostGradMed '79, of Kelowna, B.C., on September 10, 1986.

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