Gone Fishin’

Introduced to European settlers by aboriginal peoples, ice fishing has become a well-loved fixture of the cold Canadian winter.

By Brian Preston

When was the last time you heard someone say, “I can’t wait for winter?” Many people, it seems, view Canada’s defining season as an inconvenience to be endured. But there are those who love the cold Canadian winter, who count the days till the snow begins to fall and the lakes freeze over. Among them are the ice fishermen.

It is a crisp winter day. A light but insistent wind blows out of the north. I am standing on Quebec’s Lac des Deux-Montagnes, about 60 kilometres from shore, on the south side of an ice-fishing cabin belonging to Jean-Pierre Harbec. Sheltered from the wind, with the sun shining down on us, I find the -3 Celsius day downright pleasant. Harbec and I unpin our parkas and loosen our scarves. “You can get quite a tan ice fishing,” my companion tells me. “By March, people are asking me if I’ve been south.” The idea of leaving Canada in the winter seems...
ridiculous to the sentimental Harbec.

By late December, when the ice is 40 centimeters thick and able to support a truck, brightly painted fishing boats are hauled out from shore, Harbec explains. They stay on the lake, as they do on many lakes across the country, until mid-March or so, looking for little villages on ice.

Harbec's cabin is on the outskirts of the winter village by Vaudeen-sur-le-Lac, within sight of the island of Montreal. The 55-year-old has been ice fishing every winter since his brother-in-law first took him more than 40 years ago. Today, he arrived just before daylight and, using an auger powered by a small motor, drilled 10 holes through the thick ice. Ten lines are the maximum each fisher is allowed. Harbec's holes, each 20 centimeters in diameter, radiate from his cabin in a long, gracefully curving arc, the little piles of ice and slush around each one making them look like groundhog holes. With the sun just beginning to show itself, Harbec lowers a line down each hole, allowing the bait to rest just above the lake bottom, which, this close to shore, is not much more than three meters down. "Porch-like it is down there," the ice fisher comments as he puts in the final line.

It's peaceful here on the lake in the early morning. "I'm always so busy fixing lines and drilling holes," Harbec reflects, "that there's no time to think of anything else."

Most days Harbec fishes with friends (tip-ups in English). "Tip-downs, it seems to me, would be a better name. The rig involves a thin wooden rod and line attached like a sesuai to a thicker, 30-centimeter-long piece of wood that is "planed" in the shush pile by the hole. When the fish bites, the stick tip goes down, like a crane lowering its head, and the fisher drags the fish from the warmth of the cabin to pull up the fish.

On this day, in accordance with some mischievous law of nature, the 15th hole, the one farther from the cabin, is getting all the action. Harbec is catching yellow perch, perchanhoe. He throws the smallest ones back in the lake. The bigger ones he tosses on the ice while he receipts the line. If there's no immediate strike, he takes the fish to the cabin and places them in the sink, where they will be filleted when the day's fishing is done.

Not all ice fishers have cabins. I spend a breathlessly bright morning fishing on Lac Saint-Louis, about 35 kilometers to the west of downtown Montreal, with Diane Laurin, a 49-year-old homemaker who remembers ice fishing at her family's cabin near Hudson, Que., when she was eight years old. Laurin has been fishing just along the shore near her suburban house on Rue Vanier but eschews tip-ups in favour of jiggling. With a simple 40-centimeter rod and line, known as a jig, she moves from hole to hole, drooping in the line and giving it a couple of slight taps to attract fish. She waits for 30 seconds. Then, if there's no strike, it's on to the next hole. The ice freezes quickly over the little holes; at each one Laurin breaks the thin pane with the tree branch she uses as a walking stick. "On cold days, it's work just keeping the ice off the holes," she laughs. Some days, she will fish from dawn until the light begins to fade. It is the taste of the fish caught in winter that drives Laurin's passion for this sport. "They have firmer flesh and a better taste than fish caught in summer," she tells me. She is not alone in this belief. In her famous 19th-century book, The Backwoods of Canada, Catharine Parr Traill wrote that "the muskellunge thus caught is superior in taste." Traill, who had emigrated from Britain in 1832, settling in the Upper Canuada bush, was introduced to ice fishing by her Aboriginal neighbors. Outlining the details of Aboriginal fishing techniques, she wrote, "the fisher places himself on hands and knees and casts his blanket over him so as to darken the water and conceal himself from observation; in this position he will remain for hours, patiently watching the approach of his prey, which he strikes with admirable precision as soon as it appears within the reach of his spur."

Although spear is no longer used, ice fishing has been changed little by modern technology. "Technology has had a big impact on other forms of fishing," says Lord Ellis, a writer and outdoorsman who lives in Thunder Bay, Ont., "but the only thing that has really changed in ice fishing is that we have snowmobiles to get us out there. Other than that, ice fishing's much the same as it was a century ago -- a hole in the ice, a line, and a pole."

The lore of ice fishing abounds with tales of the creative solutions employed to land big fish through small holes and of fishers being caught on breaking ice.

Ellis tells a tale from his own stock of fishing stories. "About 10 years ago, when I was fishing for pike in the Kamninasqua River in northeastern Ontario," he recalls, "my friend got a fish on the line, and he was playing it and playing it. It was obviously a big fish. He finally got it up to the hole, but it was coming tail first -- it had grabbed a line. We were trying to grab it by the tail, but we just couldn't -- it was too wet and slippery. But my friend wasn't going to let the fish get away. When the tail came up the next time, he hit it with his teeth and lifted it, as a seal would, out of the hole. It wasn't an easy task -- that pike weighed more than seven kilograms."

In turn, I pass on a story I'd heard from Richard MacDonald, a high school mathematics teacher from Nipis, Ont., whose word I've always found to be reliable. Fishing near Inaqui Falls in northeastern Ontario, he once landed a huge pike. He left it on the ice, where it quickly froze. Some hours later, he threw it into the unheated back of his pick-up track for the drive home, where he put it straight into the freezer. Six weeks went by. Then one day there was a power failure. MacDonald, returning home from work, checked the basement freezer to assess the damage, and to his behoof, the pike had not only thawed but come back to life -- and had chewed a big chunk out of the hindquarters of a
moose he had in the freezer. "Pike are incredibly resilient," Mac Donald had stressed, recommending that those keen on the science of cryogenics should study the species.

The only problem with this story is that almost no one I've told it to believes it's true. "A freezer pike would definitely not come back to life," Ellis had said emphatically.

James Smalley, a respected outdoorsman and winter from Wasa, Ont., is more circumspect. "If you freeze a fish on ice, then take it home and thaw it, the fish will move around a bit. But whether it's alive, I don't know," he contemplates. "Certainly minutes will freeze and then, when you put them in the water and they thaw out, they'll start swimming around and are quite lively."

The highlight of a recent winter's fishing in Smalley's neck of the woods was the catching of a 47-kilogram, two-metre-long sturgeon by Bob Rice, a fisher from Westons, Ohio. "He was fishing for perch and pike, so it was a big surprise," Smalley tells me with a laugh. "The hole wasn't big enough for the fish to fit through, so Bob, his son, and two friends had to drill a bunch of extra holes around it and then chip them all together so they could get the fish out."

Local officials from the Ministry of Natural Resources estimated the fish was between 70 and 100 years old. The sturgeon was mounted rather than eaten. Like Jean-Pierre Harboe, Smalley is one of those people who prefer winter to summer. "I don't like it hot," he explains. "It's easier to keep warm than cool — you can always add more clothes." Smalley is a bit of an ice-fishing purist, often fishing in Lake Superior Provincial Park, where sturgeon are for

...chini and poisson de Noël. The Sainte-Anne River, which flows south from the Laurentian Mountains, spills into the St. Lawrence River about 40 kilometres downstream from Trois-Rivières, is famous for this fish.

Every year between Christmas and mid-February, Tommy cod, which spend most of their life in the salt water of the lower St. Lawrence, return to the Sainte-Anne River to spawn. At this time, ice fishermen from across Quebec are drawn to Sainte-Anne-de-la-Pérade, which lies near the mouth of the Sainte-Anne, and 600 or so fishing cabins spring up on the ice.

Aboriginal peoples fished for Tommy cod long before the arrival of Europeans, but the art was lost until 1938, when a local butcher was out on the river cutting the slabs of ice he'd use to keep his meat fresh during the warmer months and noticed huge schools of fish. Soon, his family had placed the first cabins on the ice (other people quickly staked claims to "territories" on the ice that are still passed down in families from generation to generation) and tourists began to come, making their way by horse-drawn sleigh or dog team from the local CN train station to the river.

The day I visited Sainte-Anne-de-la-Pérade, the ice was nearly a metre thick, yet the previous day two cabins and a car had sunk through thinner ice a kilometre or so downstream, where the Sainte-Anne meets the St. Lawrence. Large freighters passing by at this point churn up the water, weakening the ice. The incident serves to remind one that peaceful though ice fishing may be, it is not without its dangers.

When I asked one outfitter, Matou Cloutier, how he decides where to place his cabins on the river, he told me, "You need to avoid ice faults." I'd never heard this before and sought a translation. The word is nearly the same in English: fissure. It refers to the build-up of shaky ice that can form under hard ice, especially downstream from a waterfall. It's problematic for fishermen because lines won't descend through it. Cloutier has had to move cabins because of this. He pointed out the place where his cabins had first been, behind Au Ptit Café, a little restaurant on the ice with a half-dozen tables and the very feel of a diner.
W hen Cathy Priestner-Allinger was 14, she found herself wondering if her life had been wasted. It was 1976, and she had just won a silver medal in the 500-metre speed-skating event at the Winter Olympics in Innsbruck, Austria, becoming the first Canadian woman to win a medal in the sport. Little did she know that her association with the Olympics was only just beginning.

Back then, Priestner-Allinger didn’t really give much thought to the people who worked behind the scenes organizing the events, overseeing the building and operation of facilities and, generally, tending to the needs of the athletes. “If you’d told me back then that one day I’d be responsible for seeing that Olympic facilities were built or for organizing and managing the athletic side of the games,” she laughs, “I’d never have believed it.”

What was on her mind when she returned from the 1976 games was that she wanted a “normal life,” says Priestner-Allinger, who had managed to keep up her grades in high school and then university by attending summer school and hugging textbooks with her when she went to international championships around the world. But the star speed skater wondered that a normal life might be a distant dream after being in the international spotlight. “I remember walking into a math class at university and thinking, ‘What do I do now? Where do I go from here? I’ve been in the world at something, and I’m only 19.’”

What Priestner-Allinger didn’t know at the time was that the skills she’d developed as an athlete would play a major role in her career. “I’ve been fortunate,” she says. “The experience I gained as an athlete has enabled me to do the job I’m doing today.”

It not only gave me the knowledge but taught me how to strive to fulfill my dreams.”

After hanging up her competitive skates, the speed skater, who married biomechanist Todd Allinger of Bowman, Montana, in 1986, spent a decade as an Olympic television commentator with CBC and CTV. She then worked with the organizing committee for the 1998 Calgary Winter Games, serving as general manager of the Olympic Oval and staying on in the city afterwards to manage the day-to-day operation of the Oval. This experience led to her being successfully courted by the Salt Lake City organizing committee for the job of managing director of sport and medical services for the upcoming Winter Olympics. In the four years leading up to the 2002 Winter Games, Priestner-Allinger has overseen the construction of three major sporting venues: the Utah Olympic Oval, Utah Olympic Park, and Soldier Hollow. Once these facilities were completed, she assumed operational responsibility for them in addition to planning for the upcoming games.

Fraser Bullock, the chief operating officer of the Salt Lake City games, says that Priestner-Allinger is extremely well liked within the international sporting community. “She’s a delightful individual, and she knows what she’s talking about.”

It is her understanding of athletes and devotion to her work that prompted the Calgary Herald to describe her as “the athlete’s angel,” a title that makes the athlete Priestner-Allinger slightly embarrassed. “It’s my job to do what’s best for the athletes and what will give them the best possible experience,” she points out.

The fact that a Canadian is playing a major role in organizing the Salt Lake City Olympics doesn’t concern the games’ organizing committee, which set out to hire the best person for the job. Priestner-Allinger’s experience in Calgary made her the perfect choice. “Calgary is kind of the mold for Salt Lake,” says Lex Hemphill, a staff writer with the Salt Lake Tribune who specializes in the Olympics. “It was the last time we had the winter games in North America. They were very successful games and the city has done a remarkable job of keeping the venues up. Priestner-Allinger was very involved in this, working there nine years after the games. She was responsible for planning the auction of the venues and for making them work. So I think it’s natural that people from here looked to her for help.”

Little did Priestner-Allinger’s parents imagine that the family’s move from Ontario to Winnipeg in the mid-60s would lead their daughter to Olympic fame. Priestner-Allinger recalls that, like most children, she wanted to make new friends after she moved. “The kids I met were involved with the speed-skating club and said, ‘Why don’t you come out and try skating?’ I didn’t think at all, but I went with them, loved it and ended up winning the national championship within a year,” she laughs. “I kind of got consumed by speed-skating. I had a thing for it and I was good at it. The next thing I knew I was skating in a world championship.”

Within four years of stripping off skates for the first time, Priestner-Allinger was representing Canada at the 1972 Olympic Winter Games in Sapporo, Japan, where she came 4th in the 500-metre event and 29th in the 1,000-metre event.

The irony of her sporting career is that what began as a way to make friends soon mushroomed far beyond those friends, taking her to events around the world where she mingled with top international athletes. She would start the school terms in September with her classmates, but in October would leave for Europe to compete and train, not returning home until March. This made it difficult to keep up friendships. “I spent my teenage years living in two distinct worlds,” she explains. “I think it definitely affected my friendships and perhaps my ability to nurture friendships. ‘Perhaps my life may have seemed glamorous to the outside, but while it certainly gave me a lot, it wasn’t easy,’ she says. ‘The public doesn’t see the frightened 15-year-old on her first trip to Europe, unable to understand the train timetables, place a telephone call or speak the language of the host country. I didn’t know how to exchange money or what a Deutsche mark was. I had no idea what I was getting into. I remember once sitting alone in a train station in Munich, thinking, I’m never, ever going to get home again. No one’s going to know I’ve disappeared.’”

With two to three three-hour training sessions a day, six days a week, there wasn’t much time to do anything other than speed skating. This, combined with an unsettled life style, is why, at 19, Priestner-Allinger opted for a “normal life.”

The former champion revels in her current job, even though it has plenty of challenges. “I’m always worrying about the weather,” she admits. “It’s a huge issue — too much snow, not enough snow, too cold, too warm.”

The big pay-off, she says, is the internationalism — the coming together of the world, and whether you’re at the games as a spectator, a competitor or a broadcast expert, you experience the internationalism. You have athletes from around the world competing against one another in an environment of peace and respect. The Olympics is really about the world coming together. It’s rare and very precious.” — Allan Lynch
Tapping a Massive Resource

With two-thirds of Canada’s known conventional oil reserves already extracted, attention is focused on developing the country’s heavy-oil resources.

By Paul Miller

In the early 1970s, a young engineer named Sylvie Ells was asked to find the key to a giant puzzle. His employer, the government of Canada, had assigned Ells to find a commercial purpose for the deposits of oil-saturated sands in the Athabasca region of northern Alberta that had been first noted by the fur trader Peter Pond 135 years earlier. As Ells was aware, pitchlike heavy oil, such as that contained in the Athabasca deposits, had a lengthy history of use on a smaller scale. Thousands of years earlier, for example, ancients had employed the tarry substance to help preserve the dead. The Roman scholar Pliny claimed that what we know as heavy oil could staunch bleeding, cure gout and even straighten eyelashes.

Although substantial heavy oil exists in a number of countries around the world, such as Mexico, Saudi Arabia and China, about 90 percent of the planet’s known deposits are found in Venezuela, Canada and the former Soviet Union.
As part of Imperial's ongoing efforts to improve energy efficiency, the company is constructing a 170-megawatt electrical cogeneration plant at Cold Lake that will generate enough electricity to power its entire oil sands operation.

But the assignment the Canadian government had handed Ellis was of a different order of magnitude altogether. The commercial outlet he was to find would have to be massive — as massive as the deposits themselves.

And they are indeed massive. In a world where a "world class" oilfield may contain one billion recoverable barrels of oil and where the reserves of major petroleum exporting countries may measure in the tens of billions of barrels, Canada's resources of heavy oil have been variously estimated at between 1.7 and 2.5 trillion barrels.

"On hearing that statistic, you can't help but think about the potential that Canada has for future oil development," says Charles Ruigrok, Imperial's vice-president responsible for oil sands development. But while the opportunity is impressive, capturing the oil represents a significant challenge.

Ruigrok explains why. Much of Canada's heavy oil cannot be economically recovered with current technology and at current prices, even though the size, location and physical characteristics of the deposits are well known. Part of the problem results from the nature of the resource itself. Heavy oil, also known as bitumen, is much thicker and more sluggish in its natural state than conventional oil. Think of it as cold linseed oil rather than as the light-colored liquid you pour into the crankcase of your car.

"Extracting usable energy from the Canadian oil sands," says Ruigrok, "has always been, and probably always will be, a much more formidable challenge than producing conventional oil from a reservoir in, say, Saudi Arabia."

Surprisingly, given the almost unimaginable scale of Canada's oil sands resources, the country cannot claim to have the world's largest reserves of heavy oil. That honour goes to Venezuela, which has an estimated three trillion barrels of bitumen in the ground and, on average, produces about 500,000 barrels a day. Canada's reserves are, however, the second largest in the world. The two countries, along with the former Soviet Union, account for about 90 percent of the world's heavy-oil resources. Other countries with notable deposits include China, Mexico, Saudi Arabia and the United States (one U.S. field in southern California's San Joaquin Basin has been in production for more than a century).

Worldwide, heavy oil accounts for an estimated eight million barrels of daily oil production — more than 10 percent of the total amount of oil produced each day. A small proportion of that heavy oil is used for making asphalt, but most of it is eventually processed into gasoline, heating oil and the thousands of other products that are commonly derived from conventional crude oil.

Given the scale of Canada's heavy-oil deposits, it's not surprising that they have been intriguing people for a very long time. In addition to Ellis, who eventually developed a portable machine that used bitumen to pave streets in Edmonton and sidewalks around Alberta's Jasper Park Lodge, Dr. Karl Clark of the Alberta Research Council devoted considerable attention to heavy oil, and in the 1920s developed a hot-water flotation method to separate heavy oil from sand, which is still in use today.

However, as a result of the physical characteristics of bitumen and market conditions that included a growth in the availability of light oil during the middle decades of the last century, four decades would elapse after Clark developed his separation method before large-scale recovery from Canada's oil sands would begin. In 1967, Great Canadian Oil Sands Ltd. (GCOSL), which later became Syncrude Canada Inc., began operating the world's first oil sands mining and upgrading plant near Fort McMurray in north-central Alberta. Sidney Ellis, in his 90th year, was on hand to see his dream of large-scale production from the Canadian oil sands finally realized.

The initial capacity of the GCOSL plant was about 50,000 barrels a day. Since then, Canadian heavy oil production has grown more than tenfold to about 600,000 barrels a day — nearly 25 percent of our domestic liquid hydrocarbon output, which includes natural gas liquids and crude oil.

"About two-thirds of this country's known conventional oil resources have already been consumed," explains Ruigrok. "But less than one percent of our known bitumen resources have been produced. The potential is truly enormous.

Imperial has been at the forefront of those working to unlock the potential of the oil sands. The company was one of the founders of the Syncrude oil sands mining venture and remains the largest single participant in the nine-member consortium, with a 29 percent share.

Syncrude is the world's largest producer of upgraded oil derived from oil sands and Canada's largest single source of crude oil, supplying more than 10 percent of the country's total domestic output. The Syncrude consortium is currently engaged in a major expansion program that is expected to double its production of upgraded crude oil by the end of this decade — an investment of more than $8 billion.

Imperial's other major involvement in the oil sands is its wholly owned bitumen operation near Cold Lake in northeastern Alberta.

Imperial began assembling its land holdings in the region more than four decades ago and, during the early 1960s, launched a series of research projects that continue to this day. The need for research was dictated by the nature of the resource itself. Although similar to the mottaslike oil in the Athabasca deposits, Cold Lake bitumen was buried far too deeply — about 450 metres beneath the surface — to be extracted by means of the surface-mining techniques used at Syncrude.

Strange enough, considering how heavy it is today, Cold Lake bitumen, which was formed more than 100 million years ago in the sediments of the Canadian Rockies, about 100 kilometres from its current location, began life as very light oil. "Over time," explains Ruigrok, "the oil migrated through a right source rock — its ability to do this tells us it was very light — and saturated buried sand-filled valleys formed by rivers that had once flowed into an ancient Arctic sea."

Later, the deposits played host to water-borne bacteria that consumed the lighter portions of the crude oil, leaving behind the very large, very heavy deposits we know today.

A number of techniques have been developed for recovering bitumen from deeply buried deposits, a process known technically as in situ recovery. In Venezuela, where subsurface reservoir temperatures are much higher than in Canada, the bitumen will actually flow into a well drilled into the deposit, without additional human intervention. In reservoirs that are too cold to permit natural flow — such as the ones at Cold Lake — other ways must be found to make the bitumen mobile.

Imperial's research efforts, from the very beginning, have focused on the injection of high-pressure steam into the Cold Lake deposits to soften the bitumen sufficiently to enable it to be pumped to the surface. During the 1960s, two small pilot projects —
The Syncrude operation, in which Imperial holds a 25-percent share, is the world's largest producer of oil-sands-derived oil and Canada's largest single source of crude oil.

"Imperial's total assets were over $6 billion at the time," explains Peterson. "If we had proceeded with the project as originally planned and something had gone wrong, it could have jeopardized the entire company.

So it was back to the drawing board. What emerged, after several years of study, was a plan that was deceptively simple, but very effective. Instead of producing the huge quantities of bitumen needed to justify an upgrader, the company would develop the deposits in phases, the introduction of each timed to match the growth in North American demand for bitumen, which was expected to occur as production of lighters, conventional oil declined. And instead of trying to upgrade the recovered heavy oil itself – with the accompanying huge investment – the company would dilute the bitumen with natural gas condensate so it could be transported by pipeline to those refineries in Canada and the United States whose plants were already equipped with the specialized machinery required for upgrading very heavy oil.

To say this approach has been successful would be something of an understatement.

Says Peterson: "Although there have been ups and downs in earnings from Cold Lake – the same as there are in every area of a commodity business such as ours – I would have to say that, overall, the project has turned out even better than we expected in the early 1980s."

Through a series of 10 phased developments, production of Cold Lake bitumen has grown to more than 125,000 barrels a day – approaching the scale envisioned for the megaproject. Cold Lake is now by far Imperial’s largest single source of crude oil, accounting for half of the company’s total production of liquid hydrocarbons and half of Canada’s total production of bitumen. On an international scale, Cold Lake is the largest steam-assisted heavy-oil operation in North America and the second largest in the world.

And it continues to grow. Three more phases of commercial development (phases 11 to 13) are now under construction at Cold Lake, on schedule to start operation in late 2002. The latest phases will add about 10,000 barrels a day, on average, to the project’s total output, bringing production to about 150,000 barrels a day when the latest phases reach their full potential by the end of 2003. To improve overall energy efficiency, the expansion will include a 170-megawatt electrical cogeneration plant that will produce steam for the new phases and generate enough electricity to power the entire Cold Lake operation. The total investment required for these new facilities is expected to be about $650 million.

And there’s more to come. The company is currently working towards further expansion of its Cold Lake leases. The proposed development would create an additional three phases (14, 15 and 16), which would require new infrastructure for steam generation, water treatment and bitumen processing. If market and regulatory conditions allow, this planned expansion could be completed as early as 2004, at a cost of an additional $1 billion, and would increase total bitumen production at Cold Lake to about 180,000 barrels a day.

Achieving sustained production on this scale has required the company to overcome some formidable technical challenges. To help meet these challenges, Imperial has created one of Canada’s largest heavy-oil research organizations, employing more than 80 people at its research centre in Calgary.

One of the most important technical accomplishments has been the development of effective and efficient methods to limit freshwater requirements. "In order to produce 125,000 barrels of bitumen through steam generation, you need about 400,000 barrels of water, which is equal to the amount used daily by the city of Sudbury, Ont.," Peterson points out. "The challenge is to minimize the reuse of the water produced with the bitumen.

Today, nearly 90 percent of the water required for steam generation at Cold Lake is recycled.

Another important result of the growing body of strides during the past three decades in building a commercial heavy-oil industry. But as significant as our achievements have been, we’ve only scratched the surface.

In Peterson’s view, heavy oil represents an important piece in the puzzle of future energy supply. "When you look 25 years into the future, you can see that the conventional oil business in Canada, as we now know it, will no longer be playing a major role in this country’s total energy supply," predicts Peterson. "The oil sands represent this country’s most promising source of future liquid hydrocarbons. And I suspect the same is true around the globe. Heavy oil can make a growing contribution to supplying people with the affordable hydrocarbon energy that will help meet their energy needs for decades to come."

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**Inquiring Minds**

With projects that are sometimes on the cutting edge of science, half a million students across the country compete in science fairs each year

**BY MARCIA KAYE**

In grade one, many children aspire to be hockey players, movie stars or firefighters. Romina Perri wanted to be a brain surgeon. So keen was her interest that she entered her first science fair at age six, presenting a project that mapped the parts of the human brain. In the years that followed, the gift from Saint Leonard, Que., continued to take part in her school's annual science fair, submitting projects with ever more complex and original research. By late elementary school she was studying the medicinal effects of garlic on the body (generally good; she found that garlic has antibacterial properties) and the effects of the artificial sweetener aspartame on cells (generally bad; she concluded that aspartame is a weak mutagen). She started winning medals at regional science fairs, then at national and international ones. She took her projects to fairs in the United States, France and Mexico.

This past year, while doing volunteer work under the mentorship of professional researchers in a laboratory at the Montreal Jewish General Hospital, Romina investigated resveratrol, the heart-healthy substance in grape skins and red wine. She made an astounding discovery; resveratrol also seems to be effective against prostate cancer. In May, her project on the substance earned her a third-place finish in her category at the 2011 Intel International Science and Engineering Fair in San José, California, and then a gold medal and a $10,000 scholarship to Queen's University in Kingston, Ont., at the Canada-Wide Science Fair, in which she had held a different location each year. This year it was in Kingston, Ont. Next year it will be in Saskatoon, then Calgary in 2013 and St. John's in 2014. In addition to the educational benefits, science fairs are fun, says John Polanyi, winner of the 1986 Nobel Prize in chemistry, a professor of chemistry at the University of Toronto and honorary chair of the regional Toronto Sci-Tech Fair 2000. Polanyi (who as a child in the days before science fairs delighted in doing chemistry experiments in the bathroom and physics experiments in his bedroom) says there's something truly magical about the powers of science, something that makes scientists, the best of whom are children at heart, able to do extraordinary things. “I've walked around a few science fairs and been enchanted. I think they're marvellous,” he says.

“With science fairs are my hobby, my passion, what keep me going all year,” says Romina. “I get an idea in September, work on it at least three times a week for months, then travel with my project in March, April and May. Science fairs have taught me to present my work and have given me the confidence to do so. Without them, I wouldn't have learned to persist when an experiment isn't working.”

Romina is one of half a million students from grade 7 to the end of high school who take part in competitive science fairs every year across Canada (it's estimated that an additional half-million students participate in school science fairs and local noncompetitive fairs at the elementary level). “Science fairs don't exist just to enable students to present their work, but to help develop Canada's future research capacity,” says Louis Silvoso, principal of a school near Waterloo, Ont., and president of Youth Science Foundation Canada, a charitable organization whose mission is to stimulate interest and career ambitions in science and technology among young people, especially through science fairs. The Canada-Wide Science Fair gives kids something to reach for and encourages them to make that extra effort. “The fair is there,” Silvoso says, “to inspire young scientists, just as the Olympics inspires young athletes.”

Science fairs began as a direct response to the space race of the 1960s. The 1957 Soviet launch of the satellite Sputnik was seen as a remarkable scientific development, generating a new excitement about science throughout North America, fed by the Cold War spirit of competition. During the first years, 1959, science fairs only took place in cities, but gradually they made their way into high schools across the country, as well as many elementary schools. Today, students in private schools and even home-schooled children are also encouraged to participate. Of the half-million senior-level students involved, 25,000 go on to regional fairs. Of those, about 400 compete in the Canada-Wide Science Fair, held in a different location each year. This year it was in Kingston, Ont. Next year it will be in Saskatoon, then Calgary in 2013 and St. John's in 2014. In addition to the educational benefits, science fairs are fun, says John Polanyi, winner of the 1986 Nobel Prize in chemistry, a professor of chemistry at the University of Toronto and honorary chair of the regional Toronto Sci-Tech Fair 2000. Polanyi (who as a child in the days before science fairs delighted in doing chemistry experiments in the bathroom and physics experiments in his bedroom) says there's something truly magical about the powers of science, something that makes scientists, the best of whom are children at heart, able to do extraordinary things. “I've walked around a few science fairs and been enchanted. I think they're marvellous,” he says.

“With science fairs are my hobby, my passion, what keep me going all year,” says Romina. “I get an idea in September, work on it at least three times a week for months, then travel with my project in March, April and May. Science fairs have taught me to present my work and have given me the confidence to do so. Without them, I wouldn't have learned to persist when an experiment isn't working.”
Others were especially topical, with several projects on E. coli, antibacterial soaps, and the overuse of antibiotics. One project investigated whether wood or a synthetic material made better sports flooring (wood won). Another sought to create several peanut-butter substitutes for allergic people (a mixture including sesame seeds, toasted buckwheat and spelt, a coriander grain, came out the clear favourite).

While all the projects displayed written reports of the students' hypotheses, methodologies and conclusions, as well as photos or illustrations, some also included computer presentations, personal Web sites, marketing plans, and free samples. The projects do not speak for themselves: the students—one or two of them per project—must give an oral presentation to each judge and be prepared to answer questions.

Two grade 7 girls from Winnipeg, Lea Gremada and Michelle Robinson, had done psychology research showing that when someone approaches us, the taller that person is, the more likely we are to feel that our personal space is being invaded. When asked about their project's applications, the 13-year-olds replied almost in unison, "It would help you to know how large a room to book for a meeting or how to set tables so the attendees feel comfortable." They won an honourable mention.

Seventh-grader Mathieu Charbonneau of Timmins, Ont., did a study showing that females are better than males at remembering or recognizing facial features—useful information for police doing composite drawings. Twins Alia and Céline Lalancette-Chad, 17, of Brossard, Que., showed, through testing their DNA, that while they'd always thought they were fraternal twins because of the presence of two placenta at their birth, they're actually identical—which can happen in a small percentage of cases. Toronto high school students James Fraser and Andrew Smith also made use of DNA, creating a computer from DNA fragments. An alternative to an electronic-based system, it showed its efficiency in modeling and predicting baseball statistics. Their project won them a bronze medal at the Canada-Wide Science Fair and an award for the best interdisciplinary scientific and engineering team at the international fair.

Lome Heslop, a science policy analyst with Agriculture and Agri-Food Canada in Ottawa and a long-time science fair judge, says, "What I noticed this year was more recognition by students of the environmental aspect of their work." Iris Liu and Sophia Lee, grade 11 students and gardening aficionados from Vancouver, have long been fascinated by the huge sticky slugs that plague West Coast gardens. They came up with the idea of dipping the slugs in water, scraping off the slime, releasing the slugs unharmed, then boiling the slime into a glue. The result, which won them a silver medal, was Slug-Glue: practical, environmentally friendly and $1.15 (retail) for 100 ml. "It's more expensive than white glue but cheaper than rubber cement," says Iris, displaying a detailed price chart.

Well over half the participants at the Canada-Wide Science Fair were girls, as were four of the five Queen's University scholarship winners. "There have been a lot of educational initiatives aimed specifically at girls in the last decade and a half, and they are really paying off," says bildinger Nicole Chaisson, assistant to the chief executive officer of Science North in Sudbury, Ont., and a judge at the fair. "For instance, we have a girls' science club at Science North, and we do a lot of training with teachers to make women feel more comfortable teaching science. These initiatives encourage discovery and a way of thinking that questions how and why things happen. This can lead to a strong interest in science." The Best in Fair Award went to Neha Datta, 17, of Calgary, who, under the guidance of a research scientist at the University of Calgary, discovered a novel gene for dyslexia, information that can be added to the growing body of research on genetics and dyslexia.

Neha, who has been volunteering in a laboratory since grade 7, has in the past discovered a link between fluorescent light and skin cancer and last year investigated an enzyme's role in connection with brain tumours, research that is now being looked at worldwide. "I just want to go abroad and push myself to learn everything I can about the world," says Neha. But she doesn't spend all her spare time on science: she's working towards her black belt in karate, she's taking grade 10 piano, and last year she placed second in her provincial public-speaking contest.

Science fairs have received criticism for having too much parent involvement in the projects, but students today are encouraged to seek help from adults, especially professional scientists who can...
ment students. At the international fair, the science is at such a high level that mentors are almost a prerequisite. Science fairs have also been criticized for catering to a small minority, and some school boards don’t encourage participation. “A number of years ago it was decided that science fairs weren’t necessarily the best vehicle for promoting science to all students,” says Ken Barker, a curriculum coordinator at Ontario’s York Region District School Board. “The public school system is supposed to provide opportunities for all students, but with the elimination of these science fairs, only a few students are left participating by the end.”

True enough, but that’s also the case with school sports, band competitions and public-speaking contests, says Barry Cameron, professor of geology at Acadia University in Wolfville, N.S., and a father of daughters who won top prizes in science fairs throughout their school years. Cameron adds that while only a small number of kids make it to the national fair, there’s widespread participation on the local school level, and it involves much more than just science. “In preparing an attractive and informative stand-alone display, most students are engaged in drawing, drafting, photography, writing and computer applications,” Cameron says. “And they must prepare a talk. This is great experience, helping students to develop confidence and the ability to speak in front of groups of people.” Cameron’s daughter Heather, 22, built her own radio telescope in high school and is now working on her PhD in astrophysics. Channa, 20, who submitted a different project on bees every year, is in her second year at university, majoring in biology.

Competition is part of the science fair tradition, and prizes include not only medals but money—sometimes big money. At this year’s Canada-Wide Science Fair, 113 medal winners received a total of more than $250,000, the largest individual award being $7,500 for Best in Fair (best junior, intermediate and senior grades received $2,500). And this year, Queen’s University has increased its $10,000 scholarships. The monetary awards are even bigger at the Intel fair, which this year drew 1,220 students from 35 countries. Francisco Bolguin, an 18-year-old from Mount Royal, Que., received one of three last Young Scientist scholarships, which is worth a staggering $50,000 (U.S.) to be applied at any university in the world. His project, called “Galactic Champagne,” detailed his study of the neutral hydrogen bubbles around the massive Wolf-Rayet star. Forthcoming from Fraser is a 36-page illustrated research paper, a computer presentation and business cards (carrying the words “Towards a better understanding of Wolf-Rayet stars”). He says simply, “Astronomy is my passion.”

There used to be plenty of government money to support science fairs. In the mid-1980s, federal funding of Youth Science Foundation Canada topped $400,000 annually. In the 1990s, funding was cut back dramatically, some years right down to zero. Science fairs now rely on sponsorship from service clubs, school boards and corporations. (Students themselves pay nothing or next to nothing to attend.) The Imperial Oil Charitable Foundation, through its Easi Kids Program, is a supporter of the Canada-Wide Science Fair, as well as the Calgary Youth Science Fair and the New Brunswick Science Fair in Moncton. It is also a sponsor of Investigate! Invent! and Innovate!, a science program that includes the Invention Convention, a Toronto-area fair in which students in grades 6 through 8 display their innovations (this year’s include an automatic dog feeder and a woman’s running shoe that turns into a high-heeled shoe—perfect for walking to the office). Imperial also sponsored an interregional science fair in Halifax earlier this year, where veterans at the Queen Elizabeth II Health Sciences centre were the judges of students’ projects. Imperial’s operations in Sarnia, Ont., support the Lambton County Science Fair and provides a summer job at the company’s Sarnia research centre for a winning student.

Although staging the Canada-Wide Science Fair is a monumental undertaking involving half a million dollars and scores of volunteers, communities vie for the honour. “There’s an element of prestige, as it raises the profile of your city and region,” says David Waddell, professor and acting head of the department of chemistry at Queen’s University and chief judge of the 2001 fair. Besides the competition itself, there’s a packed social schedule of local tours, barbecues and awards banquets.

The national fair is usually held at a university because it can offer dormitory space to the participants for the work-long event (most of the university residents have gone by the time the fair is held in May). Universities also have a wealth of science professors, graduate students and technicians to serve as judges. Each project is evaluated by at least five separate judges, and each judge spends half an hour interviewing the student or students involved and evaluating the work. For the 344 projects in Kingston, there were 270 judges, some from the university, some from industry, some from regional school boards, all of them volunteers. Why do they do it? “It’s extremely rewarding,” says Waddell. “You’re interacting with these dedicated, bright young people and implicitly encouraging them to continue their work. And you learn things. I’ve seen projects that are incredible, that I’d peg at the level of master’s degree work.”

What happens to all these projects and young scientists once the fair is over? Youth Science Foundation Canada admits that it needs to do a better job of tracking which winners take up science as a career and which projects find a commercial use. Louis Silcox recalls a boy who named his project on high-tech cameras into a successful business in Edmonton, another whose work on computing led to a career as an oil recorder, and a third whose computer program to keep track of helicopters around offshore oil rigs was bought by a company before the fair was over. Graduate students Thomas and Christine Ichim, a brother and sister from Kitchener, Ont., who won medals a few years ago for their work on vitamin C and cancer (their mother died of leukaemia), were among 12 Canadian individuals or teams saluted by Metro’s magazine last December for creativity, intelligence and a passion for making a difference to Canada.

Without science fairs, students would still do scientific research, Romana Peri believes. “You do it because you love it,” she says. “If you’re just doing it to win medals, you won’t go far.” But there’s something about the fair’s combination of sharing and competing that spurs young scientists on to higher achievement. “Scientists compete with one another like crazy,” says John Eaves. “This makes it all the more remarkable that they share their knowledge. The reason they do this is because, though they value their own personal success, they value the success of science even more.”
I well remember the first time I saw the Igloos Church in Inuvik, N.W.T. It was the early 1970s and it was my first visit to the Canadian Arctic.

Inuvik lies on the East Channel of the Mackenzie River Delta, some 100 kilometres south of the Beaufort Sea near the Inuit community of Aklavik. Even by Canadian standards the town is a new one, having been created on July 18, 1958, to serve as the administrative centre for the western Arctic.

Like any new arrival in town, I took a stroll down Mackenzie Road, the town's main street, to get my bearings and see the sights. The architecture was Universal Arctic – functional rather than decorative. For the most part, the buildings were single-storey wooden structures resting above the ground on wooden piles and painted in a variety of colours. Utilidors encasing the above-ground water and sewage lines, a common sight in the North, linked the buildings. It was early winter, there was a scattering of snow on the ground, and the fading Arctic light lent a gloomy atmosphere to the scene.

Then, as I progressed along Mackenzie Road, I suddenly came upon a large circular structure sited on the waterfront, a Byzantine-like dome, itself crowned by a cupola topped by a cross. It was an extraordinary and startling sight in what was then a town of squat rectangular buildings, but yet, at the same time, its commanding roundness seemed to sit more comfortably and congruously in that Arctic landscape than its shoebox-shaped counterparts might have. This was, I discovered, Our Lady of Victory church, better known throughout the western Arctic as the "Igloos church."

Its history I learned, was as intriguing as the structure itself. The church was designed by a local Catholic missionary, Brother Maurice Larocque, and was largely built by volunteers. Construction began in 1958 and took two years. The problem facing anyone building in the Arctic is that the permafrost (that layer of ground that remains frozen year round) must be shielded from melting or the building on top of it will shift and settle and, consequently, be damaged. Brother Larocque came up with a unique solution for the igloo church. It would have a double shell and would sit on a gravel-filled, saucer-like shape to be set into the ground. The design, Brother Larocque correctly deduced, would prevent heat from the building from transferring to the permafrost.

At nearly 23 metres in diameter and standing almost 21 metres (about six storeys) high, the church was not easy to build, especially in the Arctic, where supplies are not readily available. Much of the wood used in the construction was transported by boat from Fort Smith, N.W.T., 1,400 kilometres to the southwest. And, reflecting a spirit of community cooperation and involvement, the structure incorporated recycled local materials ranging from old hockey sticks to discarded metal sheeting.

The entire cost of building the church was $70,000, which was a considerable achievement even by 1958 standards. Our Lady of Victory was blessed by Bishop Paul Piché of Fort Smith on August 3, 1960.

Much has changed in Inuvik since my first visit nearly 30 years ago. But not the Igloos church. Now more than 40 years old, it is still going strong. "It's quite amazing," says Gary Smith, a maintenance manager with the local housing authority and a member of the congregation who has lived in Inuvik for a decade. "The structure has not shifted at all in any way. In this environment, that's a real tribute to its design and the people who built it."

Wayne Thomas
Hockey Dream

Wayne Gretzky is doing his best to help Canada win gold at Salt Lake City. The competition will be tough, but the hockey will be great.

By Alan Adams

Wayne Gretzky's life has changed considerably over the years, but there has always been one constant — hockey. From childhood playing on a backyard rink to superstar leading Canadian teams at international competitions, he has broken a multitude of hockey records and garnered an astounding number of top awards. But one has eluded him — Olympic gold.

Gretzky and his team-mates had a chance to win the top Olympic medal at Nagano, Japan, in 1998 but lost the
semifinal game to the Czech Republic. People who watched that game still talk about the image of Gretzky, alone on the bench, chin strap undone, hanging his head in agony after the Czechs won in a sudden-death shootout.

At the Salt Lake City games this February, however, Gretzky will get another opportunity to see his team win gold. But he won’t be on the ice. Instead, he’s Team Canada’s executive director, which means, among other things, that he had the final say on which men would wear Canada’s colours at Salt Lake City.

The country’s most famous athlete earns a imposing shadow over Team Canada. Gretzky’s presence is felt in the stands, in the dressing room, in the boardrooms and, where it counts the most, on the ice.

Hockey is a cornerstone of Canadian life and has, over the years, produced some of the nation’s greatest triumphs. Gretzky knows that hockey is more than a sport for Canadians; it is part of the country’s soul. “I can’t think of too many other countries that have the same passion for a sport as Canada has for hockey,” he comments thoughtfully. “Brazil for soccer maybe.”

Ice hockey first became an Olympic sport in 1920, and until the middle of the last century, Canada dominated international competition, winning six of the first seven Olympic tournaments. This was not surprising perhaps, given the fact that the sport originated here. But by the 1950s, hockey had caught on in other countries that have cold winters, and Canada found itself with some stiff competition.

The last time this country won Olympic gold in hockey was in 1952, when the Edmonton Mercurys represented Canada at the Oslo games, outscoring their opponents 21 to 14. Four years later, in Cortina d’Ampezzo, Italy, Canada, represented by the Kitchener-Waterloo Dutchmen, won bronze. It was our worst finish in 36 years.

The 1996 games signalled a new era in Olympic hockey. For the first time, the Soviet Union was gold, sweeping through the tournament without a loss. Olympic hockey was being played at a higher level, and Canada was at a disadvantage. While the Soviets were able to see their best players, Canada could not. The top Canadian players were members of the National Hockey League (NHL) and as such were classified as professionals and excluded from Olympic competition. While hockey was the occupation of the best Soviet players (many were part of the famous Soviet Red Army team), they were not officially paid to play hockey and were therefore not classified as professionals. Without its best players, Canada was no match for the Soviets and other top European teams, and in 1970 it decided to withdraw from international competitions that barred professional players.

Canadian fans longed to see a series that pitted our top players against the best Soviet players, and in 1972 we finally got our wish. But the historic 72 Summit Series did not unfold as Canadians had imagined. It was not as good as it had been in the past, and our confidence was shaken. The series was a wake-up call. Canada pulled up its hockey socks and took its international competition more seriously. And its efforts were rewarded — we won four of the five Canada Cup tournaments we hosted from 1976 to 1991, losing to the Soviet Union in 1981. But Canada was to receive yet another wake-up call this time at the inaugural World Cup hockey tournament in 1996, when we lost not to Russia or one of the other noted European teams, but to our neighbour, the United States.

The rule governing Olympic eligibility changed in the mid-1980s, allowing NHL players to participate in the games. But it wasn’t until 1995 that the NHL, the National Hockey League Players’ Association and the International Ice Hockey Federation were able to reach agreement on the shutting down of the NHL season for a period to allow players to compete for their countries in the Olympics.

Finally, in Nagano in 1998, a team of NHL players represented Canada. With Eric Lindros as captain, the Canadians were favoured to win a medal, but the team finished fourth, losing to Finland in the bronze medal game. Gretzky is philosophical about Canada’s diminished dominance in hockey. “I think you have to look at how hockey has grown internationally. Canada has had a lot to do with that,” he says. “We haven’t gotten worse. Everybody else has just gotten better.” And that’s good for hockey.

But hockey is our game and Canadians naturally want to win gold. No matter whether he’s a junior team, an under-18 team or Team Canada, says Gretzky, the expectation is that we should finish first.

And so, on a day in early September of this year, Gretzky was at Calgary’s Father David Bauer Arena, watching the rivalry of Canadian hockey — Mario Lemieux, Paul Kariya, Brendan Shanahan, Rob Blake, Chris Pronger, Eric Lindros and Patrick Roy — take part in the fourth and last day of breathtaking, long-expected work-outs.

The elite players that will be representing this country at Salt Lake City come from all corners of Canada’s hockey map and share something in common beyond hockey itself — Imperial Oil and its Escome. Since it began sponsoring Hockey Night in Canada radio broadcasts with Foster Hewitt in the 1930s, Imperial has been a fixture of Canadian hockey. Over the years, the company’s association with the game has broadened to include support for the Canadian Hockey Association (CHA), the national governing body for the sport. This includes sponsorship of Canada’s national teams (currently, Imperial is sponsoring Canada’s national hockey teams rather than the Olympics themselves) and

A member of Canada’s 1994 silver medal Olympic team (left), Paul Kariya (above and inset) was chosen for the current Team Canada, which will represent this country at Salt Lake City in February.
along with its Esso retailers and associates, support for amateur hockey. The company's involvement at the amateur level includes a diverse range of country-wide community initiatives, from the Esso Medal and Certificates of Achievement program, which honours minor league players, to the Esso Schools Program, which gives school-aged children the opportunity to learn more about our national pastime and to attend a major hockey event.

One reason the relationship between Imperial and the CAA has been so successful, explains Bob Nicholson, president of the CAA, is a shared belief that kids should be encouraged to challenge themselves and to shoot for their dreams. In order to do that, it's critical to support the education and the development of young people at the community level. "Imperial is always trying to make sure that we're both on the same wavelength regarding the values we are trying to instill in Canadian youth," Nicholson explains. "The most important job we do is to create a positive environment for kids and teach them values that will help them in their lives. Our aim is to enhance their leadership skills and teach them how to work in a team environment, how to deal with conflict and how to be a positive and humble - winner and a good loser."

One of Imperial's latest hockey initiatives is the Esso Sweaters Program, which enables Canadians to pool their Esso Extra points (earned when buying gasoline or any other product using an Esso Extra or Royal Bank Esso Visa card at Esso-branded service stations) to purchase jerseys for minor league hockey teams. "It costs a lot to outfit a team," says Todd Cornett, Imperial's manager of marketing sponsorships. "This program makes it a lot less painful for teams to acquire their uniforms." But it is the Esso Medal and Certificates of Achievement program that is the cornerstone of Imperial’s involvement with minor hockey. Since the program’s inception 20 years ago, the company has given out more than 10,000 medals honouring sportsmanship, dedication and improvement among girls and boys playing in the minor leagues. "The program is about much more than athletic achievement," says Cornett, who explains that hockey is not an end in itself but a means to an end. "We reward the attributes that will help build champions in life, not just on the ice."

It stands to reason, perhaps, that a number of NHL players and members of Canada's national teams have won Esso Medals of Achievement. Becky Kellar of Hagersville, Ont., who plays defence for Canada's National Women's Team, won a medal when she was eight. At the time, she was playing ringette, which is similar to hockey but played with a rubber ring rather than the harder hockey puck. Kellar recalls the impact that winning an Esso Medal of Achievement had on her. "Think of it," she says. "You're eight years old and your name gets called out for winning this medal. It was a huge thing. My friends came over and touched it. It was quite an honour." The medal has remained important to Kellar, who took it with her to the training camp in Calgary this fall.

Kellar's love of hockey led her to accept an invitation to join a girls' hockey team in Oshkosh, Ont. Later, she was recruited by Brown University in Providence, Rhode Island, and, finally, in December 1997, she joined the National Women's Team. A member of the Aranha Mighty Ducks, Paul Karras will be playing for Team Canada at Salt Lake City. As a young boy, he played for the North Shore Winter Club in Vancouver, and by the time he was 10, he had won three Esso Medals of Achievement. At age 17, he become a member of the Imperial-sponsored National Junior Team, competing in the World Junior Championships in both 1992 and 1993. Canada won gold both years. In 1994, Karras guided the Canadian Olympic team to a silver medal in Lillehammer, Norway.

Karras's game is perfectly suited to international hockey. With uncurvy vision on the ice and "soft hands," he is considered to be one of Team Canada's most creative players offensively. "He understands how to use the bigger ice because he's played on international teams for a long time," says Team Canada's assistant coach, Ken Hitchcock. "He has a North American attitude with European tendencies and will be hard to defend." Canadians were counting on Karras to play a big role at the 1998 games in Nagano, but an injury prevented him from participating in the tournament. In those Olympics, the Czech team that beat Team Canada in the semifinals included NHL star Dominik Haek, who played superbly, but few other big-name players. Karras describes his missing the tournament as the "biggest disappointment" of his career.

At the previous Olympics, Karras and his team-mates had come very close to winning gold, losing to Sweden in a sudden death shootout, and Karras, whose final shot in the shootout was saved by the Swedish goalie, had very much wanted the opportunity to help appease the loss to Sweden. The 1994 team had included no active NHL players, and the hockey world had not expected the team to make it to the final round, but it did. "It was a great feeling winning the silver when no one had expected us to win a medal," says Karras, but adds that he and his team-mates were nonetheless a bit disappointed at not winning gold, after coming so close.

Imperial has played a key role in the development of women's hockey in Canada, explains Bob Nicholson. "The company's early sponsorship of women's hockey contributed significantly to its growth," he comments. "When the first Canadian women's championship was held in 1992, there were approximately 5,000 players in Canada, representing 345 teams. Today, there are 51,000 players on 3,200 teams. Esso has been behind the growth all the way."

Cassie Campbell, a forward with the women's national team, which will represent Canada at Salt Lake City, cites the Esso Fun Days program as being instrumental in the development of women's hockey. The program provides girls and women of all ages with a day's introduction to the basics of hockey free of charge. "Esso Fun Days helps girls think about hockey both in terms of playing the game and
watching it," says Campbell enthusiastically. She adds that the program also helps mothers and grandmothers develop an interest in the game, so they can better support their daughters and granddaughters when they play hockey.

Equally important in terms of promoting women's hockey, explains Campbell, was Imperial's decision to sponsor the Women's National Hockey Championship in 1995. "People connect Esso with hockey," she says. "So having the company behind the tournament gave it instant credibility, and people took more interest in it." The women's national championship is an important scouting ground. "The national team coaches use the championships to scout future team members from across the country," states Campbell. "They're a great feeder system for our elite programs."

Nicholson says that he can't imagine where hockey would be in this country without partners like Imperial. "If we didn't have sponsors like Esso, we'd be looking at more user fees for kids to play, which means that many kids just wouldn't be able to play." Grekly's comment goes further. "There wouldn't be minor hockey without Esso support. Imperial is an integral part of a small-town Canada as the neighborhood link."

And Grekly can't think of a better way of火爆 than when the kids who play minor hockey present their trophies to the adults who support the game. "It's a wonderful thing. It's like having a neighborhood association," he says.

"There wouldn't be minor hockey without Esso support. Imperial is an integral part of small-town Canada as the neighborhood link."

A People's Gallery

Whenever I pass the Art Gallery of Ontario, or the AGO, as it is more commonly called, a sense of pleasure washes over me. "We learned just how tough those other teams are. We want to win and that's our goal, but we realize we could just as easily come fourth or sixth as first."

This lack of certainty about our ability to win may be disappointing to Canadians, but it is a sensibly positive statement about international hockey. Hockey is simply much better when played by teams of fairly equal ability. Magnus was great hockey. The games were quick and the play swung like a pendulum. One minute a team was on the attack; the next it was in full reitre. Olympic hockey is hockey played at full throttle, all the time. It's exciting, and the drama is magnified by how much the players mean to those playing and the countries they represent.

As the very least, Salt Lake City will be a tremendous tournament. At best, it will see Wayne Gretzky's dream realized. He and his players are certainly giving it their all.

Fans of Canadian hockey can't ask for more.

Grektey also talked about the "healing power of art" and the quiet reflection it encourages. As I walked out of the gallery on a grey day in late fall when the world was full of woe, I felt a little restored. - Sarah Landry