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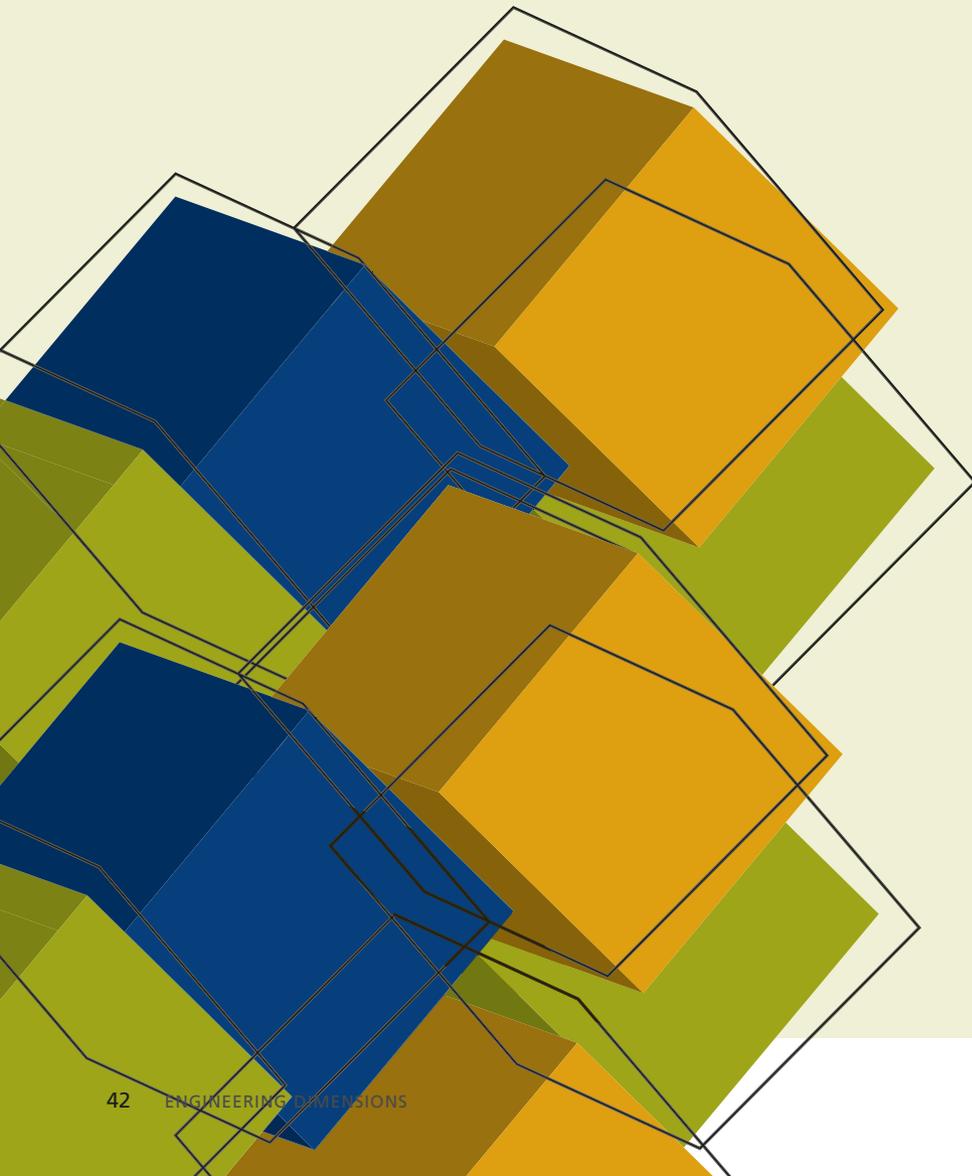
Building a foundation for education: 50 years and counting

By Nicole Axworthy

EVERY STUDENT WANTS ONE. Few students get them. University scholarships are wonderful, coveted things: according to one student, they are the next best thing to money growing on trees. They are also brilliant resume boosters.

For the last 50 years, the Ontario Professional Engineers Foundation for Education (FFE) has provided scholarships to engineering students in Ontario, to encourage them to strive for academic excellence, develop their leadership qualities and pursue careers in the profession. It is also helping to maintain engineering's long-standing reputation for high standards by recognizing technical excellence and promoting the development of future engineers.

The FFE is an independent, not-for-profit charitable organization established by PEO in 1959, and now managed by PEO and the Ontario Society of Professional Engineers (OSPE). To date, it has been supported almost exclusively by PEO member donations, which have grown from a total of \$3,500 in the foundation's first year, to \$120,000 in 2008. FFE President Stephen Jack, P.Eng., says donations have increased by 65 per cent in the last four years, because of greater member awareness of the work of the foundation, an increase in dona-



tions from chapter-sponsored charity events, and industry fundraising.

Reward and recognition

More than 90 per cent of FFE donations go directly to students pursuing a degree at one of Ontario's 15 universities with a Canadian Engineering Accreditation Board (CEAB)-accredited engineering program. One way is through annual entrance scholarships, valued at \$1,000 each, awarded to students (one male and one female at each university) who have a high academic standing in their final year of high school.

By receiving an FFE entrance scholarship, John-Wesley McGraw learned he had the highest entrance average of all his peers—"which is definitely a good feeling," he says. Now a first-year chemical engineering student at Laurentian University, he adds: "The award has given me an extra push to study. Having received this scholarship, I am motivated by the fact that I am intellectually capable of achieving the best among my peers. Thanks to this extra motivation, I can proudly say that I achieved a 91 per cent average in the first semester of first year in my program."

The FFE also awards undergraduate scholarships worth \$1,250 to engineering students in subsequent years of their study. They are awarded to students who exhibit exceptional role model qualities through participation in professional affairs and extra-curricular activities while maintaining above-average grades. The number of scholarships given at each school varies according to the size of its engineering student population.

Lakehead University engineering student Robert Martin was both relieved and excited to win an FFE undergraduate scholarship. As a Nordic ski racer, he is spreading out his mechanical engineering degree over six years so he can maintain his grades while racing competitively. "Since racing is expensive, coupled with the fact that I will pay for two extra years of

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Victoria Lee

school, you can imagine that receiving \$1,250 right in the middle of ski season was a godsend!" he says.

Some students are lucky enough to receive an FFE scholarship more than once. Brian Nhan earned a scholarship in every year of his undergraduate degree at the University of Windsor. "I was honoured to have my academic achievements recognized throughout my undergraduate degree. The acknowledgement aided my studies as a form of external motivation to do well and strive to receive the award each forthcoming year."

With the scholarship money, Nhan was able to purchase tools—"those required, suggested, and those I personally deemed useful"—that contributed to his academic successes. "In most cases, I was able to devote more time to academics by not having to work part-time jobs for the purpose of covering the costs of university."

The foundation also awards the Professional Engineers Gold Medal (with no cash value) to a graduating student at each university who achieves the highest standing in the final examinations of his or her last year. Queen's University mechanical engineering graduate Victoria Lee received the gold medal in 2007. Although she also received numerous other awards, like the Canadian Society of Mechanical Engineering Gold Medal, C.D. Howe Memorial Foundation Scholarship, and NSERC Research Award, she says: "The PEO gold medal is especially significant to me as it represents the highest engineering ideals and standards to which I have always strived.

I am extremely passionate about engineering and committed to using my skills to benefit society. I am very grateful to receive such a prestigious award from the foundation."

David Wilkinson, P.Eng., distinguished university professor and dean, faculty of engineering, McMaster University, says the Professional Engineers Gold Medal is one of the most highly revered forms of recognition his students at McMaster can obtain. "We proudly acknowledge the scholarship achievements of our students at our annual McMaster University Faculty of Engineering Awards assembly, featuring the recipients of the Ontario Professional Engineers Foundation for Education at the start of our event," he says.

New recruits

In 2007, the FFE welcomed York University and the University of Ontario Institute of Technology (UOIT) into the scholarship program after both universities received final CEAB accreditation of their engineering programs.

Since then, UOIT has awarded eight undergrad scholarships and two gold medals. Krista Elliot, academic advisor, UOIT, says that because FFE scholarships are engineering-specific, students are more aware of them. "[Students] recognize it as an important scholarship since it is given by PEO, the same body that licenses the profession they are entering," she points out. "Scholarships from PEO assist students who have earned it: in university, grades are important, but the criteria for these scholarships require a student to possess a background with a

combination of academic achievement and leadership, which recognize students for the skills that will make them successful engineers.”

Information about the foundation’s scholarships and gold medal award are listed in student handbooks, and posted on faculty websites and the FFE website (www.penged.on.ca). Elliot of UOIT says she also posts this information on the university’s awards and scholarship website—students log into a portal to access email, important messages and various student service sites like this one. As the academic advisor to engineering students, she also mass emails students to inform them of scholarship information.

The engineering schools handle all applications for FFE scholarships and awards and, in most cases, the dean of engineering or an awards committee of the engineering faculty selects the award recipients.

York University computer engineering student Dominik Swierad was one of two winners of an FFE scholarship at his university this year. “Quite frankly, it was the single most useful scholarship I have received in my four years at York,” he says. “I say this because it allowed me to fund a \$1,000 course at the University of Toronto in VLSI systems and design (for credit at York). York does not

offer the course and, until the scholarship, I was wondering if I could afford to take it.... Up until the course, I was pretty much set on law school. But the course, combined with McGill accepting me into their integrated circuits group, made me put law into question. While I still haven’t decided on law vs. master’s, the mere fact that the scholarship allowed me to experience a deeper field of my interests in engineering is, well, for lack of a better term, awesome!”

Dollars and sense

The dramatic increase in university tuition costs in Ontario over the last few decades is a big concern to students—and their wallets. Ontario’s tuition cap was removed in 1997, which allows each university to raise tuition fees as it sees fit. At that time, the provincial government made public its decision to regulate only undergraduate arts and science programs and to allow for deregulation of professional programs like engineering.

At the University of Toronto, tuition plus incidental fees for first-year engineering students is just under \$10,000 this year. So, in addition to the recognition that scholarships give to students, “the monetary component goes a long way towards alleviating the financial burden on our students,” says Pierina Filippone, U of T’s assistant registrar of scholarships and financial aid, faculty of applied science and engineering.

The FFE has donated over \$2 million in scholarship money since its inception, making it the top donor for annually donated scholarships to

engineering schools. At Ryerson University, a total of \$112,000 has been awarded to over 100 engineering students since 1993, and the foundation is now listed on the university’s wide donor recognition wall in its new George Vari Engineering and Computing Centre. “These awards provide real incentives for our students,” says Janet Nankivell, director of development, faculty of engineering and applied science at Ryerson. “They help them financially in the short term, and they are prestigious awards that the recipients can put on their resumes in the longer term.”

Considering the relatively large number of recipients of the FFE scholarships each year, the beneficial effects are far-reaching. “Imagine how many students were motivated by this award to study that little bit harder, or to take on extra challenges, like extra-curriculars or learning beyond the scope of their classes, since they have been reassured that they are capable of doing so,” says McGraw of Laurentian.

Beyond the classroom

In November 2003, an FFE scholarship called Leaders for the Future was initiated to recognize the leadership qualities of Ontario engineering students selected for overseas assignments with Engineers Without Borders (EWB). EWB was formed in 2000 by Parker Mitchell and George Roter, who were interested in tapping into the Canadian engineering profession—a group they believed to be passionate about advancing the state of the world—to



Queen’s University mechanical engineering graduate Victoria Lee received the Professional Engineers Gold Medal in 2007.

improve the lives of people in developing countries through the application of small-scale technology. The organization relies on senior engineering students for overseas placements to drill wells, build schools and, most importantly, help build knowledge and capacity among local entrepreneurs and organizations. To be eligible for the \$2,000 scholarship, students must be outstanding leaders in their school or community and have demonstrated a commitment to people in developing communities.

Janna Hamilton, EIT, a University of Guelph graduate of water resources engineering, received the FFE-EWB Leaders for the Future scholarship in 2007, which helped pay for her tuition and housing while she volunteered in Ghana, Africa (see next page). University of Toronto student Mina Shahid also received an FFE-EWB scholarship, and says it was another EWB volunteer who made him realize how valuable an overseas volunteer experience would be. "What really struck me were the connections he made between studying engineering, working in international development and the unique skill set that engineers had to offer in solving the most complex problem of our time: poverty," he explains. "I'm a firm believer that engineers have so much to offer to this world beyond their technical knowledge and if there was one piece of advice I'd give to incoming engineering students, it would be to get involved in extra-curricular activities. The opportunities

for personal and professional development are endless."

Another, lesser-known role of the foundation is to administer the Professional Engineers Benevolent Fund, which provides short-term assistance to engineers in financial need. Since it began in 1986, the fund has helped more than 80 engineers.

The foundation also maintains a fund to enable tax deductible donations and sponsorships of PEO's Engineer-in-Residence program, which provides volunteer engineers to support science and mathematics curricula in elementary and secondary schools across Ontario (see "Classroom outreach: The engineering reality show," *Engineering Dimensions*, July/August 2008, p. 43).

Continued support

The foundation's board members and volunteers work hard to ensure their continuing relevance and viability. President Jack says the board is working to encourage more PEO chapters to organize events on behalf of the foundation and to involve more chapter representatives at awards ceremonies to promote licensure and awareness of PEO and OSPE. He says their most

important objective, of course, is to maintain an active scholarship program by providing adequate and continuing funding for the scholarships with member donations and corporate funding.

Says Dean Wilkinson of McMaster: "Your organization should be applauded on the role it has played for five decades in the support and advancement of professional engineers in our province. Your programs, providing scholarships to engineering students, financial assistance to professional engineers in need, and the coordination of volunteer support in the classroom are commendable initiatives."

Yet even after 50 years, only about 4 per cent of P.Engs include the FFE in the list of charities they support annually. Donations are tax deductible and can be made quickly and easily by checking the tick-off box on the PEO annual fee invoice, or downloading the donations form at www.penged.on.ca/donations.

The FFE will celebrate its 50th anniversary at its annual meeting on June 5. Σ



FFE board members, left to right: Noreen Calderbank, P.Eng., Corneliu Chisu, P.Eng., Márta Escedi, P.Eng., Derek Wilson, P.Eng., Peter Cowherd, CMA (treasurer), Richard Weldon, P.Eng., Stephen Jack, P.Eng. (president), Ken Lopez, P.Eng., Catherine Karakatsanis, P.Eng., and Patricia Orr (administrator).

EXPERIENCES THAT LAST A LIFETIME

By Janna Hamilton, EIT

Education happens not only in the classroom, but often in the most unexpected places and in the most unexpected ways. Two years ago, I was given an opportunity to live and volunteer in Ghana, West Africa, for four months with Engineers Without Borders Canada. Shortly before I left to head to Ghana, I was honoured by being offered a Leaders for the Future scholarship from the Foundation for Education, enabling me to continue to pay for my tuition and housing while still pursuing the opportunity of a lifetime by volunteering overseas for a summer.

When I arrived in Ghana in May 2007, I was overwhelmed by the heat, the noise, the people, the food—everything! No longer were there knives and forks for my meals—fingers only. No longer were there flushing toilets or running showers—public latrines and buckets of water became the substitute. My bedroom was a little cement room with a mosquito-net bed covering and a plastic patio chair upon which I stowed my few belongings. Roosters, goats and laughing children replaced my alarm clock buzzer every morning. At once, I loved the adventure and yet missed the small comforts of home. Without Internet or Canadian co-workers, everything I had ever known was gone, but it was everything I had dreamed about: working closely with my Ghanaian co-workers at the Central Gonja District Water and Sanitation Team, I knew I was right where I should be.

When I arrived at my workplace, my first task was to learn everything I could about the culture, about the programs that were run by the water and sanitation (WatSan) team I was working with, about the political reality of my district, and even learn some of the Gonja language. My second task was to work collaboratively with my Ghanaian co-workers to determine the strengths, weaknesses, opportunities and threats of our workplace, thereby defining what I would be working on for the remainder of my time there. I worked internally with the three members of the WatSan team to increase their capacity to communicate effectively, improve their computer skills and refine their goals for water and sanitation training in our district. Out of the office, as I visited community wells, private latrine projects and small town piped water systems, my team taught me about the cultural traditions and environmental barriers that kept community members from following safe WatSan practices.

I want to tell the story of what may forever be one of the most memorable, motivating and humbling moments in my life. I was visiting a rural village for a couple of weeks—a village that had no clean water source, no latrines



Janna shares a meal with some Ghanaian friends from the village of Mankpang, Africa, during her volunteer placement with Engineers Without Borders.

and no electricity. While I was there, I ran out of clean sachet water. Although a short walk or bus ride would have taken me to someone from whom I could have purchased more water, I struggled to understand what it would be like *not* to have that option; *not* to have an extra bit of cash to just buy clean water. At this, my weakest moment emotionally during the summer, I found myself sipping from my host family's water pot; sipping water that reminded me of a school-ground mud puddle. As I lifted the milky water to my mouth, my heart jumped into my throat. I was unable to believe what I was about to do. Regardless of my training in water resources engineering, regardless of knowing my system couldn't handle it, I drank the water. I shouldn't have drunk it. It made me sick. But, at the same time, those sips of water inflamed in me a passion for water resources and global development that couldn't be matched by any other experience.

As I reflect on what the Leaders for the Future Award offered me two years ago, I want to quote a sentence from a short essay I penned on leadership before I left for Ghana: "Leadership is about enabling empowerment of others and creating real change driven by an unstoppable passion." Ghana, EWB Canada and the Professional Engineers Foundation for Education allowed me to find that unstoppable passion in a little cup of murky water. As I work today just outside of Kitchener with the engineering firm AquaResource Inc., I am still driven by that memory. Whether I am in a little town in southern Ontario or a little town in West Africa, my love for water resources remains. My thirst for learning, my desire for adventure and my quest for excellence drive me day by day to accomplish everything I can with as much zeal as possible. Σ