Program opening door to untapped expertise

By Michael Mastromatteo

Opportunities for career-related employment for internationally trained engineering graduates (IEGs) received a modest boost via recent success stories from the Career Bridge program.

Launched in June 2004 by the Ontario government, Career Bridge is an internship program aimed at helping internationally qualified professionals gain valuable, career-related paid work experience in Ontario. Career Bridge is a working group of the Toronto Region Immigrant Employment Council (TRIEC), an organization of regulators, government officials, community leaders, employers, and immigrant service providers working to overcome barriers to employment for new Canadians.

PEO is actively involved in TRIEC through the efforts of CEO and Registrar Kim Allen, P.Eng., who acts as liaison between Career Bridge and TRIEC.

Career Bridge is of special significance to engineers given that nearly 40 per cent of the pre-screened program applicants list engineering as their chosen occupation. As of July 2004, however, only about 7 per cent of the program's placements were in engineering-related work.

Those attending the June 17 official launch of Career Bridge included (left to right) Mark Adler, president, Economic Club of Toronto, Ifeanyi Uzoka, Career Bridge intern, Don Drummond of TD-Canada Trust, David Miller, Mayor of Toronto, Mary Anne Chambers, Ontario Minister of Training, Colleges & Universities, Lucille Joseph of Career Bridge, John Tory, honorary chair of Career Bridge, and Kelly McDougald of Bell Canada.

Under the program, potential interns are assessed for eligibility to work in Canada, English language skills, post-secondary education and professional-level international experience. Career Bridge officials seek to match qualified interns with employers across the greater Toronto area, many of whom require skilled workers in such areas as engineering, information technology, business or health services.

Interns work with coach-mentors who supervise their work and issue regular progress reports to Career Bridge. Placements are generally four to six months in length. Participating employers pay for their internships directly to Career Bridge. From the internship fee collected (a four-month internship is about $10,000), Career Bridge pays the intern's stipend, does all the paperwork, and covers the workers' compensation and payroll taxes related to the internship.

Career Bridge director Barbara Nowers says the internship program is of special benefit to engineers and engineering concerns given the extensive talent pool available, and the number of IEGs eager to return to the profession and pursue full licensing. She said engineer-employers can "test drive" IEGs seeking their first Canadian work experience. Not only does the program allow IEGs to advance their qualifications toward professional licensure, it also allows employer-engineers to fill staffing needs with experienced, mature personnel. The typical Career Bridge employee has an average of eight years professional experience.

"It's really a win-win situation for all parties," Nowers said. "In addition to being a low risk project for the employer, there's the bonus that the interns are highly skilled and motivated to make a significant contribution, simply because the internships give them the opportunity to work in their chosen field."

To take part in the program, an employer posts an appropriate internship with Career Bridge, reviews suitable applicants and makes its final selection. These steps come at no cost to the employer. Once an intern is chosen, Career Bridge invoices the employer for the intern's stipend.

As of late July, some 383 IEGs have enrolled with Career Bridge. While only five of these IEGs have come up with engineering placements, program officials are optimistic that the numbers will soon increase. In the meantime, two recent placements have demonstrated the value of Career Bridge for engineers and IEGs.

In December 2003, Leonor Adel of Toronto began a Career Bridge internship under Mila Jokic, P.Eng., a facilities project engineer for the Regional Municipality of Halton. Adel, who holds a bachelor's degree in civil engineering from the University of the Philippines in Manila, is involved primarily in construction project management for the Halton region. "Most of my work before coming to Canada has been in structural design, so what I'm doing right now is not directly related to my experience," Adel told *Engineering Dimensions*. "But I'm thankful for the opportunity to get back to my engineering profession in any way, and explore another dimension of civil engineering."

Adel added that the Career Bridge experience appears to be addressing many of the problems associated with newcomer access to the professions. "Career Bridge gave me back my dignity, and the high hopes and dreams I used to have in getting back to and advancing my civil/structural engineering profession," she said. "It has opened up a door of opportunities for me to get that most-sought-after Canadian experience, to expand my network of engineering professionals who are valuable sources of information and inspiration for me in pursuing professional licensing as an engineer,

and to upgrade my technical skills to get to that level of excellence that Canada expects from immigrants."

In a similar example, Steve Andrews, P.Eng., the manager of engineering development for the Town of Markham, recently engaged the services of IEG Mansoor Ali to help with an analysis of the town's sanitary system. With some 18 years' experience working in the building and construction industry in his native Karachi, Pakistan, Ali was well suited to help assess Markham's sewer infrastructure needs.

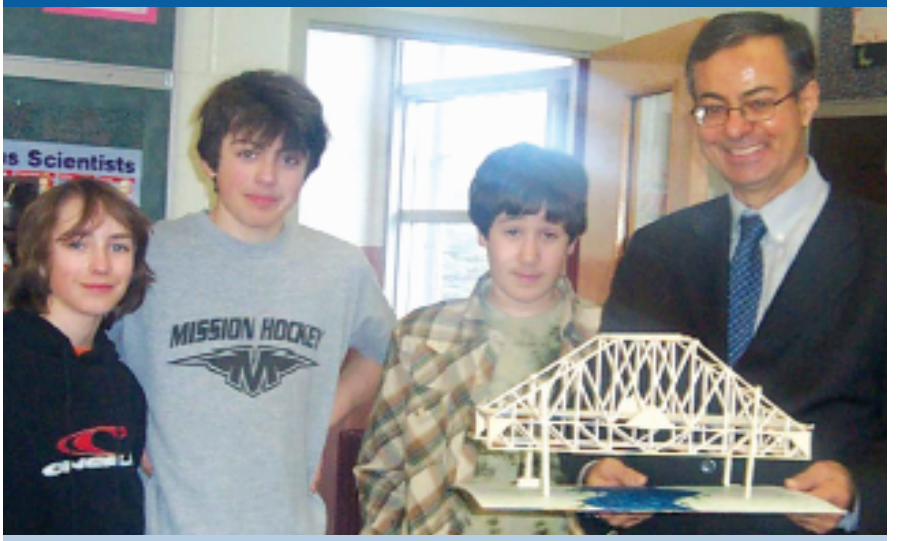
"One of Mansoor's tasks is to analyze a sanitary drainage system serving an equivalent population of about 40,000 in the southwest area of Markham," Andrews recently told TRIEC officials. "It became immediately clear the vast experience Mansoor brings to Markham."

Ali, who holds a bachelor's degree in civil engineering from a university in Karachi, and a master's degree in water and environmental management from the United Kingdom, arrived in Canada with his family in May 2003. As with many IEGs, he had difficulty finding suitable career-related work, and took a series of "survival jobs" in factories and convenience stores.

After resisting the urge to return to Pakistan, Ali registered with Career Bridge, and in early June began his internship as a sewer and watermain modeling engineer in Markham. "After only a few weeks of internship, I feel that my skills, experience and qualification are useful to the Town of Markham, and that I am now contributing to Canadian society," Ali said.

Steve Andrews believes Career Bridge allows employers to tap into readily available, but underutilized engineering talent. "This program could and should be expanded to try and give every professional engineer a chance to prove his or her worth," he said. "More and more engineering firms and organizations, both private and public, have to come forward to support such an initiative." (For more information on Career Bridge, see "Practitioners urged to act as ambassadors for licensure," pp. 48-49.)

Toronto Humber Chapter outreach



Nabil El-Khazen, P. Eng., (right) vice chair of the PEO Toronto Humber Chapter, and three Grade 7 students from Transfiguration of Our Lord school, demonstrate a bridge design project at a recent student outreach effort organized by the Toronto Humber Chapter. El-Khazen organized a series of presentations to gifted students on structural engineering, bridge design and building plans. He also helped supervise the students' own building projects and later delivered a talk on the distinction between science and engineering.

PEO seeking better appreciation of limited, provisional licences

By Michael Mastromatteo

PEO continues to press its case for having limited licence holders recognized as persons qualified to certify some records of site condition under the Ontario environment ministry's Regulation 153/04 (*Brownfields Statute Law Amendment Act*, 2002).

As reported in the July/August *Engineering Dimensions*, PEO has expressed concern over the environment ministry's recent decision to expand the list of qualified persons authorized to undertake aspects of site assessment, but at the same time excluding PEO's limited licence holders from that list.

PEO has argued that including limited licence holders on the expanded list of qualified persons would ensure greater public safety and accountability in site remediation.

The accountability issue was raised following discovery that some practitioners added to the qualified persons list under the latest revision are unlicensed title holders, and are therefore unregulated by provincial law.

A delegation of PEO officials met with environment ministry staff on July 16 to discuss ways of recognizing the credentials of qualified persons undertaking site assessments. During the meeting, PEO officials suggested there is no need for the ministry to create its own system to assess qualifications of those involved in site remediation when professional regulatory bodies, such as PEO and the Association of Professional Geoscientists of Ontario, already license members to standards acceptable to the environment ministry.

Environment ministry officials indicated some willingness to consider alternative forms of certification and they agreed to inform PEO of terms of reference for a revised certification program.

A limited licence is issued to an individual who does not meet the criteria for full licensure but who has developed com-

petence in a certain area of professional engineering. Limited licensees must hold an engineering technology degree or diploma, or a four-year honours science degree, and must have 13 years experience, including their academic training. One year of the experience must be under a Canadian P.Eng. and the last two years must be within the practice of engineering to which the limited licence will apply. PEO argues that limited licence holders qualified for site remediation work are fully accountable under the *Professional Engineers Act*.

Meanwhile, PEO Registrar Kim Allen, P.Eng., is attempting to rally other provincial ministries in support of limited licence holders as persons qualified to play a role in contaminated site redevelopment.

In a June 28 letter to Minister of Training, Colleges and Universities Mary Anne Chambers, Allen suggested that lack of familiarity with the nature of PEO's sub-licences might have contributed to the limited licence being overlooked by the environment ministry in its assessment of qualified persons.

Above: Kim Allen, P.Eng., PEO Registrar
Below: Mary Anne Chambers, Ontario Minister of Training, Colleges & Universities

Allen pointed out that the provisional licence, for example, has been praised as an effective regulatory vehicle for promoting access to the professions by internationally qualified candidates. PEO hopes to draw on the effectiveness of the provisional licence in the access issue to make a case for the suitability of the limited licence in the Brownfields question.

"PEO is appealing to [the colleges and universities] ministry for its help in promoting the merits of these two licence categories with your colleagues," Allen said, "and specifically, we respectfully request any support you may be able to provide in assisting with the removal of the limited licence exemption from the definition of qualified person and the addition of the provisional licence to Phase One of environmental site assessments as detailed in Ontario Regulation 154/03. Holders of limited and provisional licences offer the highest level of public accountability, since they are regulated and governed by effective public statutes, and are acting within a disciplinary and enforcement system."

Delays arise in BC merger plans

By Michael Mastromatteo

Legislative changes formalizing a merged regulatory association between British Columbia's professional engineers and engineering technologists/technicians have been put on hold until the spring of 2006.

At its June 2004 council meeting, the Association of Professional Engineers and Geoscientists of British Columbia

(APEGBC) voted to ask the provincial government to hold off on revising BC's *Engineers and Geoscientists Act*, which would formally allow for the merger.

The province's engineering and technologist/technicians associations have been working towards a form of merger since May 2003.

As reported in the May/June 2004 *Engineering Dimensions*, the merger involves repealing current legislation governing BC's technologists and technicians and bringing the responsibilities together in a combined regulatory structure under a new engineering and geoscience professionals act.

The merger plan was originally scheduled for introduction into the BC legislature in its summer 2004 session. Act revisions were then re-scheduled for the spring 2005 session, but have again been put off until the following year.

A stumbling block on the path to merger stemmed from concern among some British Columbia P.Engs about how guidelines being developed for technologists and technicians might impact on professional engineering practice. APEGBC council subsequently agreed to put the technologist practice guidelines work on hold until such time as APEGBC and the technologists' association made more progress on due diligence and agreement principles.

As reported in APEGBC's *Innovation* magazine, however, both the engineering and technologist regulators remain fully committed to a merged regulatory association, despite the series of postponements. APEGBC, for example, "unanimously reaffirms the vision that the practices of engineering and geoscience technology are components of the practices of professional engineering and geoscience, respectively, and that these practices should be regulated in a common fashion to ensure full accountability."

Online payments, process improvements, info tracking and reporting improve PEO service to licensees and interns

By Michael Mastromatteo

PEO has recently launched several initiatives designed to improve service to members and provide enhanced information about association operations.

On May 15, professional engineers and those registered in the Engineering Internship Training program (EITs) became able to pay PEO fees through the PEO website, www.peo.on.ca. P.Engs, EITs, provisional, temporary and limited licence holders can also now update their addresses on PEO's database through the website.

The online fee payment service provides access to a secure, real-time, fee payment system. Payments can be made on VISA, MasterCard and American Express, and all credit card information is deleted once payments have been processed. Fees may also still be paid through the traditional mail-in method. The address update service promotes greater accuracy by having members update their own addresses, which are instantly incorporated in the PEO database.

The online fee payment and address update services are an expansion of a February 2004 pilot, which included online registration for PEO's annual general meeting and Order of Honour gala.

"In today's busy world, we want to make it as convenient as possible for members to pay their licence fee," said PEO Chief Executive Officer Kim Allen, P.Eng. "Once we are fully satisfied with the performance of the online payment system, we expect to expand it to include purchasing of guidelines, registering for exams and events."

PEO website visitors can now also find the latest information on PEO operations and issues of concern to the profession through a new *Registrar's Report* publication (www.peo.on.ca/registrar/Registrar_Report.htm). The new publication, published semi-monthly at present, is part of PEO's ongoing commitment to accountability and transparency in how it does business. Previously, Registrar's Reports were prepared to coincide with PEO Council and Executive Committee meetings and issued as part of the agenda packages for the meetings, reaching only a small audience.

The new publication builds on the enthusiastic reception to *Questions and Answers on PEO Operations*, which was prepared for delegates to PEO's 2004 annual general meeting. The 31-page booklet (www.peo.on.ca/events/agm/2004_AGM/Q&A_PEO_Operations_April_2004.pdf) covers a range of topics on PEO operations, including budgets, expenditures and business planning. The publication aims to answer members' questions on both past expenditures and PEO's future operations.

Among the new activities highlighted in the Q & A is Activity-Based Costing (ABC), which was introduced earlier this year to improve the transparency and efficiency of PEO's financial operations and help PEO establish appropriate fees for service by identifying the total costs of PEO activities. Using ABC, cost elements (or expenses) can be linked to specific activities, programs or processes under PEO's core business functions, such as licensing and registration, regulatory compliance, and standards and regulations, and functions that support the core business, such as policy and communications, administrative services, information technology services or human resources.

To provide ABC information on human resource costs of programs, processes and activities, on June 14 PEO staff began to record the time spent each day in support of specific work projects. It is hoped this "staff contribution recording system" will not only provide historical ABC information, but will also be of assistance in resource planning, budgeting and work scheduling.

Daria Barbaie, P.Eng., PEO director, administrative services, says the objective of all the new initiatives is to add value for members at large. "PEO members are naturally curious about how the association uses its financial resources and these new initiatives, such as online fee payment and online changes of address, are our way of showing not only that we are interested in adding convenience, but also that we are eager to show that we are working to make our overall operations as effective and efficient as possible." He said that in its first 30 days of operation, PEO recorded 1781 online fee payments totaling $346,059.33 and 1107 address changes.

***The new publication builds on the enthusiastic reception to* Questions and Answers on PEO Operations**

National Engineering Week 2005 plans underway

By Judy Saurette

The 14th annual National Engineering Week (NEW) will take place from February 26 to March 6, 2005. Ontario's engineering and technology professionals and students are encouraged to consider NEW activities that will help raise public awareness of the importance of engineering and technology and encourage young people to consider careers in these fields.

Last year's NEW was a record-setting year in the province, with more than 100 volunteer-organized events in 35 communities. The NEW Ontario Steering Committee hopes to surpass those numbers in 2005.

Provincial materials like the *Globe and Mail* newspaper supplement and display poster will highlight the "caring" side of the profession. The objective is to show how engineers and engineering technicians and technologists devote themselves to the well-being of people at home and around the world using their expertise in biomedicine, transportation and construction safety, technology for the disabled and more.

Volunteers will be encouraged to organize hands-on activities for children and youth that demonstrate real-life applications of the math and science they study in school. "Engineering Week gives us a great opportunity to have fun, raise the profile of the engineering and technology professions and gain satisfaction by contributing to the future of the next generation," says NEWOSC Chair David Tsang, C.E.T.

The Engineering Week Ontario website (www.engineeringweek.on.ca) contains resources for event organizers and outlines some activities from 2004.

Students take part in an engineering challenge to create a scale model of a device to hold up a "videotron" at a London, Ontario, sports and entertainment complex. The project was one of the activities organized during National Engineering Week 2004. Plans for next year's NEW are now underway.

Also on the NEW website are details of the National Engineering Week Ontario Steering Committee (NEWOSC) funding assistance program. The deadline for funding applications is November 12, 2004.

PEO discusses alternative Bill 124 certifications

By Michael Mastromatteo

PEO is standing by its decision of withdrawing from a plan to help administer *Ontario Building Code* (OBC) examinations and maintain a registry of qualified practitioners under the Ontario Ministry of Municipal Affairs and Housing's *Building Code Statute Law Amendment Act* (Bill 124).

Designed to overcome delays relating to issuing building permits and construction of new buildings in Ontario, Bill 124 makes it mandatory for design and building professionals to demonstrate familiarity with the OBC by passing the province's building code exams.

The housing ministry says Bill 124, scheduled for full implementation in July 2005, will streamline the building regulatory system, increase the safety and quality of building construction in Ontario, enhance accountability, and create a more transparent and innovation-friendly regulatory environment for the construction industry.

PEO initially agreed to administer the exams to professional engineers seeking to qualify as designers, and to maintain the registry of the PEO members who have qualified. However, it became apparent that by agreeing to participate in the building code certification process, PEO would be duplicating a system already administered by the housing ministry. As well, a duplicate building code certification system was seen as an unnecessary cost increase to be borne by PEO.

At its June 18, 2004 meeting, PEO Council voted to back away from taking part in the OBC certification regime. PEO Registrar Kim Allen, P.Eng., notified Housing Minister John Gerretsen of Council's decision in a June 30 letter.

At its June 18, 2004 meeting, PEO Council voted to back away from taking part in the OBC certification regime.

"Notwithstanding our earlier agreement to participate in this endeavour, it is Council's position that our administrating OBC examinations of registration of successful participants would duplicate the administrative bureaucracy of the Ministry, and would add little value to the role of PEO as the regulator of the practice of professional engineering in Ontario," Allen said in the letter.

He said PEO will continue to inform professional engineers involved in preparing building designs that they will still be required to pass the OBC examinations.

Despite the latest decision by Council, PEO plans to continue discussions with the housing ministry officials in response to Bill 124. One area of negotiation is the creation of potential alternatives to the ministry-run building code certification regime.

Chris Roney, P.Eng., of Kingston, a member of a PEO taskforce on Bill 124, told *Engineering Dimensions* the housing ministry officials appeared receptive to the idea of PEO developing its own certification program for engineers involved in building design. "The ministry indicated that it might be open to an exemption for engineers if PEO would put in a similar test or (building code) qualifying regime in its legislation," Roney said.

The ministry has raised the possibility of exempting architects—and possibly engineers—from the bill's building code certification regime, provided both professions develop equivalent systems under their own respective legislation.

In a recent letter to PEO's chapters, Kim Allen pointed out that knowledge of the *Ontario Building Code* by itself does not assure the public of professionalism and competence in the design/building area. "The Ontario Association of Architects and PEO's positions are very similar," Allen said. "Neither organization accepts that passing an exam of building code knowledge assures the public that they are being serviced by a competent professional, and both organizations already handle complaints and apply discipline for failure to make reasonable provision for all codes and standards. The building code is just one of the codes that practitioners in this field must take into account."

Survey reveals growth in engineers' salaries

By Stephen Jack, P.Eng.

Results of the 2004 *Ontario Engineers' Salaries: Survey of Employers* are now available through the Ontario Society of Professional Engineers (OSPE). Now in its 51st year, this important survey is highly respected by both engineers and their employers for its reliability and value.

A total of 147 organizations across all major industry groups in both the private and public sectors provided pay data covering 11,626 engineering positions. The aggregate data is presented in the reports published by OSPE in both hard copy and electronic formats.

As of June 1, 2004, the median annual base salary is $79,400

As of June 1, 2004, the median annual base salary is $79,400 and the median total cash payment is $82,200 for all engineering responsibility levels combined.

The survey also reveals that variable pay, including performance-related cash bonuses or profit-sharing, is now almost standard with most companies. Of the total 147 organizations that participated, 63 per cent reported paying some form of additional cash to 43 per cent of all engineers reported on the survey.

The average additional cash payout served to increase the aggregate average salary (all respondents) by $3,743, boosting the average annual take home pay package to $84,196. Of course, bonus-related payments vary by industry sector and level of responsibility. The survey reports available through OSPE provide valuable details on additional cash compensation.

The consulting engineering/construction industry is considered to be something of a bellwether sector in engineering, possibly because it represents almost 30 per cent of the positions reported. The largest sector is, of course, manufacturing, which employs 37 per cent of Ontario engineers. The median salary for consulting engineers was $77,800. The median entry level salary for 2004 graduates was calculated at $46,000.

The following is a snapshot of year-over-year pay data as of June 2004, based on 134 common core participants (organizations that have provided data for two consecutive years):

- median base salary increased 3.6 per cent;
- total cash compensation grew by 3.5 per cent;
- base salaries for engineers in non-durable manufacturing increased by 4.1 per cent;
- median salaries for consulting engineers increased 2.9 per cent;
- total cash earnings for consulting engineers grew by 3.6 per cent; and
- median take home pay for Level D engineers rose 4.7 per cent.

From 2003 to 2004, the consumer price index (CPI) for Ontario increased 2.4 per cent. The 3.6 per cent increase for median base salary for engineers during that period shows positive growth in engineers' pay overall.

This year, responsibility for the employer survey was transferred to OSPE. To maintain the utmost consistency and data integrity, the survey remained essentially unchanged in its data collection, analysis and presentation. The continued use of an independent research consultant was key to maintaining this continuity.

The survey implementation was overseen by an advisory committee comprising representatives from industry, and engineering and human resources communities. The committee ensures that the survey remains a current and reliable resource on compensation for engineers. A list of committee members is provided in the published reports.

Engineers and employers can now order Detailed, Industry and Custom Reports through OSPE's Career Centre. Visit www.careercentre.ospe.on.ca to order online or download a faxable order form. Order forms have also been mailed directly to engineering employers and to all OSPE members inside the latest edition of *The Voice* newsletter.

Engineers interested in comparing their pay with industry norms, particularly in preparation for salary negotiations, should take advantage of these reports. Engineering employers can use the reports as valuable tools in benchmarking and setting compensation for engineers.

The Ontario Society of Professional Engineers conducts regular surveys on compensation and other aspects of employment for engineers. If you are interested in participating in future surveys, please contact OSPE Director of Professional Development Hanan Jibry, P.Eng., at hjibry@ospe.on.ca or (416) 223-9961, extension 236.

Stephen Jack, P.Eng., is a member of the Salary Survey Advisory Committee. He managed PEO's salary surveys for 15 years and is OSPE's former director, operations and member services.

U.S. and Canadian surveys reveal mixed views on profession

By Nicole Axworthy

Every year the engineering profession faces new demands, new trends in the direction and type of work performed, new skill requirements and new working relationships. Despite these, engineers feel positive about the image and stature of the profession and the majority of practitioners believes the public sees engineers as ethical, according to the 2004 Engineering Outlook Survey sponsored by the U.S. National Society of Professional Engineers (NSPE).

The survey asked professional engineers' opinions on a wide variety of current issues affecting the practice of engineering in the United States, including image and stature, ethics, engineering education, employment trends and licensure.

To gauge similar trends north of the border, the *National Survey of Professional Engineers*, last conducted in 2002 by the Canadian Council of Professional Engineers (CCPE), surveyed a total of 27,120 licensed engineers and geoscientists.

Both surveys reveal that professional engineers have a high level of job satisfaction. Seventy-six per cent of NSPE respondents are satisfied versus 86 per cent of CCPE respondents. The freedom to decide on major issues affecting how professional engineers do their work, as well as job advancement, were cited as the major factors contributing to job satisfaction in Canada.

In the U.S., 75 per cent of respondents said their firms support employee participation in professional activities and training, either financially or by providing scheduling flexibility. CCPE statistics show that Canadian engineers are also encouraged by their employers to pursue additional training. Approximately 80 per cent of those who pursued training in the three years prior to the survey indicated that their employers supported their training financially, and 50 per cent indicated that their employers provided time off for training.

However, only 37 per cent of respondents in the U.S. agreed that the current job market for engineers is good (41 per cent disagreed and 22 per cent were unsure). In Canada, 75 per cent said they are happy with their career prospects and 60 per cent believe there are opportunities for advancement. In this case, it was reported that younger members and women are the most positive, since they are at an earlier stage in their careers.

Also of note, fewer than half (41 per cent) of NSPE respondents agree that the quality of engineering education in the U.S. is as good or better than when they attended school. Three out of four support the recent trend toward mandatory continuing professional education and competency for

licence renewal. Similar results are shown in Canada, where seven in 10 members believe their education adequately prepared them for their current work and they are currently working in areas they are trained for; younger members are less likely to believe this about their education. Lifelong learning is also becoming increasingly important for the engineering profession in Canada, as is the case for the broader Canadian labour force. CCPE results point to a strong need to improve non-technical skills, such as negotiation, personnel management and contract development.

Common issues of concern for all engineers include: misuse of the engineering title; requirements for licensure and unlicensed practice, offshore outsourcing, promoting the profession to the general public, and ethics.

For the full results of the NSPE survey, visit www.nspe.org/outlookindex. For the CCPE survey, visit http://www.ccpe.ca/e/pub_studies.

Chapters key to recruiting coach-mentors for competition

By Michael Mastromatteo

The PEO Scarborough Chapter's involvement with the highly successful FIRST Robotics competition is being touted as a model for other chapters in terms of providing mentoring opportunities while encouraging student interest in science and engineering.

FIRST is an acronym for For Inspiration and Recognition of Science and Technology. It's an increasingly popular competition in which high school students test their engineering and technical skills in designing practical robotic applications. More than 20,000 students from 900 teams in Canada, the U.S., Brazil and Great Britain took part in the 2004 competition.

The success of the competition depends in large part on the efforts of professionals who volunteer as coach-mentors to the student teams. In past competitions, engineers from Toronto-area companies have acted as coach-mentors or have sponsored student participation. More recently, however, PEO chapters are taking up the FIRST Robotics challenge.

Ranee Mahalingam, P.Eng., vice chair of the PEO Scarborough Chapter, said support for FIRST Robotics has been a priority for the chapter for nearly two years. She said one of the aims of the chapter is to promote engineering in area high schools, and support of the robotics competition was seen as an effective means of achieving that goal.

"We explained what the FIRST program would do for our members and we promoted chapter members to participate as members through our newsletter," Mahalingam said. "To my knowledge, none of the other chapters has done what we did."

FIRST competition executives have recognized the contributions of members by designating Scarborough Chapter a "material sponsor," and by including the Scarborough Chapter's logo on the FIRST Robotics Canadian website (see www.firstcanadianregional.org/mtrlsponsor.php).

Working through its education committee, 10 Scarborough members signed up as coach-mentors and were linked up with area high school robotics teams. The chapter also organized a workshop last January to help promote the competition and to encourage greater participation from members at large.

Students are hard at work on a project at the Greater Toronto Regional finals of the FIRST Robotics competition. Engineers with PEO's Scarborough Chapter played a major role as mentors in the 2004 event.

The results of the Greater Toronto Regional finals–held April 1-3 at the Hersey Centre in Mississauga–appear to indicate that engineers make effective mentors. A team from Timothy Eaton Business and Technical Institute–an inner city school–teamed up with a U.S-based robotics team to claim first prize in the Canadian competition.

The mentor for the winning team was Michael Tamarro, P.Eng., of the Scarborough Chapter. The Timothy Eaton team went on to Atlanta April 15-16 to represent Canada at the international robotics competition.

Robert Gorbet, P.Eng., a professor of engineering at the University of Waterloo, has been involved with FIRST Robotics Canada since 2002, and served as a supervisor of judging at the Canadian Regional final.

As a long-time participant, Gorbet believes the benefits to engineers acting as coach-mentors go beyond helping students. "The ideal that the FIRST organization and team members strive for is 'gracious professionalism,'" Gorbet said. "This means behaving professionally while at the same time helping others. For professional engineers to become involved as judges and mentors shows the importance we place on professional, ethical behaviour, and allows us to demonstrate these values through direct action. In addition, statistics show that participation in FIRST is a life-forming experience for students, who discover the fun in science and technology."

For more information on the Scarborough Chapter's experience with FIRST Robotics, visit the chapter website at www.scarborough.peo.on.ca.

For information on FIRST Robotics Canada, see www.FIRSTcanadianregional.org