STLE sections crown the best & brightest

Funds from STLE sections are benefiting top students—and the industry—in many ways. But scholarship work also uncovers the need for additional levels of workforce recruitment programs.

By Michael J. McGinty
reasons why a program conceived by a trade association wouldn’t get off the ground.

Finally, he startled everyone by exclaiming, “Look, let’s stop talking about why we can’t do something and start talking about how we can do it!” The discussion turned his way, as the positive attitude he displayed infected the others.

It is that kind of positive thinking about human resources for the future of the lubricants industry that has a number of STLE sections upgrading or expanding scholarship programs for deserving students and sponsoring other activities designed to attract more young people.

With STLE members rightly concerned about the shortage of talented people coming into the industry, several sections are doing their part with scholarships, supported with STLE matching funds, and participation in science fairs that target younger students before they make their career choices.

STLE’s Section Scholarship Matching Fund program provides $15,000 annually that is distributed proportionately to the sections that make application and follow simple guidelines. Any single scholarship match is capped at $2,500. Since 1998 STLE has awarded more than $100,000 in scholarship funds to deserving North American students. The matching funds in most cases double the money awarded by sections that have raised funds through continuing professional education courses or special events.

The Chicago Section, STLE’s largest regional group with some 400 members, is joined by sections in Atlanta, Philadelphia, Detroit, Houston and Hamilton, Ontario, along with others in the United States and Canada, that are determined to identify students who will not only benefit from financial support but also form relationships with industry professionals in their respective areas.

Invitations to attend STLE meetings and opportunities for contact with local lubrication engineers and chemists build strong bonds with students. Sometimes the chance to rub elbows with other tribologists can be one of the best ways to keep students directed toward industry careers.

STLE member Bo He, a Chicago Section scholarship winner who is working on his doctorate in mechanical engineering at Northwestern University, called the scholarship “a great honor” and something that has further cemented his interest in researching high-temperature nanotribology (see article on page 51).

But before we begin describing the successful efforts of various STLE sections, let’s first hear instructive comments from observers who point out that scholarships for undergraduate and post-graduate students are base hits in a game that will require grand slams if the profession at all levels is to expand the pool of talented job seekers in the future.

Tom Warren with F.L.A.G., a recruitment firm in Wilmington, N.C., that specializes in the fuels, lubricants and grease industries, says that while scholarships are one excellent vehicle for career candidates, the industry’s various sectors must energize plans to attract students in additional ways. For instance, he mentioned that recruiters are rarely employed to seek new graduates but only to find experienced people. He believes the industry needs a level of recruitment strategy that aims at students who are still undecided about careers, and that entails
contact with college seniors or recent science graduates to expose career opportunities in lubrication technology.

Participation in science fairs, some featuring kids as early as the fifth grade, is a regular activity for the Chicago and Philadelphia Sections, among others.

Warren added that workforce recruitment involves enthusiastic salesmanship, a quality that many serious-faced engineers and chemists don’t always convey to students looking for exciting careers with growth opportunities. “You can’t just show up at a trade show or a career fair with a bunch of brochures and hope people will come up,” he explained. “You have to prepare with good, solid facts about the business and its opportunities, and then go to those functions with a story to tell. If you have credible information, students will listen,” he adds.

To his point, another Chicago Section scholarship recipient, STLE member Valentina Ngai, wondered aloud how many students who want jobs or careers that help other people are even aware that tribology plays a critical role in the development of better, safer medical products that improve the quality of patients’ lives (see article on page 53).

Several section leaders agree that more diverse efforts are needed to promote careers to pre-college students and, on a higher level, to those who have not yet entered disciplines in chemistry or mechanical engineering. It should be addressed, they say, because schools can’t be relied upon to alert students to the plethora of careers in industry, especially with today’s pop culture attention to glamorous jobs in law, medicine and Wall Street, together with the bland reputation of older, mature industries like lubricants.

Further, Warren notes, it’s also a question of limited resources and the capabilities of sections to expand recruitment programs. Yet there are several kinds of simple, innovative programs that, while involving time and effort, do not require large financial investments.

CONTINUED ON PAGE 48

Think of talented temps for the future, not the present

S

Search consultant Ken Pelczarski believes many industry companies can benefit by taking on temps—especially young chemists or mechanical engineers—who may not be instantly productive but who might be worth gold six months or a year from now.

While there are obvious advantages to hiring experienced people who can hit the ground running, Pelczarski, of Pelichem Associates in Downers Grove, Ill., thinks more companies should make room for the young and inexperienced. “I urge clients to consider the motivational factor in talented young people, perhaps recent college graduates, who are willing to learn and are hungry to gain experience,” he says. “There are many companies that hire on the basis of what will happen tomorrow instead of what the person will contribute later.”

He strongly encourages industry companies not to overlook motivation as a significant factor in the hiring of young engineers or scientists.

Pelczarski is another industry observer who contends that many recent college graduates in chemistry have strong educational backgrounds but very little idea about the wide range of opportunities available to them, including careers in tribology and lubrication engineering. He encourages industry efforts to help college students in relevant disciplines understand more about available and emerging jobs and careers.

—Mike McGinty

We make kids aware that there is something out there in our industry and that lubrication is so important to products and machines they see and use.’

Dick Clark
Technical director
Homan Corp.
Chicago, Ill.
Warren also emphasizes that so much of the success in recruiting talented people is based on internal, not external factors. “A well-managed company that can show students career paths and growth opportunities through training has a big advantage,” he says. “The best companies include recruitment of employees in their business plan.”

Finding and retaining good people today is hard work, and talented job seekers—from ground floor employees to top-level engineers—are not exactly elbowing each other to join the lubrication technology industry. In fact, it’s even tougher these days because other mature industries are fighting for the attentions of the same people.

Some years ago Ferris State University in Big Rapids, Mich., conducted a national study to determine how much guidance high school students received from teachers and counselors on career opportunities and choices. Over 50% of the students said they received none, largely because school personnel have too many students to deal with and spend far too much time coaching students to enter prestigious four-year colleges at the expense of technical careers and, for that matter, of traditional kinds of careers in science and technology. The majority of students said they received career guidance from their parents, which is a positive except that it leaves out a large population of students from disadvantaged backgrounds or from poor home environments.

Although that finding is sad on the surface, it also presents an opportunity for industries with workforce shortages to reach students who may have an interest in science and technology but have absolutely no clue about careers in the real world other than what they see on prime time television.

Paul Hartsuch, of Supresta US LLC in St. Charles, Ill., and 2006-2007 chairman of the Chicago Section, says that involvement in local science fairs has not only been productive but gives industry leaders a chance to observe the state of American education and even to help influence what kids are learning. “Unfortunately, we see a lot of projects with stuff downloaded off the Internet,” he explains. “We look for originality and projects by kids who follow the scientific process. But lubrication and tribology-related industries overall have done a poor job promoting both the needs and the rewards in their fields.” He adds that schools in Southeast Asia teach science and technology using practical terms and examples, whereas many American school courses teach in the abstract.

Despite the difficulties which face the industry in recruiting future talent, there is no question that scholarship programs, now enhanced with STLE’s matching funds, are essential factors in identifying talented people who plan to enter the industry’s diverse fields and perhaps one day become its leaders. Here are capsule reports on what a few STLE sections are doing.

Chicago Section
Contact is made with faculty at several colleges and universities in the Chicago and Northern Indiana areas. Candidates are nominated by the schools, and a committee on scholarships reviews the applications and selects winners, according to Hartsuch.

Funds contributed by section members are bolstered by STLE matching funds and total about $4,000 annually. The Chicago Section plans to expand the reach of the program to additional colleges in the area. Scholarships have been awarded by the section for several years, and this year the honors went to two deserving candidates who remarked that the recognition from the industry was as important to them as the funds to offset the costs of their post-graduate work.

Both Hartsuch and Careers in Lubrication Committee chair Dick Clark, technical...
director at the Homan Corp. in Chicago, spoke enthusiastically about the scholarship program and the group’s participation in local science fairs. The section also has started a mentorship linkage with local schools.

The Chicago Section awards savings bonds ranging from $50 to $250 in value to projects in tribology and lubrication technology at science fairs sponsored by Chicago’s public and private schools and Calumet, Ind., regional schools, for students from seventh grade through high school. “We make kids aware that there is something out there in our industry and that lubrication is so important to products and machines they see and use,” Clark says.

A mentoring program is in its early stages, accomplished by posting names on the STLE Web site of members willing to discuss the field with educators, fair organizers and students themselves. Clark reminded those considering mentoring programs in this day and age to avoid one-on-one situations. E-mail more appropriately facilitates mentoring between youths and adults. Any face-to-face contact would be in a group.

**Philadelphia Section**

STLE’s scholarship matching funds are used to support the Philadelphia Section’s different yet equally effective way of nominating candidates for annual awards. Unlike Chicago and other sections, which gather nominations from professors or school contacts, the Philadelphia folks obtain candidates from within the ranks of their own 200 or so members.

“It works well,” says Domenick Ruggeri, of Crystal Inc.-PMC in Lansdale, Pa., a member of the national STLE’s board of directors. “The benefit is that our own people have friends, relatives, professional contacts, summer interns and so on who know or recommend students interested in our field,” says Ruggeri. Another reason for the internal approach is that some of the universities in the area don’t answer requests for applications. “Generally the small colleges respond, but the big ones don’t,” Ruggeri notes.

Applicants must be sponsored by a member of the section. Scholarship winners are announced in October and are invited to the section’s March meeting where they meet other members. The number of winners varies from year to year, but the STLE matching funds are used in each case to support mostly undergraduate rather than advanced degree seekers.

This section participates in local Delaware Valley science fairs that sometimes involve students at the fifth grade level. Members serve as judges, and savings bonds are presented to students with winning projects in lubrication. Ruggeri finds the work with young students rewarding. “We saw the project of a kid who measured viscosity intuitively, without really knowing what he was doing, and we said, ‘That’s great!’” Ruggeri chuckles.

**Detroit Section**

This section annually sorts through 10-12 applications, sometimes more, from colleges and universities in Michigan that have a good relationship with its leaders and members.

Dr. Simon C. Tung, senior staff research engineer with General Motors in Detroit and the section’s scholarship chairman for the past 10 years, has expanded the program and hopes to involve more Michigan schools of higher education in the scholarship-application process.

“We have a strong network with all Michigan universities and research institutions (public and private schools). All professors and research scholars working in the field of tribology have been willing to help us in contacting potential applicants and developing stronger relationships with the
Detroit Section,” he says. “The solicitation process has been very successful. We always receive 10-12 strong candidates who apply for our annual scholarship.”

Scholarships ranging from $1,000 to $2,000 are given with a boost from STLE matching dollars. Candidates must supply documentation on their work, have a personal recommendation from a Detroit Section member and are required to write a paper on why they want to enter the field of tribology. The annual program is announced in August, with winners selected in October. Undergraduate and post-graduate candidates are eligible.

Tung is particularly proud of the fact that the majority of scholarship winners have entered the field as lubrication engineers at GM and Ford, and a few have gone into the classroom as professors of tribology and lubrication technology.

Part of the section’s success in this endeavor, he believes, is tied to the program of recognition the members bestow on scholarship winners. “Our industry is losing a lot of people,” Tung says, “so it’s important to honor winners with a formal ceremony and special presentations, to introduce CONTINUED ON PAGE 52

Bo He

To create something’ may be the message that levels the playing field for tribology

Bo He is nearing his doctorate in mechanical engineering at Northwestern University in Evanston, Ill., thanks in part to the STLE scholarship awarded to him by the Chicago Section. In addition to the financial aid, He called the scholarship “a great honor for me.”

Described by his professors as an outstanding candidate, He’s major research interest is in nanotribology involving surface engineering for microelectrical mechanical systems and new material development for future tribological components. “Currently I am working on the studies of micro/nano scale friction behaviors of low melting-point alloys at elevated temperatures,” he said.

He, although interested in science and technology, had no particular career path when he was selected as an undergraduate student at Tsinghua University in Beijing, China, his homeland. But when a college program he attended showed him the field of lubrication technology, “I decided that was a field for me and came to the United States to further my education.”

After receiving a master’s of science degree in mechanical engineering at the University of Missouri-Columbia, he enrolled in the doctorate program at Northwestern and has a GPA of over 3.7 on a 4.0 scale in the university’s highly demanding ME curriculum. He likes the Chicago area and hopes to work for a local firm doing research.

When asked what attracted him to tribology and lubrication engineering, He without hesitation said it presented the opportunity “to create something.” That simple statement may contain an important reminder for those in lubrication science who feel that students today regard the field as an unglamorous dead end.

It was obvious from the enthusiasm in He’s voice that the chance to further the creative process is as characteristic of tribology as to law, Wall Street banking and the so-called glamorous, hot shot careers.

Letters of recommendation for He emphasized that he is more than an emerging scientist. In the words of a Northwestern professor: “Bo represents a striking balance of a first-rate researcher and cooperative team player. He is an all-around gentleman who works well with faculty, staff and fellow students, with a strong sense of responsibility and respect for others.”

—Mike McGinty
them to engineers and scientists and help them identify potential employers and to display their research papers and awards."

Atlanta Section
Section treasurer Art Vogel, owner of the consulting firm Seminars Unlimited in Fairmount, Ga., credits the STLE scholarship matching funds with not only supporting the section’s scholarship program but with helping to ensure its viability for a number of years to come. The section’s treasury isn’t busting at the seams, but there is enough to keep the scholarship program afloat.

Funds raised from training seminars for Atlanta Section members bolstered the scholarship program for several years until a seminar scheduled for, of all days, Sept. 11, 2001, had to be cancelled. Vogel says the aftershock still ripples. “In addition, the workforce is changing, and so many people in our industry work at home that it’s difficult for them to attend meetings or seminars,” Vogel says, noting that this trend is national in scope and has affected the seminar business generally.

But funds collected earlier still provide a financial backbone along with STLE’s help. Section members have developed a strong relationship with Southern Polytechnic State University in Marietta, Ga. The school has been extremely supportive of the scholarship program, and there are plans to start a student chapter at the campus. Southern Poly is even offering to conduct a meeting for members at its facility.

Vogel, retired from Mobil Oil and treasurer of the Atlanta group for more than 25 years, notes the unfortunate fact that no major university, locally or nationally as far as he knows, offers a major in lubrication engineering. But at least the solid relationship developed with the Marietta college has created a strong glue between industry and a source of higher education

Hamilton Section
While some scholarship programs are governed by rigid guidelines, one of the advantages of the STLE matching funds is that members of each section can decide where the money goes and to what level. Such is the case for the Hamilton Section in Ontario, Canada.

Mike Reining with Dofasco Inc. in Hamilton, a fully integrated steel mill with 7,000 employees, says his section’s program concentrates on scholarships to those he calls “ground level” people who serve the area’s end-users as fluid power specialists. The section’s relationship is with Mohawk College, a community college that provides two- and three-year diplomas.

The section awards up to five scholarships, with $2,500 to $3,000 collected from members and with matching funds from STLE. Scholarship candidates must attend section meetings and work closely with instructors who select the final applicants. Interviews are conducted with each candidate.

Reining said that the vast majority of scholarship recipients have entered the industry. Mohawk College has an industrial lubrication course, which Reining said is a rarity, and Dofasco was instrumental in getting that program started.

Although pleased with the past success and future potential of the scholarship program, Reining is concerned about filling the workforce rolls. “Kids nowadays are different. They see such turnaround in our industry, and some don’t want to work with oils and greases,” he observes. But company training programs are critical in continuing the education process, the senior lubrication analyst says. “Attracting people is fairly easy, but once they get here keeping them can be difficult.”

Houston Section
STLE board member Robert Heverly of the Houston Section sighs and says he wishes he knew why an area so rich in the tradition of the oil and related industries has such difficulty attracting students into lubrication technology.

“I guess it is the glamour of certain other industries,” says the sales executive in the Houston office of R.T. Vanderbilt, an additives manufacturer based in Norwalk, Conn. But don’t think Houston members aren’t trying.
They provide scholarship funds, aided by STLE matching dollars, to the University of Houston's chemistry and mechanical engineering departments. Money also has been awarded less frequently to nearby Texas A&M University and other colleges in the Houston area. “Right now we really don’t have any strings attached because most of the students are in mechanical engineering. But we are looking for ways to fund kids wanting to go into tribology and lubrication because not enough of them are entering the field,” Heverly explains.

He said the group works hard to raise money for scholarship purposes, and STLE matching funds are a big help. Typically, three or four scholarships are awarded annually. <<

Mike McGinty is a freelance writer based in Evanston, Ill. You can reach him at mcginty1507@comcast.net.

**Tribology has an exciting side for Chicago scholarship winner**

Valentina Ngai was a college undergraduate with loads of potential but no particular career path in mind. Then, zap!, a light bulb went off in her head. After a short stint as a civil engineer designing highways, she suddenly realized that she could combine her two passions—the studies of human anatomy and engineering—into one by working on the tribology of medical products that improve people’s lives.

Ngai earned her master’s of applied science degree in mechanical engineering at the University of Waterloo in Canada. Her presentation on the frictional properties of contact lenses for the eyes made such an impression on the director of the Section of Tribology at Chicago’s Rush University Medical Center that she was offered the position of research assistant to earn a doctorate in bioengineering at the University of Illinois at Chicago.

Her 2006 scholarship from the Chicago Section is supported by STLE matching funds. She says the prestige of winning the scholarship meant even more to her than the financial aid, and she looks forward to presenting a summary of her work at a Chicago Section meeting in the fall.

In a conversation days before she headed to Germany for the Fifth World Congress on Biomechanics, with her trip partly sponsored by the Rush Dept. of Orthopedic Surgery, Ngai talked about what she thinks are the endless opportunities in the applications of tribology to the medical field. “Tribology is regarded as such an esoteric topic by most people, yet it is so important to the mechanical systems in the human body,” she says.

Currently she is focusing on the activity profile of total knee replacements in patients and prediction of long-term wear at the implant site. This is crucial work, explains the director of her department, because failure due to wear is still a prominent problem that usually leads to revision surgery.

Ngai argues that more young people might become interested in tribology and lubrication engineering if they were aware of applications like these. “Many students want to help people in some way, and they should be aware that this work can improve the quality of lives. Who wants to live a life in pain?” she points out. She expects to earn her doctorate in 2010. Like 2006 Chicago Section scholarship co-winner Bo He, she is also attracted by the opportunity to create through tribology.

There is even a personal reason for the interest in her current work. Ngai’s favorite playing sport is Ultimate Frisbee Football, and she admits there’s a chance she may one day need the knee-replacement device she is now working to improve! <<

—Mike McGinty