

U of A. Engineer

Keeping in Touch with
Alumni



the
**TRANS
FORMER**

**MICHAEL SIKORSKY
EMBRACES THE UNKNOWN**

Juno nomination for
engineer of note

All in the family

Students serving
students

Message from the Acting Assistant Dean External Relations

The Faculty of Engineering's connection to its past—our relationship with our alumni—is one of our most important assets. As an alumnus of the Faculty of Engineering, you contribute in many ways to the Faculty's reputation for academic excellence, leading-edge research and service to the community. We are intricately connected.

And we're striving to ensure that the Faculty communicates with you in a timely, appropriate manner. We're taking steps this year to make sure that we stay connected in ways that are important and relevant to you. We want to hear from you.

Earlier this year, we invited some of you to fill out a survey that asked questions about alumni events. The response was impressive, and the information we gathered will help us design events better suited to your needs and interests. We thank you for your participation.

And we're hoping that you will help us again—this time by taking part in a U of A Engineer readership survey. Over the years our magazine has evolved, but its mission—to highlight the achievements of our alumni and keep you informed about Faculty of Engineering news and events—is at the heart of what we do.

With this survey, you have a chance to tell us how well we are meeting that goal. *U of A Engineer* is about alumni—it is your magazine. I encourage you to take a few minutes to complete the survey. And, who knows—you might even win a prize!

Another way we're keeping in touch with you is through social media. Even if you aren't part of the "Facebook generation," you're invited to drop in on our Faculty on Facebook (www.facebook.com/UofAEngineering) to see the latest news and learn more about our students, professors, staff, and alumni. If you are on Facebook, becoming a fan of this page will give you a direct link to current events in the Faculty. We launched the U of A Faculty of Engineering Facebook page last fall and we now have more than 1,000 fans subscribing to the site. We hope to see that grow to include more alumni fans, as we include more news and stories about our alumni.

Finally, we know that the best communication is face to face, and we invite you once again to return to campus for Alumni Weekend, which takes place this year from September 22 to 26. Our External Relations team looks forward each year to this opportunity to meet so many of our alumni in person, and we do our best to host great events for you where you can reconnect with former classmates, friends, and professors. Don't let another year go by without attending Alumni Weekend!

Yours truly,



Laurie Shinkaruk
Acting Assistant Dean, External Relations

U of A Engineer is the Faculty of Engineering alumni magazine. It is published three times a year by the Dean's Office and is distributed to Faculty of Engineering alumni, friends, students and staff.

Dean of Engineering
David T. Lynch
(PhD Chemical '82), PEng

**Acting Assistant Dean,
External Relations**
Laurie Shinkaruk

External Relations team
Peggy Hansen, Nena Jovic-Andrejevic,
Linda Kelly, Colt Long,
Leanne Nickel, Jamie Reid

Publisher/Managing Editor
Richard Cairney

Copy Editor
Scott Rollans

Art Direction
Halkier + Dutton Strategic Design

Contributing writers and photographers
Blue Fish Studios, Jason Franson,
Roth & Ramberg Photography,
Colin Way, Suzanne Harris, Jenna C. Hoff,
Sarah Ligon, Judy Monchuk, Tom Murray

Send Comments to:
Richard Cairney
Faculty of Engineering
E6-050 Engineering Teaching
and Learning Complex
University of Alberta
Edmonton, AB T6G 2V4
Tel: 780.492.4514 or 1.800.407.8354
Fax: 780.492.0500
E-mail: richard.cairney@ualberta.ca
Website: <http://www.engineering.ualberta.ca>

Change of address:
peggy.hansen@ualberta.ca

Publications Mail Agreement
No. 40051128

Return undeliverable Canadian
addresses to:

Faculty of Engineering,
University of Alberta
E6-050 Engineering Teaching
and Learning Complex
Edmonton, AB T6G 2V4

e-mail: richard.cairney@ualberta.ca

VISION To be one of the largest and most accomplished engineering teaching and research centres, a leader in North America.

MISSION To prepare top quality engineering professionals, to conduct world-leading research, and to celebrate the first-class reputation and outstanding accomplishments of alumni.

VALUES Dedication, integrity, professionalism, and excellence in teaching, research, and service to the global economy and community.

Table of Contents

Spring 2010

6 A job with ups and downs

A new generation of yo-yo aficionados is taking the design and manufacture of yo-yos to new levels of technical precision.

The result? World rankings at yo-yo competitions and a thriving business for two imaginative engineers.



6

8 Overcoming hard times

John Basaraba's family pulled together to raise the \$210 in tuition fees he needed in 1948. After graduating in 1951 with a degree in Chemical Engineering, Basaraba helped his siblings through university. Today, John and Irene Basaraba continue their tradition of helping students overcome financial challenges.

10 Students serving students

During the 100 years since it was established, the U of A Students' Union has dealt with a wide variety of issues. But one thing has remained constant over the years: engineering students have played an important role in student government.



17



14

COVER STORY

14 The Transformer

When he was an engineering student, Michael Sikorsky's motto might have been 'Struggle and emerge'. Every time he tackled a particularly challenging project, he came through as a stronger, better educated person. Today, as an entrepreneur, Sikorsky eschews conventional wisdom, embraces the unknown, and encourages the next generation to do the same.

17 Engineers of note

Four alumni have taken their creativity and musical talents in different directions. And each has something to say about the connection between their engineering education, their creativity and how one has or hasn't influenced the other.

22 All in the family

Sisters Shawna Low (Chemical '84) and Karen Madro (Civil '81) followed different paths as engineers: one broke ground in the boardroom; the other in environmental engineering. Their daughters, inspired by the challenges and variety the engineering profession provides, are following in the footsteps of their mothers.

29 In Memoriam

33 Kudos

26 From engineering to economics

Engineering was always "the obvious choice" for Brian Heald (MSc Civil '83). But life had other plans for him: investment banking, via engineering. It seems like an unrelated mix but Heald says the master's degree he earned in geotechnical engineering at the U of A gives him credibility with clients, and the tools to live a full life.



26

30 Riding the high-speed rails

Imagine boarding a train in Calgary and arriving in Edmonton 80 minutes later, or living in Red Deer and commuting by train to your job in Calgary? Ralph Garrett (Civil '66) is part of an effort to make a high-speed rail link between Alberta's three largest communities a reality.

34 Class organizers a class act

Marketing experts would call them "connectors" and "influencers". We call them "fantastic." The folks to take time to help organize Alumni Weekend events play a vital role in co-ordinating a memorable weekend. And they find the job has unique rewards.

Message from the Editor



Teaching and learning never looked so good

I have the best job in the world. Seriously. As communications officer for the Faculty of Engineering and managing editor of this magazine, I meet the most amazing people, every day. Seeing the passion a professor has for teaching, or the excitement a student has for a research or club project is invigorating. In the past few weeks, I've met with students who have won the national Great Northern Concrete Toboggan Race, met another who has designed a quirky game for iPhone and iPod Touch, and chatted with professors who relish the opportunity to give undergraduate students a taste of cutting-edge research. And I got to see a fire-breathing robot.

OK. That last bit might lean toward hyperbole. The fire-breathing robot is in fact a programmable robotic arm with a blow torch nozzle used in a coating process called flame spray deposition. I saw the device in action in Mechanical Engineering Professor André McDonald's lab, while McDonald was supervising second-year materials engineering student Greg Nelson.

Under the guidance of McDonald and Materials Engineering Professor John Nychka, Nelson is one of 24 undergraduate students participating in a Dean's Research Award project

this term. Nelson is investigating ways to make medical implants and bone form a stronger bond than current technology allows.

In the lab, Nelson blends powdered bioglass, an agent that promotes bone growth, and a titanium alloy with a carrier gas—argon. The powder is piped into an oxygen-acetylene flame that melts it and sprays it onto a substrate. After depositing the coating, Nelson performs tests to predict whether the coating will allow bone cells to interpenetrate with it.

Dean's Research Award recipients say that their projects guide them toward a more thorough understanding of their engineering discipline. The students draw upon the lessons they've learned in all their various courses. When they put their knowledge and skills to practical use, they discover the big-picture impact of their education.

Student group projects do much the same thing. Nigel Parker, an undergraduate in his final year of civil engineering, recently led a team of 45 U of A students to the Great Northern Concrete Toboggan Race championship in Hamilton, Ontario. The team won top marks in sled design (after going through more than 30 test mix designs before settling on a formula for their concrete). Every

team member understood every technical aspect of the sled. And for the first time in 17 years, the U of A brought home the cup.

In an entrepreneurial twist, third-year electrical engineering student Robert Teed has released *Diner of the Dead*, a fun, zombie-filled video game available online for iPhones and iPods. Students like Teed and Andrew Vilcsak, who developed an app for iPhones and iPod Touch that lets transit users figure out when the next bus is due, are applying new knowledge in an entrepreneurial way—much the same as alumnus Michael Sikorsky, who is featured on the cover of this magazine.

I can't think of any other place where you'd meet the people behind a zombie video game, a fire-breathing robot, and a 300-pound concrete toboggan. And so there's no place I'd rather be.

What excites me about these projects is the fact that they aspire to apply and generate new knowledge and to solve problems we have yet to overcome. And if a fire-breathing robot is part of that process, so much the better!

Richard Cairney

Richard Cairney
Managing Editor

facebook

Staying in touch just got easier

Want to be informed about what's going on in the Faculty of Engineering? Want to hear about other alumni, students and professors?

Become a fan of the U of A's Facebook page—you'll get news, photos and videos about the Faculty, students, and alumni sent directly to your own Facebook account.

Join us online at: www.facebook.com/UofAEngineering



Alumni Weekend 2010

September 22 – 26



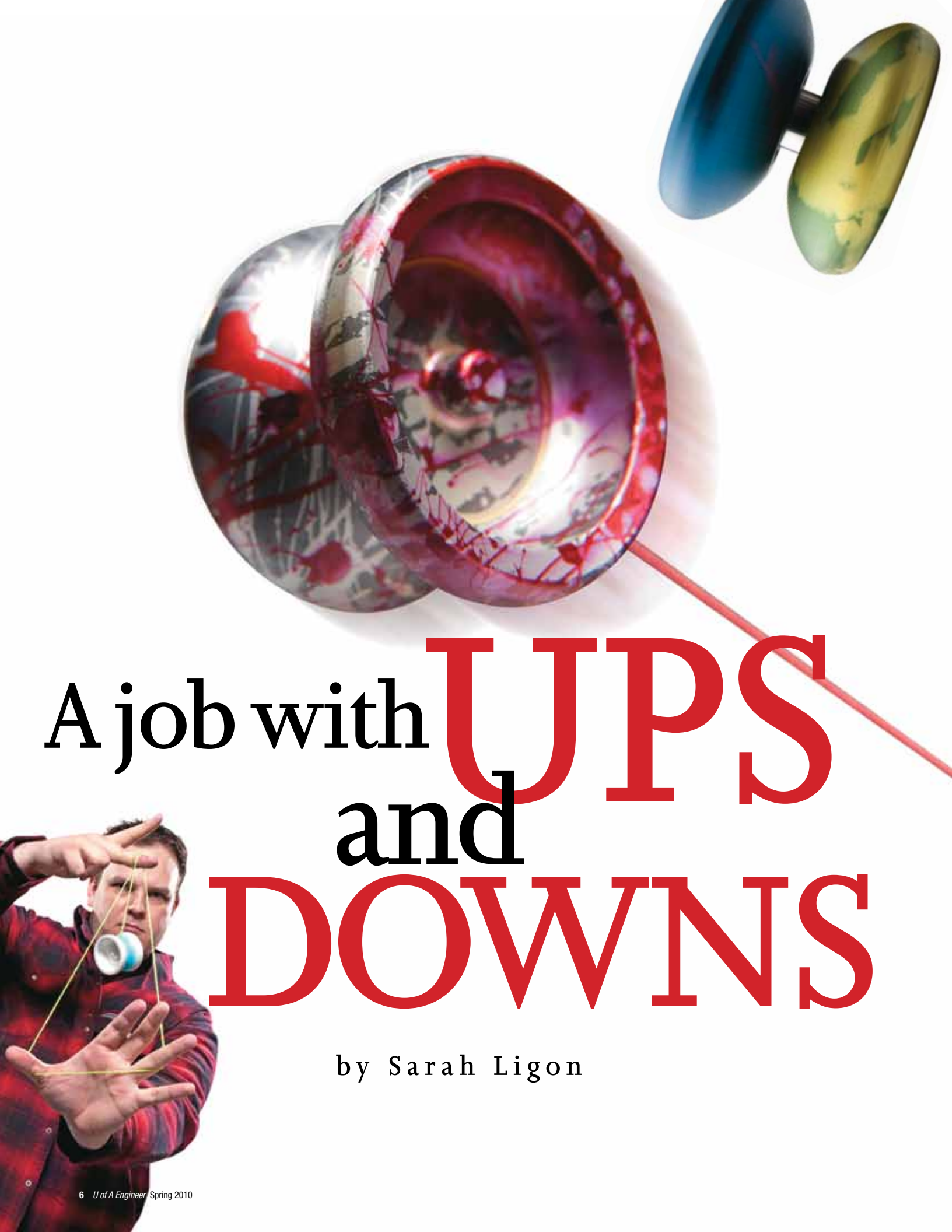
COME BACK!

Last fall's Alumni Weekend was another one of those unforgettable events filled with heartwarming moments. Engineering alumni and their guests from around the world returned to the U of A campus to meet old friends, make new ones and learn about what's going on in the Faculty of Engineering.

Join us again this fall to reunite with friends and the Faculty!

For more information visit www.engineering.ualberta.ca/alumni.cfm and join us on Facebook: www.facebook.com/UofAEngineering





A job with **UPS**
and
DOWNS

by Sarah Ligon



The yo-yos designed by Chris Mikulin (Mechanical [Co-op] '02), are nothing like the ones you remember from childhood: those plastic, dollar-store toys that were always getting tangled up in knots. Mikulin and business partner Levi McCarroll (Mechanical '02), mechanical engineers by profession, produce yo-yos made of aircraft-quality anodized aluminum and cut to a precision of 0.0005 inches. These are yo-yos for true aficionados and, in the right hands, the tricks they can do will make your head spin.

Mikulin and the company he founded, Caribou Lodge YoyoWorks (cariboulodgeyoyo.ca), are at the forefront of a yo-yo revival. In 2004, high-performance metal yo-yos, such as those he produces, re-energized the sport. Over the last couple of years, more and more competitions are cropping up across the globe. Last year there was even TV coverage of the World Yo-yo Contest, held each August in Florida.

Mikulin got into yo-yoing in 2004. The co-op students at the engineering firm where he worked often juggled during his lunch break. One day Mikulin pulled out a yo-yo from his teenage years and played along. When he went online to purchase more string, he stumbled across videos of players doing amazing tricks with really wide butterfly-shaped yo-yos with ball bearings.

This new style of yo-yoing blew his mind. Players were able to keep their yo-yos spinning for several minutes on a single throw, giving them time to do tricks previously unimaginable.

Friends and colleagues encouraged Mikulin to try making his own yo-yo. "I always wanted to get into product design and thought this would be a good way to combine two of my hobbies—yo-yoing and art—with something I had long wanted to do."

With the help of friend, colleague and airbrush painter McCarroll, Mikulin designed his first yo-yo, "The Peak," and put 50 of them up for sale on the popular site YoyoNation.com. They sold out in 15 minutes. Since then, they have released hundreds of Peaks and added new designs to their repertoire. Recently, a batch of 105 of their "Bear vs. Man" yo-yos priced at \$100 apiece sold out online in just 20 minutes, and several of McCarroll's airbrushed limited edition Peaks have sold for over \$600 on eBay.

"The value added by Levi's custom-painted artwork makes our yo-yos huge collector's items," says Mikulin. "We've painted comic book themes, video-game themes and all sorts of plaid designs. We're really having fun with it." Players using Caribou Lodge designs have won major competitions in Russia and Singapore.

But Caribou Lodge isn't just about fun and games. It has become a thriving business in large-scale production. It sponsors a six-member pro yo-yo team, sending them to competitions around the world. One of its team members, Jensen Kimmitt, is the current Canadian national champion, and another, Sebastian Brock, ranked third at last year's World Yo-Yo Contest.

Mikulin and McCarroll are currently going into full production on Kimmitt and Brock's new signature yo-yos: the "Wooly Marmot" and the "Bassalope." They're also patent-protecting and prototyping a new design that promises to be revolutionary: a fully adjustable yo-yo that can be modified on the fly with a series of snap-on rings.

Mikulin recently resigned from his full-time mechanical engineering job in order to pursue his yo-yo dream full time. With the help of McCarroll and friend Natasha Paterson, Caribou Lodge is gearing up for some major growth this year.

For all his success, though, Mikulin doesn't want his company to grow too large just yet. "It's not about money," he insists. "It's about having fun and getting more people interested in yo-yoing, and supporting the really awesome talent that's out there."

Sarah Ligon is an Edmonton-based writer.



Levi McCarroll (left) and Chris Mikulin are all tied up with their company, Caribou Lodge Yoyo Works.



JOHN BASARABA

Overcoming
HARD
TIMES

by Jenna C. Hoff

Although it has been 62 years since he first arrived at the University of Alberta, John Basaraba (Chemical '51) well remembers the financial struggles that he endured as a young student. It is these memories that compelled him to endow two scholarships to engineering students in need.

"I couldn't raise my tuition the first year. I didn't have a penny in my pocket, and I was faced with not being able to attend school," recalls Basaraba. Fortunately, a generous uncle loaned Basaraba the \$201.50 he needed for tuition. Unfortunately, Basaraba then discovered he needed an additional \$25 for students' union dues. He wrote home (his family had no phone) and his mother scraped together the \$25 by selling cream and eggs from the family farm.

His uncle allowed Basaraba to save on expenses by offering him room and board in exchange for farm produce.

"My uncle wasn't rich," Basaraba says, "but he was a teacher, and he believed in education."

Basaraba raised money for subsequent school years through various summer jobs. In 1948, he missed the last six weeks of his first-year classes in order to go to work as a highway surveyor near Lethbridge. During his second summer, he worked as a lab chemist for the Alberta Research Council-National Research Council on what was then a cutting-edge area of development: the oil sands north of Fort McMurray. Following his third year, Basaraba worked in Saskatchewan, surveying for oil reserves.

Although there were no scholarships available to him, starting in his second year of studies Basaraba qualified for assistance through the Dominion Provincial Education Fund, which gave him an interest-free loan he had to pay back within two years of finishing school and finding employment. This fund was later replaced by the Canada Student Loans Program. Basaraba also saved money by wearing hand-me-down clothing and by returning to the farm only at Christmas.

After graduation, money was tight, and Basaraba knew that he could waste no time in finding permanent employment. Fortunately, after the war, the economy was booming and companies were expanding.

He applied for 13 different positions and was offered an interview for all of them. In May of



Top: John Basaraba hitting the books in January 1950.



Right: Busload of engineering students on their way to Canada Packers in April 1950.

1951, he took a position at Canadian Industries Limited, at the time the biggest chemical company in Canada. He started as a process development engineer, at the modest salary of \$265 per month. He worked at the company for nearly 40 years, before retiring in 1989 as the company's corporate purchasing manager.

"I so appreciate the university education that gave me a good and interesting livelihood, that I want to help other financially challenged people," Basaraba says. For the past several years he and his wife, Irene, have provided two annual scholarships to first-year engineering students. The John and Irene Basaraba Scholarship in Engineering is designated for students who, like Basaraba, hail from rural Alberta. Following the passing of his brother in 2005, Basaraba also created the Dr. Neil Basaraba Memorial Scholarship in Engineering. Candidates for both scholarships are selected based on superior academic standing and a demonstrated financial need.

Basaraba takes great pleasure in meeting his scholarship recipients. "They're the nicest kids we've met. We would adopt them if they were available!"

Jenna C. Hoff is a freelance writer living in Edmonton.

Engineering students have played a proud leadership role over the 100 years of the U of A Students' Union. While the experience sharpens their problem-solving skills, which are valuable for any organization, students also gain valuable experience working with a team to provide community service, a skill they will use throughout their careers.

Students serving Students

by Mike Sadava

Meet three engineering students who have gone through the Students' Union experience.

Kory Mathewson Students' Union President, 2009-10

Kory Mathewson has made some difficult decisions in the past year: the first was to tear himself away from course work and research in electrical engineering (biomedical) to become president of the Students' Union; the second was to resign from the position.

Citing personal reasons, Mathewson resigned as president Jan. 11, 2010. But he values the experience and is confident that his term as president not only helped students, but also sharpened new skills that will help his engineering career.

Before running for the presidency, Mathewson was busy doing research on the overlay of ultrasound and photo-acoustic imaging of the blood flow, which could reveal valuable information about

oxygenation of the blood and have possible implications for cancer research.

He'd already had his name on several research papers, and began considering universities such as Stanford and Berkeley, as well as the University of Alberta, for grad studies. He could have gone straight through and continued his research, but instead opted in the spring of 2009 to run for office. Rather than being in the lab and classroom, he became the head advocate for just over 30,000 undergraduate students, talking to the university administration, the media and the provincial government about issues such as tuition hikes.

Why take the detour? At \$2,000 per month for long hours and the responsibility for thousands of students, it wasn't for the money.

"I ran mainly because I've always been very engaged with the campus community and I've always seen a high value in it," Mathewson says. From his freshman year on, he has been active in campus life, as a member of the First Year Engineering Club, the Engineering Students' Society and as a member of Students' Union.

"I've learned a lot about running a team, setting priorities, collaboration, and what it means to be an elected representative. I've learned a lot about responsibility for sure. One of the biggest lessons I've learned is how important communication is—getting information to people and listening to people."

Through experiences that few students get, such as meetings with Advanced Education and Technology Minister Doug Horner, or giving interviews to the



Kory
Mathewson

media, Mathewson has been learning how to deliver a message clearly and concisely, a skill that will inevitably be useful.

“I also made some calculations—the engineer that I am—and found that I was writing 150 words per hour as president. That’s a lot of writing experience.”

Because the Students’ Union is a \$10 million business that includes two restaurants and a host of services, from a housing registry to the Campus Food Bank, Mathewson has also gained valuable business experience.

Mathewson still finds time to volunteer on the board of Rapid Fire Improvisational Theatre, where he also continues to improvise, a passion he has had since high school and one that has helped him develop a sense of humour that will come in handy no matter where his career takes him.

Jack Forster **Students’ Union Secretary, 1943–44**

The Second World War raged when Jack Forster attended the University of Alberta, but he was right where the government wanted him—studying civil engineering.

“The military said they were trying to balance winning the war and being able to recover at the end of war by having technical personnel to do that and teach people coming back,” Forster says. A body called the Wartime Bureau of Technical Personnel advised the university what to teach to serve Canada’s needs, and military training as well as a summer army camp were part of the course.

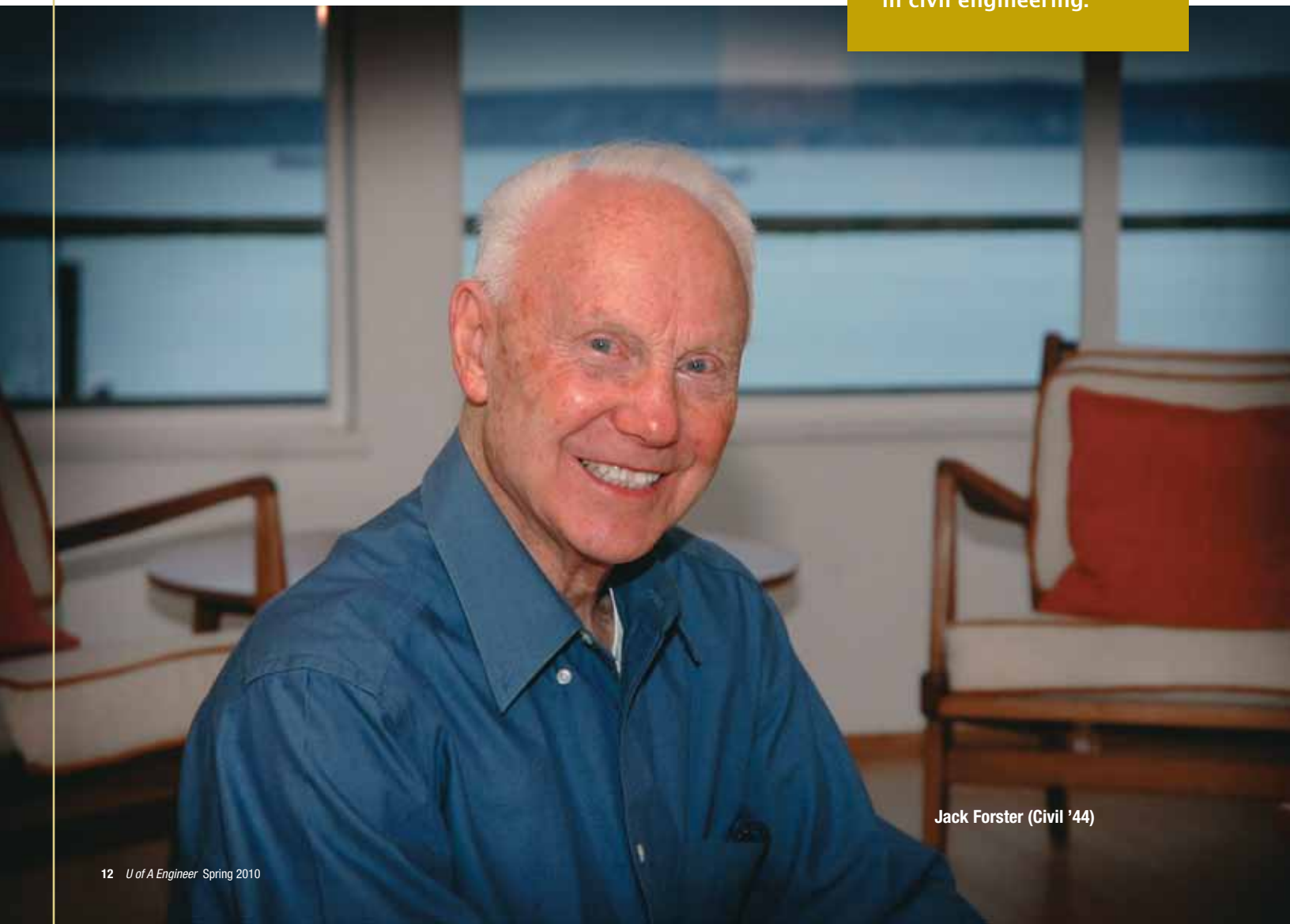
It was a different time for the U of A and a different time for the Students’ Union. The university had a grand total of 1,500 students, and Forster was one of only 10 students in civil engineering.

“I guess it was a matter of trying to serve where we could. I can’t say exactly why I ran, but I wanted to win.”

Not surprisingly, the war occupied much of the attention of the Students’ Union, he says. Much of his time was spent in fundraising to help the war effort supply canteens and other equipment for the soldiers overseas.

Forster, who is now 87 and lives in West Vancouver, B.C., remembers learning a lot of things from the Students’ Union

It was a different time for the U of A and a different time for the Students’ Union. The university had a grand total of 1,500 students, and Forster was one of only 10 students in civil engineering.



Jack Forster (Civil '44)

experience, such as how to run a meeting. It also gave him useful experience in working with a team, a skill that helped his illustrious engineering career, during which he specialized in hydraulics and its application to hydroelectricity generation.

“I think it was a good experience to see how decisions are made, integrating our ideas and the development of policy.”

It was also the start of the volunteer work he did wherever his career took him, which included long stints in Brazil, the United States and several Canadian centres (plus visits to China and Switzerland), and ended with 25 years at B.C. Hydro. In his spare time Forster taught English to recent immigrants working on a hydro project in northern Quebec. He organized an effort to build a church in a new suburb in Montreal when he worked there. In Madison, Wisconsin, he helped former inmates find jobs and stay away from their criminal pasts. After retirement in 1985, he did volunteer engineering work in Bolivia and Guatemala.

Forster made a long-lasting impression on engineering at the U of A. He was asked to return in 1947 and lecture in hydraulics. During the 18 months he was back, there was a changeover from hydraulics to fluid mechanics, and he was in charge of developing new equipment and writing new study manuals.

“Twenty-five years later, I came back for homecoming and they were still using my manuals,” he says.

Graham Lettner Students' Union President, 2005-06

The challenges faced during his year as president of Students' Union helped shape Graham Lettner's decision to become a citizen of the world.

For the past two years, Lettner (Electrical '06) has been in Zambia working with Engineers Without Borders (EWB), learning about a radically different culture and helping local people solve their problems.

Currently he is working with Mobile Transactions, a Zambian start-up company that provides mobile banking and money transfer services to the 10 million Zambians without access to a bank account. He



Graham Lettner (Electrical '06)

Lettner is especially proud of one legacy he played a part in creating: the U-Pass, which gives students unlimited transit travel in the Edmonton area at a fraction of the cost it used to be.

manages a training and sales team of 14 Zambians to develop and co-ordinate the provision of mobile phone crop payments to small farmers, electronic food vouchers for people with HIV and TB, and subsidies for conservation farmers.

In his application to EWB, which he posted on his blog, Lettner lists his experience with the Students' Union—including the stumbling blocks he faced—as a major reason for his desire to work with the organization.

“Past challenges, and especially past failures, have given me a chance to admit that I don't have all the answers, that I am error prone, that I am more ignorant than understanding of the world around me. Realizing this has been a great starting point for a new journey of learning and growth.”

He says he initially felt compelled to run for the Students' Union in 2005 by a feeling that a lot could be accomplished by the organization, and “that my own contribution could help make some new change happen for the betterment of the undergrads at the U of A.” Lettner is especially proud of one legacy he played a part in creating: the U-Pass, which gives students unlimited transit travel in the

Edmonton area at a fraction of the cost it used to be.

Although it delayed his degree and getting on with his career, the experience made him feel more prepared for the challenges of engineering.

“In the fall semester that followed my year with the SU, I felt differently about my studies. If things were unknown, I felt I could figure them out; if the answers weren't given, I felt I could figure them out on my own. I gained more confidence in getting things done outside of the setting of rules and 'right answers.'”

While his stint as SU president improved his problem-solving skills, it also helped him appreciate the perspectives of students outside of engineering. “Not all people see things through the lens of problem-solving,” he laughs.

Mike Sadava is a freelance writer living in Edmonton.



the trans



former

The art of constant
reinvention keeps
Michael Sikorsky
energized

by Richard Cairney

If you could travel back in time to your university days and offer yourself a few pearls of wisdom, what would they be? Would your younger self follow your advice or ignore it?

During a class back in the '90s, Michael Sikorsky (Computer '96) was presented with the results of a survey, showing that most seniors regretted not taking more chances when they were young. In another class, a guest lecturer urged students to be counterintuitive. Sikorsky viewed the experiences as messages from his own future.

His passport was stamped. He would take the path less travelled.

Or, rather, the paths less travelled. Just six months after starting his first full-time engineering job, Sikorsky quit the 9–5 life to take on a three-month consulting contract—without even knowing what an invoice was. Soon after, recognizing that there is a limit on the amount of money you can make on billable hours, he began working for himself as a software designer. He has established and sold six startups including the software firm Servidium, which was bought by ThoughtWorks.

It's a pattern of reinvention, of fearlessness in the face of overwhelming challenges, that Sikorsky learned as an engineering student.

"The U of A is where I first felt I was coming into my own. In Engineering, I just watched myself constantly grow. I learned that I could take on new challenges and do new things. Everyone says, 'Engineering is really hard,' and, 'You'll be gone in a year.' But the truth is that you just start growing. And eventually, I got this feeling that any time I walked toward a thicket of thorns it was also really beautiful—it was painful to get through the thicket, but whatever was on the other side was awesome.

"So, today, when I see a problem that looks really thorny, something maybe you'd rather avoid, I look at it and say 'This is gonna be awesome!'"

Sikorsky's attitude is perfectly reflected in the title of his blog: Killing Michael (killingmichael.com). "If you keep pushing yourself for growth, you don't even recognize the person you once were," he says. "I am willing to shed my skin and try something completely new on for size."



“I give people the tools to know what is going to work best in their current situation, so they can gracefully ignore advice that isn’t right for them.”

One of his best-known challenges was Cambrian House, a software development firm that relied on the concept of crowdsourcing. Members of the Cambrian community submitted ideas for software development, voted on which had the greatest potential, and collectively advanced their development.

Cambrian became something of an Internet darling when it staged its launch in 2007. Hoping to get the attention of Google, Sikorsky and his colleagues had 1,000 pizzas delivered to the Internet giant’s headquarters in Palo Alto, California. They posted video—which included Google security asking them to leave the property—on the Cambrian website.

It was a gutsy, trademark Sikorsky move that evokes mixed feelings in him today. It was a great success, he says, because it generated buzz about a Canadian Internet startup. But it was also a failure, because the company itself still lacked direction.

Sikorsky now shares his mix of business experience through the company he and his wife Camille operate together, Robots & Pencils. “I’m the robot, she’s a designer, so she’s the pencil,” Sikorsky explains.

The company runs courses, including a two-day intensive workshop called

Startup School, in which Sikorsky covers “everything you should know about starting a company that no one will tell you about.” Hand-outs for the course include documents from Sikorsky’s own business dealings on buying and selling companies, conducting due diligence, samples of employee contracts, PowerPoint presentations—the works.

“I’ve done well in some cases and poorly in other cases, and I feel like I am now at a stage where I can share this meta-level information with people,” says Sikorsky. “When you’re starting a company, everyone has advice for you, but the best advice they can give you is what worked for them. Maybe it’s their dad telling them how he started his company, or your in-laws, or whoever. I give people the tools to know what is going to work best in their current situation, so they can gracefully ignore advice that isn’t right for them.”

That’s not to say that Sikorsky has ever stopped listening to others. During his teen years, he surfed online bulletin board systems swapping programming ideas with other geeks. These beginnings made his crowdsourcing experience with Cambrian

House feel natural. The theme continues in his current preoccupation—investing in new applications for the iPhone and iPod Touch. Sikorsky has always paid attention to the wisdom of the crowd.

Through Robots & Pencils, he develops and sells iPhone apps and other software. He is also heavily involved in the Calgary-based iPhoenix Fund, a firm that invests in multiple iPhone and iPod Touch applications to minimize risk and maximize profit.

The introduction of the iPhone and iPod Touch has spawned a new, lucrative industry: iPhone apps, currently worth an estimated \$2.4 billion (US) per year. More than 100,000 applications have been written for the iPhone, and more than two billion copies have been downloaded.


Apple takes 35 percent of each sale. iPhoenix Fund splits the remainder equally between developers and investors.

Such ventures are profitable, but Sikorsky also sees them as paying forward the confidence investors had in him when he was younger. Start talking about young engineers with Sikorsky and his already positive disposition brightens. His favourite investment, he says, would be two brand-new engineering students fresh from convocation. This, he says, is the time that students should be starting their own companies.

“There is a builder gene with engineers. Like any artist who wants to fill a canvas, I think it is just an engineering thing that they want to build things. People want to be engineers because they are already quote unquote ‘broken’ on the inside. And if you are a builder, the sooner you start your company the better. You are supposed to be poor in university. You are supposed to be poor after graduation. And the reason you want to invest in two software guys is that they are so busy thinking about software that they don’t care about business, and they’re going to build something incredible.

“It’s the builder gene. So if these young graduates are ‘broke’ enough inside that they stay up at night to build rounded buttons—they don’t know why, but they just really like rounded buttons—that’s what I want to see.”

For Sikorsky, supporting such dreams would be like travelling back in time to counsel his younger self.



Ten Second Epic lead singer Andrew Usenik (Civil '08) is the first Faculty of Engineering alumnus to earn a Juno Award nomination.



ENGINEERS of NOTE

by Tom Murray

There are stereotypes that say engineers are preoccupied with math and science, that computer engineers look at every problem as a matter of zeros and ones, and that engineering physicists are contained, rather than inspired, by the laws of physics. Yet, you don't have to look very far to find engineers who excel in creative endeavours within and beyond their profession—and in many cases you'll find that their engineering education helps in their artistic pursuits.



Juno nomination an engineering first

"I remember some of our first tours," sighs Ten Second Epic singer Andrew Usenik (Civil '08). "We'd be playing some place like Thunder Bay to the sound guy and the bartender. It's certainly changed a great deal since then."

It certainly has—Usenik's band was nominated in early March for a Juno Award in the New Artist of the Year category, an honour Usenik is justifiably proud of.

"A Juno nomination doesn't speak about the band or the album you just made—it's bigger than that," he said. "It's recognition for your record label and your booking agent and most importantly, for your fans, who buy your music and spell it out for the Juno committee that this is a group they should be paying attention to."

For years, Usenik balanced his musical career with a full schedule as an engineering student. Negotiating time between tours and recording finally paid off in June of 2008, when he earned a degree in civil engineering after flying in from a U.S. tour to write his final exams.

"A Juno nomination doesn't speak about the band or the album you just made—it's bigger than that."
—Andrew Usenik

An impressive feat of stubbornness, really, especially for a still quite young punk rocker who could have easily been dazzled by his band's rapid rise and taken up the clichéd musician's dissolute lifestyle. Even more impressive is the way Usenik has casually melded the two very different cultures, keeping faith with rock 'n' roll while making use of his four years as a student.

"It's funny, because I've never been trained as a musician. I couldn't tell you what a C or D chord is," he laughs. "It's more of a listening thing. Going through the engineering process has taught me how to approach different problems, and to come up with solutions. That's where it's been most helpful, because musically I don't have a system to fall back on. I guess it's helped me to construct my own system.

"In the end, I think that what I got the most from the experience was not 'How do you solve this problem?' but 'How do you approach solving this problem?'"

Ten Second Epic has been around long enough to know the ups and downs of being an independent band in an uncertain industry. They have had chart and video success here in Canada, and many sold-out shows across the country. This year, they have toured in Japan and performed at the Vancouver Olympics and booked a European tour. Almost eight years worth of hard work has taught them thriftiness, and they've been schooled on the hard realities of a life that, from the outside, looks like one long party.

"There are millions of songwriters out there," Usenik says. "And unless you're willing to sacrifice a certain amount, put the time and extra effort into it, you simply won't separate yourself from the pack."

As Usenik points out, this is no different a situation than studying engineering. The discipline he acquired while pursuing his degree has also served him in good stead as he navigates the thornier side of a profession where business decisions collide with art.

"It's not always fun," he agrees. "But it's necessary to understand what you're getting into, especially with changes in the industry. Major labels are pulling a 180 because downloading music has changed everything, and we don't know how things will eventually play out."

But even if Ten Second Epic eventually finds itself winding down and Usenik immerses himself in engineering, he'll be fine.

"I truly enjoyed everything I went through at school," he says. "It was a great deal of fun for me. As for the band, we came from humble beginnings, five friends just having fun. I have no clue how this will pan out, but I feel lucky to have the option."

It's important to note that while the band is between tours Usenik gets back to his job with IBI Group in Edmonton, where he works as an engineer in training doing civil engineering consulting.

"I finished my degree, so one day that PEng designation will come," he said. "It'll take a while but I am getting the hours in."

The scientific approach

Because he's passionate about both science and music, it's often hard to know which subject Aaron Hryciw (Engineering Physics '02) is referring to. "Sometimes," he says, "you're sitting down working and you can get into the zone, and all of a sudden five hours have passed and you have been working on one passage or trying to write a piece or solve a problem."

From Water to Ice, Hryciw's work for string quartet, perfectly blends art and science. The Canadian Association of Physicists commissioned the piece to commemorate the association's 60th anniversary and World Year of Physics in 2005. Its three sections, entitled *Water*, *Freezing*, and *Ice*, describe water before, during, and after it freezes. Just as water remains the same despite the phase it is in, the composition is based on a four-note cell and is played in 3/4 time throughout.

In a description of the composition, Hryciw writes that he took a cue from Impressionism in the *Water* section to demonstrate its flow. He turns to mathematics in the second part to describe the process of freezing, mimicking the Fibonacci sequence. The first two terms of the sequence are one and one, with subsequent terms being the sum of the two previous terms. The first eight terms are 1-1-2-3-5-8-13-21. Hryciw used the first seven terms to structure the rhythm of his composition. To prevent the piece from sounding too mechanical, he added notes between the terms for aesthetic purposes. In the final section, *Ice*, he is inspired by the crystal structure of ice itself. Hryciw wrote this section to musically follow the hexagonal lattice of natural ice crystals. And, to remind listeners that ice is physically powerful, he added a "nearly onomatopoeic" description of ice cracking, using pizzicato.

After earning his undergraduate degree in engineering physics, Hryciw went on to pursue his PhD in Physics at the U of A. Now a postdoctoral scholar at the Geballe Laboratory for Advanced Materials at Stanford University, he is conducting research in plasmonics, which investigates the interactions between light and metals, particularly nanostructured metals.



Nils Edenloff (Computer [Co-op] '02) works as an engineer but spends much of his time touring with his Toronto-based group, The Rural Alberta Advantage.

Hryciw's father, Robert, plays second violin with the Edmonton Symphony Orchestra and Aaron began playing violin at age three. In Grade 8, he took up bassoon and, at about the same time, began composing music. He currently studies composition with Malcolm Forsythe, and has won Alberta Foundation for the Arts grants as a composer.

As Hryciw progressed academically, he matured musically.

"During my undergrad years, music was very much an escape, a release," says Hryciw, who at the time played in a string quartet and the U of A symphony. "It really balanced out all of the course work. It was something that wasn't science—it was something separate that I could throw myself into."

These days, Hryciw sees a clear connection between the thought processes of both engineering and composition. Writing music, he says, is more closely related to science and math than playing music is.

"In recent years I have taken a more analytical approach to composition. Going through engineering and physics, you learn to think in very precise ways and to attack a problem in many different ways. That is part and parcel of what it takes to be an engineer, what it takes to be a physicist. And the way I am approaching composition is coloured by math and physics, in a sense of looking at patterns and ways to incorporate them into music and different formations of thematic materials and things like that."

Engineering artistry

Who knew that a degree in computer engineering could lead to a musical career in something other than electro-pop?

It's admittedly a terrible stereotype, and the music that Nils Edenloff (Computer [Co-op] '02) makes with his Toronto-based band The Rural Alberta Advantage doesn't come anywhere close to it. Instead, Edenloff fashions warm, almost nostalgic indie rock

with minimal technological requirements—keyboard, guitar and percussion.

"The idea was to not spend much money, yet get as big a sound as we can from what we already have," Edenloff explains from his Toronto home, preparing to set off on yet another North American tour. "I'm still a computer programmer during the day, and I think my occupation, as well as the years I had in the Faculty, taught me to think this way. Plus multitasking, doing a million things at once—that's clearly a good skill to have in either occupation."

"In both worlds, I try to pare things down to their essence. With the band we're trying to come up with a simple sound that sums up the music as elegantly as we can."

Stripping away unnecessary frills may have been a pragmatic gesture on Edenloff's part, but it's also been a successful artistic one for the Fort McMurray native. He and his two bandmates (Paul Banwatt and Amy Cole) have been critically lauded across



As a composer, Aaron Hryciw (Engineering Physics '02) is inspired by science and nature.

North America and Europe, most glowingly by the popular and influential music site Pitchfork for their 2008 album *Hometowns*. The achingly hip record company Saddle Creek scooped the band up almost immediately, and today The Rural Alberta Advantage has become one of the most talked-about bands in the industry.

Edenloff is clearly still bemused at the attention, but he's also making the most of it. He can see where his education and continuing work in his profession contribute to his successful handling of band business, but he also notes where his engineering background is seeping into the music itself.

"I know it seems weird, but I maybe attack music in an analytical fashion. I feel that sometimes I break down songs in what could be described as an engineering way. Maybe I'm programmed to think like that—I have no way of backing it up," he laughs.

His background is even reflected in his distinctive guitar tone, proof positive Edenloff is never going to quite shake his four years in the Faculty.

"When we started without a bassist, people would say we sounded good, but something was missing," he relates. "Now I put my guitar through two signals, one that's standard guitar and the other bass, so it's all filled in. I realized later that it was my engineering training, really. 'There has to be a way to solve this problem of tinny, high end sound.' I balanced it, and that solved the issue."

"I know it seems weird, but I maybe attack music in an analytical fashion. I feel that sometimes I break down songs in what could be described as an engineering way."
—Aaron Hryciw

The Crossroads

When he was a teenager, it could have gone either way for Bruce Pinkney (Civil '59, MSc Civil '63).

Studying as an undergraduate civil engineering student, Pinkney paid his room and board at Athabasca Hall by playing viola for the Edmonton Symphony Orchestra. The aptitude for music and interest in engineering didn't cause any clashes at the outset, but his university mentors knew that Pinkney was bound for a crossroads sooner rather than later. Engineering and music both sought his gifts.

"George Ford, the grand old man of engineering, said to Richard Eaton, the grand old man of the music department, that if he would leave me alone Ford could turn me into an engineer," Pinkney recalls now with a laugh. "Eaton responded that if Ford would leave me alone, he could turn me into a musician."



Pinkney was certainly more of a professional musician at the beginning. His paycheque from the symphony was \$55 per concert, of which there were 10 a season. This, coupled with a summer job, enabled Pinkney to make tuition and living expenses. While he seriously considered his options as a fledgling violist, it was Ford's team that won out. Pinkney left for the U.S. in 1964 to continue on with grad school. While he had the occasional experience playing with orchestras, they became few and far between.

Pinkney ended up teaching at the University of Manitoba, where he also doubled as the school's concertmaster for a number of years. He has always enjoyed his sideline with the viola, but has long shaken off the idea that he might have taken a different life path.

While engineering is stimulating and provides a rewarding and creative career, music has always been an intuitive love, something that Pinkney doesn't clutter with too much analysis.

"I was never much of an academic on the subject," he admits. "I've lost most of the theory and history over the years, so my understanding is limited in those terms. If you're talking about the math behind classical music, well, I've never approached music that way. I know that, for instance, Bach is considered to be a mathematical composer, but I don't know if he knew that while he was writing."

Pinkney taught for 29 years in Manitoba, and returned to Edmonton in 1999. He still plays, teaming up with a few of his old ESO friends for rehearsals, and performing in concerts at Concordia College.

"I wouldn't say, in my case at least, that one has affected the other," Pinkney muses. "I would think that if there was a spinoff from music to engineering it would be in creativity.

"I don't consider myself to be particularly creative, because I don't write the music that I play. But I could see where a composer who thinks outside the box would be like a good engineer who does the same."

Tom Murray is an Edmonton-based musician and journalist who has written and performed across Canada. (With files from Richard Cairney.)

Bruce Pinkney (Civil '59, MSc Civil '63) performed with the Edmonton Symphony Orchestra while earning his engineering degree.



A photograph of two women standing side-by-side. The woman on the left is younger, with long brown hair, wearing a green short-sleeved top with a dark pattern and black pants. The woman on the right is older, with short brown hair, wearing a light green long-sleeved top and black pants. They are both smiling. The background consists of a brick wall on the left and a window on the right showing a cityscape. The text 'All in the Family' is overlaid in large white font on a dark red background at the bottom of the image.

All in the Family

by Richard Cairney

If you speak with Karen Madro (Civil '81) and Shawna Low (Chemical '84), you might get the idea that the engineering bug runs in the family. For starters, they're sisters. Further, they both have daughters who are studying to become engineers.



Shawna Low (Chemical '84) and daughter Emily (previous page) are keeping the engineering profession in the family with Karen Madro (Civil '81) and her daughter, Erin.

Growing up on a farm near Ponoka, Alberta, with two other sisters and no brothers, the pair never really considered their education and career paths to be anything out of the ordinary. They had been taught that if something needed to be done, from changing the oil in the car to repairing heavy equipment, you did it. And, in their family, the prospect of higher education was simply a given. "It was never a question of if you were going to take some sort of post-secondary education," says Karen. "It was a question of what you were going to study when you got there."

And so, when she pondered what to study in university, Karen considered medicine or nursing. For one reason or another, she ruled out medicine. And she struck nursing from the list because she didn't fit the profession's predominant mold.

"I sent away for some information, and I got this formula back about what I had to wear and how many pairs of white stockings I had to have," Karen recalls. "I wanted to break some paradigms, quite frankly."

Working with her high school guidance counselor, Karen came up with the idea of studying architecture. Her counselor suggested civil engineering first, and Karen thought it made sense. But things took a turn: "I didn't really like the structural part, so I started taking some chemistry minors, which is how I ended up in the oil patch. It was that conversation with the guidance counselor who said 'This is something you can build off of.' The degree is good on its own, or you can use it to go into something else."

Karen proved to be something of a role model for Shawna, who became intrigued with engineering.

"What Karen was doing looked really interesting to me," recalls Shawna. "I always loved math and science and [engineering] is one area you can supposedly come out of with a job. In some of the more general sciences, it is a bit harder to define what your career could be, and within engineering there are so many things you can do. It is broad enough that you can move around and be challenged for your whole career."

So how then did the two sisters end up with daughters who are studying engineering? It turns out that a little parental guidance can go a long way. In Shawna's case, it was almost a matter of trying to discourage her daughter Emily from enrolling in engineering.

"She was very strong in math and science in high school, and when she began looking at engineering I told her to be very certain," says Shawna. "I told her, 'Don't do it because I do it, or because your aunt is doing it. Going through engineering is a

"Engineering is a fabulous platform for whatever you want to branch into. I'll tell any student who is studying engineering, that what the program teaches you is how to think."

lot of hard work and if you aren't sure you want to be there, it will be a lot harder.' So she did examine the whole range of math and science career opportunities."

Emily is now in her second year, studying chemical engineering at the U of A.

Karen, on the other hand, actively convinced her daughter Erin to study engineering.

"I remember when I was growing up thinking I wouldn't be able to be an engineer, that I didn't have the capability," says Erin. "And one day when I was in Grade 10, my mom and I were going up a chairlift at Nakiska, and she said, 'Why don't you consider engineering?' And I said, 'Me?!' Because I was good at math and science but I was always better at things like English and social studies. I had the perception that engineering was purely about math and science and physics.

"She said, 'You don't really have to be an engineer at the end of the day, because it teaches you a way to think about problem-solving and gives you a really good way to look at the world and see things from a logical perspective, a wider perspective.' So, I thought I would look into it."

Passionate about the environment, Erin chose to study environmental engineering.

To the chagrin of her family, she enrolled at the University of British Columbia. But, like her cousin, she is studying a discipline her aunt Shawna helped pioneer. If there were engineering professionals called 'environmental engineers' when Shawna became one for Union Carbide in 1989, she hadn't met any of them.

"There really wasn't an 'environmental field,'" Shawna says. "When I went through school you could take the odd course like an air dispersion modeling course. You kind of had to specialize after you graduated. There was a lot of training on the job and outside courses. At that point, in the late 1980s, it was a new and exciting field, and it was a real challenge because there were a lot of new federal and provincial regulations coming out that you had to comply with."

She brought plants up to those standards for Union Carbide (now DOW), at Prentiss, Alberta and in Montreal and Sarnia. "We had to work on things like fugitive emissions and point-source emissions. The whole area of environmental assessment and protection was really starting to come in, and I had always been passionate about preserving the environment."

In 1997, Shawna started her own consulting firm, Envirowest Engineering, which she runs to this day. Karen, on the other hand, has spent her entire career with Shell. But she has also enjoyed a great variety of roles—starting as a technical engineer, and moving into management 20 years ago. She is presently Shell Canada's Venture Manager, Peace River Development.

Her education and work as an engineer "really set me up well for the kinds of senior management roles I've been in for the past 20 years," Karen says. "Engineering is a fabulous platform for whatever you want to branch into. I'll tell any student who is studying engineering, that what the program teaches you is how to think. Once you get that, you can apply it to anything—people problems, technical problems, machine problems—anything."

So, the next generation of engineers—to wit, Erin and Emily—are well on their way. Both have taken advantage of their family ties to the profession, phoning their mothers with specific questions, or simply when they need a little boost.



"I did call my Mom once in a while during my first year when I was struggling, and she'd say, 'You've got to keep going, you've got to pass and get through it.' There were definitely times when you needed that motivation."

Emily agrees. At times she, too, has asked her mother for help in understanding new concepts. And her mother's success has always served as a professional inspiration. "I remember during first year some people not really knowing what engineering was, but when you are exposed to it, like Erin and I have been, you have a way better idea and you see where it can take you."

Their mothers' support and examples also taught the young cousins an important lesson in engineering. "It's all about teamwork," says Shawna. "Everybody brings something to the table," she says. "In engineering, rarely are you in a solo situation."

Especially in this family.



Show us your ENERGY

The Faculty of Engineering is now accepting submissions from our alumni for the 2011 calendar. This year's theme is *Energy*.

Send us photos of anything that you feel depicts energy: an electrical storm, an engine, a structure—whatever captures your eye and imagination.

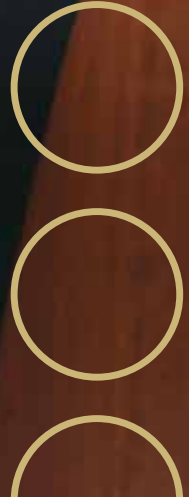
The deadline for submissions is July 1.

For more information contact Richard Cairney at editor@engineering.ualberta.ca or 780-492-4514.





Brian Heald (MSc Civil '83) connected the dots in his career from engineering to investment banking.



From. Engineering. to Economics

BY SUZANNE HARRIS

Brian Heald's engineering expertise gives him credibility as an investment banker—and he has come up with a financial plan to thank the Faculty of Engineering.

His career path began typically enough. You would expect a mechanically inclined kid who loved to take things apart and figure out how they worked to grow up to be an engineer. Throw in a keen interest in geology, and voilà: geotechnical engineering in particular becomes an intriguing and rewarding career choice.

It made sense to Brian Heald (MSc Civil '83). "Engineering was always the obvious choice for me," Heald says. Less obvious is what happened next.

Today Brian Heald, PEng, also holds an MBA and a CFA (Chartered Financial Analyst) designation, and is a managing director of Calgary Investment Banking, CIBC World Markets Inc., the wholesale and investment banking arm of the CIBC.


So how does an engineer become an investment banker?

Back in 1980, Heald, who had received his undergraduate degree in engineering

from Queen's University, was working as a young professional engineer in the geotechnical consulting business in Calgary. He decided to get his master's degree in geotechnical engineering and enrolled at the University of Alberta.

"It's not overstating it to say that the University of Alberta's geotechnical engineering program was world-class and world-renowned," says Heald. He credits the standard of excellence in part to the leading academics who taught there. Professor Norbert Morgenstern, for example, had a worldwide reputation in soil mechanics, both as an academic and as a consulting practitioner. Morgenstern's reputation and the strength of the Faculty attracted Heald as well as many other geotechnical graduate students from around the world.

"I valued the education I was receiving, but it wasn't only the academics," says Heald. "The exposure to the international



students was a real strength of the program as far as I was concerned.”

Still in his 20s, Heald had not travelled much internationally, and the sharing of stories and cultures broadened his view of the world. And sometimes drove home how truly fortunate he was.

Heald recalls a visiting academic from China with whom he shared an office for a time.

“He wasn’t there to complete a degree program but to gain knowledge to take back to his country and assist in educating others. And while we weren’t particularly close—the language and cultural barriers were just too great—when he was preparing to return to China, he presented me with a small porcelain Chinese cup,” says Heald. “I still have it. It was a very memorable

“My technical training means I speak the same language as the people I interact with—engineers, geologists, and geophysicists.”

moment. There was a lot of gratitude in that gesture. He really appreciated the opportunity to be here and to experience what we experience—and take for granted—every day in Canada.”

In the spring of 1983, Heald successfully defended his master’s thesis on the geotechnical characteristics of the Devonian formation underlying the oilsands projects in Fort McMurray.

Unfortunately, however, Canada was in a recession, the economic environment was weak, confidence was low and there was little hiring going on. The federal government’s National Energy Program had devastated the Canadian oil and gas sector. Jobs in the field had dried up.

“When I graduated with my MSc, I had every intention of continuing to work in engineering,” explains Heald. “But it was very difficult for new graduates to find work at that time.”

A few of his classmates decided to continue with their education and pursued PhDs. “Most eventually found their way back into the workforce in an engineering

capacity and many of the international students simply returned to their home countries.”

Heald, too, had considered a PhD, but in the end he chose a different path. “My decision to pursue an MBA was life-changing,” he admits.

It wasn’t a bizarre leap, since economics and finance had been personal interest areas for Heald all along. He enrolled in the MBA program at the University of Western Ontario and graduated in the spring of 1985.

By then the economy had strengthened, and the energy industry looked like a good place to be. He returned to Calgary, was recruited by Gulf Canada Resources and became a financial analyst in their corporate planning group. He has worked in financial analysis and investment banking ever since.

Although he deviated from his original career path, Heald says his engineering background has been an asset throughout his career and continues to be an important component of his skill set.

“The logical thought process developed in engineering is something I rely upon every day,” he says. “It is the discipline to think critically and analytically about the business plans, projections, valuations and economic or investment potential of the companies we underwrite and recommend to our investor clients. The earth science knowledge is specific to the oil and gas industry, and assists me in understanding the technical potential of a certain exploration or development program. Both skills are directly useful in what I do now, and both are valuable when completing due diligence and when making business and investment judgments.

“My technical background means I speak the same language as the people I interact with on a daily basis—engineers, geologists and geophysicists. No one has to stop to explain the basics of the industry and I think that is extremely valuable in what I do.”

So he maintains the PEng (non-practising) designation, because he has not actively practised engineering since 1983. “It’s an important asset career-wise.”

Of course you can never really take the engineering out of an engineer, and anyone

who has been a mechanically minded kid knows that no matter what your job is, you never stop being a mechanically minded kid.

“I always loved taking things apart and still do! I’ve restored cars over the years and I’m working on one now, a 1971 Porsche that I’ve owned for over 20 years. I love mechanical things; it’s just the way my brain works.”

Heald also enjoys sailing, a pastime that on many levels is all about the interplay of physics and math.

“There are lots of opportunities to apply engineering, physics and analytical skills to the things you do on a sailboat,” he says, enthusiasm evident in his voice.

“From an understanding of the speed/direction/force of the wind and sea, their effect on the boat’s performance, the need to adjust sail area, trim and point of sail, and to balance the foresails and mainsail for optimal speed, direction and safety... vectors, latitude, longitude, speed, drift, current...all necessary in navigation.”

He adds that mechanical and electrical skills are also important when things go wrong on a boat, which they do. You have to be self-sufficient and able to complete your own repairs.

“Our boat is called *La Finestra*, which is Italian for ‘the window,’ symbolizing the window of opportunity she provides to explore the world’s oceans and ports, and the window on one’s life to learn, enjoy and share great experiences.”

His appreciation for learning and experience makes Heald’s decision to leave a bequest to the Faculty of Engineering another obvious decision for him.

“It’s pretty simple. I wouldn’t be where I am in life without the education I received. I had the great opportunity to attend and receive an education from the finest universities in this country, and the bequest is one way of giving back.”

“I think engineering is a tremendous undergraduate education to have, regardless of whether you end up in business or some other career. It’s a great training for life. You don’t have to practise engineering your whole life to find it useful.”

Suzanne Harris is an Edmonton-based author and journalist.

H. GÜNTER SCHMIDT-WEINMAR

1928-2009

H. Günter Schmidt-Weinmar, Professor Emeritus of Electrical and Computer Engineering, passed away January 19, 2009, at his home in Duncan, B.C., following a brief illness.

Günter was born at Dresden, Germany, on March 18, 1928. For his secondary education he attended the Kreuzschule in the city of Dresden, where his talents in physics, mathematics and music were first recognized. He proved to be a gifted pianist and at one time had to make a choice between possible careers as a physicist or a concert pianist. He chose physics, but also enjoyed playing piano recreationally for the rest of his life.

He received the Diplom-Physiker degree from the Free University Berlin, Berlin, Germany, in 1954. He was accepted at the Federal Institute of Technology Zurich (ETHZ) for postgraduate studies in quantum physics with the physicist Wolfgang Pauli and the mathematician

P. Bernays. Unfortunately, Pauli died during the second year of Günter's studies. For some time there was no decision made about the successor, so Günter accepted a thesis topic in electrochemistry, as a continuation of work that he had done at ETHZ. He received the degree Dr. Sci. Nat. from the ETHZ in 1961.

At the Free University Berlin Günter met Marli; they married in 1956. Marli had also been trained in physical sciences and received the degree Diplom-Physiker from the Free University Berlin, Berlin, Germany, in 1954. Their partnership in marriage and in scientific collaboration lasted a lifetime. A daughter Annette and a son Andreas were born to them.

The family moved to Edmonton in 1968, where Günter was for one year a PDF with the Department of Mechanical Engineering at the University of Alberta. In

1969 he joined the Department of Electrical Engineering, became a Professor of Electrical Engineering in 1975, and served until his retirement in 1989.

Günter's research interests and his expertise were broad. At age 65 he took up old questions in quantum physics he had left behind in Zurich in 1958. A final manuscript, *Momentum Distribution in a Quantum System of Constant Energy*, was completed in December 2008.

During the 40 years in Canada, the family also enjoyed many vacations spent hiking in the mountains of Alberta and British Columbia.

Günter is fondly remembered by his former colleagues and students as a friend and as one who loved to think about and investigate important questions. He will be missed.



In Memoriam

The Faculty of Engineering sincerely regrets the passing of the following alumni and friends.

Donald Albers, Mineral Process '62, in November 2009
Robert Bailey, Civil '55, in June 2009
Ch Kwo Chang, Professor Emeritus, in July 2009
Albert Edward Chase, Electrical '51, in August 2009
Joneson Y. Chiang, Electrical '05, in September 2009
E. Jack Cuyler, Chemical '46, in January 2010
A. Gordon Dale, Petroleum '55, in January 2010
Zupito D'Amico, Mining '48, in September 2009
William Dockery, Petroleum '52, in January 2010
John James Eatock, Chemical '49, in May 2009
David Ronald Fehr, Electrical '06, in October 2009
Maria Fogarasi, Mineral Process '58, in December 2009
Allan Bruce Fox, Civil '57, in October 2009
Allan Edward Fries, Civil '70, in July 2009
Carl Oliver Gerard, Mechanical '67, in December 2009
D. Campbell Gordon, Chemical '51, in May 2009
James Lewis Grant, Chemical '48, in August 2009
Hazel (Millett) Greenway, Chemical '49, in December 2009
Hugh Stephen Hicklin, MSc Electrical '70, in September 2009
H. Michael Howard, Civil '60, in September 2009
Murray Carslaw Hyslop, Mining '49, in August 2009
Michael John Johnson, Civil '69, in January 2010
David Alan Kellendonk, MSc Environmental '87, in May 2009
Randolph Mathias Lauer, Mining '41, MSc Mining '47, in November 2009

Walter Max Lenz, Chemical '63, in December 2009
Neil William MacDonald, Electrical '62, in November 2009
Douglas Joseph Miluch, Electrical '81, in July 2009
F. Howard Moss, Civil '50, in December 2009
Lionel Mckechnie Narraway, Mining '51, in September 2009
Peter John Nicolls, Mechanical '80, in March 2009
Robert C. Peck, Civil '40, in January 2009
H. Lynn Perrin, Electrical '62, in August 2009
Albert Harold Preboy, Electrical '48, in June 2009
Robert Gardiner Price, Chemical '46, in September 2009
Richard Gavin Reid, Chemical '49, in December 2009
James John Rolston, Civil '57, in August 2009
Grant Arnett Ross, Civil '59, in January 2010
James T. Ryan, Professor Emeritus, in December 2009
Alfred A. Ryter, Mining '42, in May 2009
Benjamin Samuel, Civil '43, in August 2009
Walter George Seyer, Chemical '65, in October 2009
John William Sharpe, Chemical '49, in October 2009
Lawrence Sinclair, MSc Electrical '84, in November 2009
Colin James Smith, Civil '76, in December 2009
Philip Strashok, Electrical '51, in October 2009
James Alexander Stretton, Civil '49, March 2009
Victor Swanberg, Civil '51, in November 2009
Alexander Anthony Tesan, Civil '66, in January 2010
Geoff Walsh, Chemical '61, in October 2009
B. James Wensley, Civil '52, in October 2009

John Henry Westlake, Electrical '52, in September 2009
William John Yurko, Chemical '50, in January 2010

The Faculty of Engineering was recently made aware of the passing of the following alumni more than a year ago.

Lemuel G Barnes, Civil '50, in January 2008
Walter John Baylis, Electrical '41, in December 2004
Ernest Belik, Mining '51, December 2006
Sam Belzberg, Chemical '45, date unknown
H. Deryck Berry, Mining '40, October 2002
Bruce Aston Cameron, Mining '47, date unknown
Mary Ellen Dougherty, Engineering Physics '49, date unknown
Carl W. Dumka, Electrical '50, date unknown
Donald Joseph Forest, Electrical '49, in November 2003
Victor Henning, Mining '41, in August 2003
Gerald Alexander Martin, Chemical '49, MSc Chemical '52, in October 2008
John William McDearmid, Electrical '51, in April 2008
Joseph Remi J Meunir, Electrical '62, in August 2003
James Patrick O'Dwyer, Civil '57, in 2008
Edward Vivian Payne, Civil '75, date unknown
Hem Richard Pon, Electrical '42, in December 1998
Joseph William Preboy, Mining '42, in July 2005
Thomas Earl Staples, Civil '87, in January 2004
Dale Richard Younge, Engineering Physics '62, in June 2005

Riding the high-speed rails



Ralph Garrett (Civil '66) sees a bright future for high-speed rail in Alberta.

Talk of a bullet train connecting Calgary and Edmonton has been around for years. Who would have imagined that a recession would bring the project one step closer to reality? **BY JUDY MONCHUK**

Ralph Garrett (Civil '66) is a man with a high-speed vision. "Visualize the LRT on steroids," says Garrett, vice-president of infrastructure at Alberta High-Speed Rail Inc., his eyes lighting up at the image. Outside his office, cars inch along Calgary streets in a howling blizzard.

For more than a decade, Garrett and his partners have faced numerous obstacles as they tried to raise enough interest and money to build North America's first high-speed railway: a bullet train running in the Edmonton-Calgary corridor. The executives have spoken at every Rotary Club meeting and chicken dinner from Pincher Creek to Edmonton, outlining the potential benefits of their proposal: railcars zipping alongside the Queen Elizabeth II highway at upwards of 300 kilometres an hour, slicing the three-hour travel time between Calgary and Edmonton to 84 minutes, including a stop in Red Deer.

High-speed rail, they insist, could turn Alberta's three largest communities—Edmonton, Red Deer and Calgary—into one virtual city, and boost economic activity in the process.

"People could live in Sylvan Lake and work in downtown Edmonton or Calgary," says Garrett. Plenty of people in Toronto face a one-way commute of more than 80 minutes, he points out.

Garrett has spent more than a quarter century in the rail industry. He oversaw construction of a 425-kilometre mining railroad in Australia, and spent 17 years with Calgary Transit—starting as a building supervisor on the northeast and northwest legs of the city's light rail transit system, and ending with eight years overseeing maintenance of the entire LRT system. But his campaign for a high-speed railway in Alberta has proven a frustratingly difficult challenge.

The proposal has been kicked around the province since the 1980s and repeatedly dismissed as too expensive. But the price

tag for this latest version is pegged at a relatively modest \$2.5 billion.

That figure may sound overly optimistic, considering Calgary's current west-end LRT extension is forecast to cost \$600 million. But Garrett insists his numbers are supported by rigorous analysis. While many would expect property costs to be a huge expenditure, the railway would only require a narrow strip of land for the tracks that would run parallel to the QEII. Garrett estimates this will add up to 1,470 hectares, costing a maximum of \$50 million.

Still, one might assume Alberta's current economic tailspin would bump a \$2.5 billion idea off of the table. After all, Alberta's last recession in the 1980s killed the original pitch, when the Lougheed government was studying the potential of faster Dayliner rail service between Edmonton and Calgary.

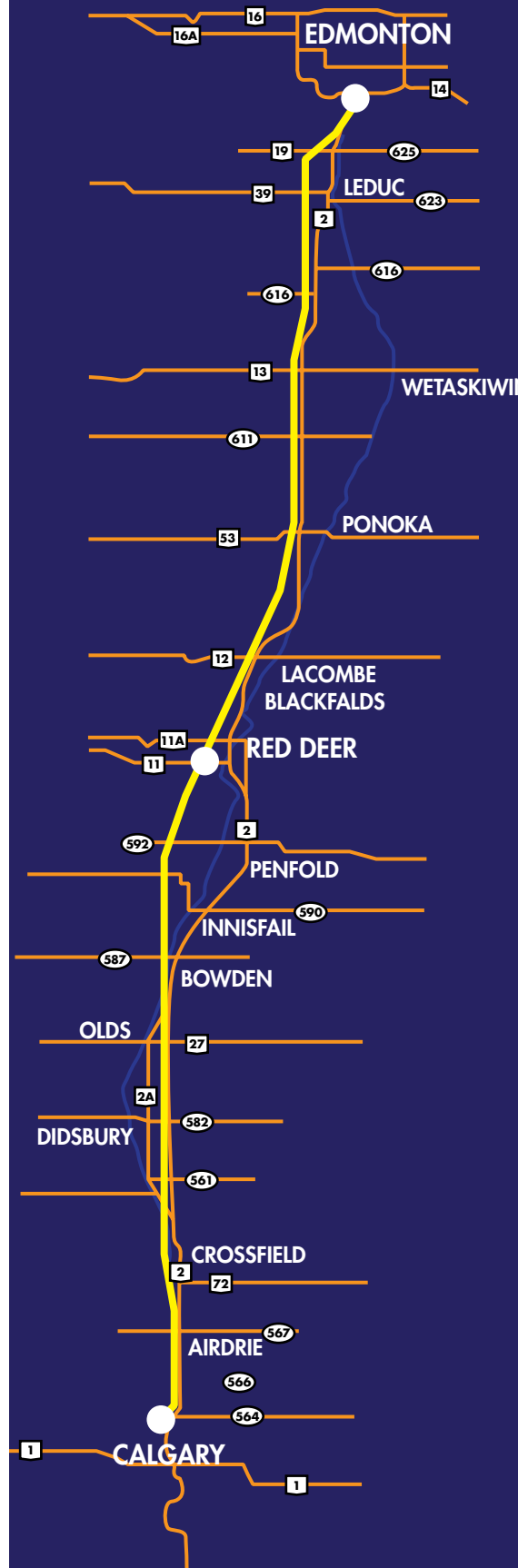
But, that assumption would be surprisingly wrong. In fact, as Alberta's economy has taken a pounding, Ralph Garrett has watched the stars align for his project. A recession may prove perfect timing for an innovative infrastructure proposal. "It's brought down the price of construction, it's brought interest rates down and created (government) stimulus dollars," Garrett says.

The brightest light came last July, when the Alberta government released its market assessment study of potential high-speed rail service. The ridership document was an investment-grade study, one that should carry weight with the financial community. In Garrett's mind, it was a make-it-or-break-it document. After a decade of lobbying, he had been prepared to cash in his chips if the report's tone was lukewarm.

"We were getting pretty low before the ridership study," he says. "We'd played all our cards."

Instead, Garrett and his partners hit the jackpot. The report found that, in 2006, nearly 10 million passenger trips took place in the Calgary-Edmonton corridor. The vast majority, 91 percent, traveled by car

The proposed route



and another three percent traveled by bus. Only six percent of passengers flew.

As well, according to the study, as Alberta's population has risen in recent years, so too has the rate of passenger travel between Edmonton and Calgary: more than three percent growth each year for the last decade. The trend is expected to continue. The provincial study estimated that high-speed rail ridership will increase by 35

USING THE ALBERTA GOVERNMENT'S STARTING PROJECTION OF TWO MILLION RAIL RIDERS ANNUALLY, THE BULLET TRAIN COULD CUT GREENHOUSE GAS EMISSIONS BY 150,000 TONNES A YEAR.

percent between 2021 and 2031, and by 43 percent from 2031 to 2051. It also found people willing to pay fares ranging from \$56 to \$120 for a one-way trip, increasing their payment for faster trains.

"It was a jaw-dropper," marvels Garrett. "It was exceptionally good news."

Although the document did not make any recommendations on future government involvement in such a project, the numbers generated significant interest from potential investors—along with political goodwill. High-speed rail has attractive payoff potential to a Conservative government that could use a good-news project like this to stimulate the economy.

As the impact of the global recession became evident, Alberta went from an

anticipated \$8.5-billion surplus to a \$4.3-billion deficit in a matter of months. Tens of thousands of people lost their jobs. The world media focused on Alberta's "dirty energy" at December's massive climate change conference in Copenhagen. Day after day, the province was hammered for being an environmental dinosaur.

But high-speed rail is an environmentally friendly story, potentially cutting the number of vehicles on the road while at the same time reducing greenhouse gas emissions. Using the Alberta government's starting projection of two million rail riders annually, the bullet train could cut greenhouse gas emissions by 150,000 tonnes a year, says Garrett.

Even before the economy collapsed, Garrett and his partners received a positive reception from Premier Ed Stelmach. Garrett knows timing is on his side.

"They are looking for a marquee project that will set Alberta apart," says Garrett. "They need a good-news story."

Interest has also been spurred by U.S. President Barack Obama's \$8-billion commitment to create a national network of high-speed passenger trains, aimed at reducing traffic congestion and reducing greenhouse gas emissions.

With the changing landscape, Alberta High-Speed Rail is looking at financial options that don't include provincial funding. Since mid-November, potential investors have been seeking out the company to discuss the project. "We've been restructuring our proposal to see if it will stand with just private money," says Garrett. The partners also made a presentation to the federal standing committee on transport, infrastructure and communities, which is gathering information for its national study on high-speed rail.

Yet, the environment or the economy might not ultimately be the biggest factors in making high-speed rail a reality.

As Alberta's population has grown, the province's busiest highway has become more congested. On any given day, traffic on the QEII ranges from 22,000 to 68,000 vehicles, with the higher counts closer to Edmonton and Calgary. A decade earlier, in 1999, the volume ranged from 17,000 to 42,000 vehicles a day.

Heavier traffic has translated into more highway accidents between the two major cities. In 2001, eight people were killed and another 336 injured in 916 reported collisions. By 2008, the number of accidents had jumped to 1,423, with nine fatalities and 370 people injured.

In other parts of the world, high-speed rail has proven to be the most efficient and cleanest form of transportation with an impressive safety record. In Japan, bullet trains moving at upwards of 250 kilometres an hour have moved people for more than 40 years—without a single passenger fatality.

"Green is a bonus. Productivity is a bonus. I think the biggest factor is safety," says Garrett. "People are damn scared of driving that highway, especially in the winter."

If and when the trains start rolling, Garrett predicts that people will jump at the chance to shave three or four hours off an Edmonton-Calgary round trip.

"Maybe that's billable hours, maybe that's grandchild time. But it's time. Ask people what they want and they usually say more money and more time. This will save you both."

Judy Monchuk is a journalist and author living in Calgary.

BEAULIEU, NORMAN
PEng



Norman Beaulieu, Professor and iCORE Research Chair in Broadband Wireless Communications in the Department of

Electrical and Computer Engineering, has been awarded the 2010 Reginald Aubrey Fessenden Silver Medal “for outstanding contributions in wireless communication theory” by IEEE Canada.

DiBATTISTA, JEFF
(MSc Structural '95, PhD Structural '00) PEng



Was presented with the University of Alberta Alumni Horizon Award in recognition of outstanding achievements early

in his career. DiBattista has worked on major Edmonton landmarks including the National Institute for Nanotechnology at the U of A, the Edmonton Clinic (under construction at the U of A campus) and the first Alberta private-sector building to earn the LEED Gold designation, the PCL Centennial Learning Centre. A principal with Cohos-Evamy integrated design, DiBattista also collaborates with the Department of Civil and Environmental Engineering, co-founding and supporting the fourth-year structural design competition.

FARQUHARSON, GRAHAM
(Mining '64) PEng



Was inducted into the Canadian Mining Hall of Fame in January 2010. Farquharson is president of Strathcona Mineral Services of

Toronto, and is one of the mining industry’s most highly respected consultants. He was instrumental in the development and management of Canada’s first mine north of the Arctic Circle, Nanisivik, on Baffin Island, and in the exposure of the Bre-X fraud. Since 1992 he has been chair of the Canadian Mineral Industry Education Foundation, the largest provider of university scholarships to students entering the mining industry in Canada.

HALL, DAVID
(Petroleum '85)

Has been appointed as the Chief Executive Officer and President of RMS Systems Inc. Hall was appointed as a director of Tiger-Cat Energy Ltd. in November 2005. He was also a founder of C-Data Communications Inc. Upon the amalgamation of Tiger-Cat and C-Data to form RMS, Hall continued as a director. He is currently a director of Aqueous Capital Corp. and a director and officer of other private companies.

KENT, WILLIAM
(Civil '31) PEng



Was presented with the University of Alberta Alumni Honour Award for significant contributions to society. At the age of 101, Kent is one of the U of A’s oldest alumni. Kent worked for 41 years as a Civil Engineer, building major structures across Canada, beginning with the Lion’s Gate Bridge in Vancouver, B.C. and continuing with hydro plants, dams, bridges buildings and causeways.

MARSDEN, RANDY
(Electrical '89) PEng



Was presented with the University of Alberta Alumni Honour Award for significant contributions to society. Marsden is president

and CEO of Madentec—a company that has positively changed the lives of more than 20,000 individuals worldwide by developing innovative technologies for disabled persons, enabling “extraordinary people to do ordinary things.”

ORYNIK, JARED
(Materials '02) PEng

Has been appointed senior metallurgist for Fortune Minerals Ltd.’s proposed Saskatchewan Minerals Processing Plant. Orynik brings hydrometallurgical expertise to Fortune Minerals to augment its existing team of in-house process and mining engineers.

SCOTT, ALLAN
(Mechanical '68) PEng



Was presented with the University of Alberta Alumni Honour Award for significant contributions to society. Allan Scott’s formidable

career has included leadership positions with some of Canada’s top industry giants, including Canadian Utilities and TELUS. Scott worked with EEDC and the University of Alberta to help develop and launch TEC Edmonton. His love of the arts has made him invaluable to the Art Gallery of Alberta (formerly the Edmonton Art Gallery) where he has sat as chairman and chief fundraiser since 1998, raising over \$88 million towards rejuvenating the gallery and the arts in Edmonton.

SIDDON, TOM
(Mechanical '63) PEng



Was presented with the University of Alberta Alumni Honour Award for significant contributions to society. At a certain point,

politics entered his world and, in the years after his appointment as a Member of Parliament to the Cabinet of Prime Minister Mulroney in 1984, Siddon served as Minister of Fisheries and Technology, Minister of Fisheries and Oceans, Minister of Indian Affairs and Northern Development, and Minister of National Defense consecutively. In office for over 18 years, Siddon was instrumental in initiating and implementing many successful and influential projects, including establishing the foundation for the Canadian Space Agency and achieving the signing of the International Space Station Agreement with the U.S. in 1984. Today, Siddon serves on the seven-member National Advisory Panel of the Royal Bank of Canada, overseeing the Blue Water Project, and sits as chair of the Okanagan Stewardship Council and director of the Okanagan Basin Water Board.

STAPLES, LARRY
(Civil '74) PEng



Was inducted into the Canadian Academy of Engineering in July 2009. Staples is a leader in the research, development, and application of cutting-edge technology to meet societal needs. He is also well known for his volunteer leadership in APEGGA, spanning three decades, as well as with a variety of technical societies and community organizations, all of which aim to serve the public interest and to improve our quality of life. He was elected as a Fellow of the Canadian Society for Civil Engineering in 2001, and served as APEGGA’s 86th president in 2005.

Do you have news to share?

Send your news of awards, appointments, and other successes to engineer.alum@ualberta.ca

class organizers a class act

by Jenna C. Hoff

Each autumn the University of Alberta hosts its Alumni Weekend, an event which brings thousands of alumni back to their alma mater to reminisce about their student days, marvel at the changes that have occurred on campus since those days, and learn about the University's exciting plans for the future.

As with any large event, countless people work behind the scenes to ensure each Alumni Weekend is the success it has become known for. Chief among these hard working people are class organizers, alumni who step up and take on the responsibility of connecting and sharing information with their former classmates, as well as organizing class-specific events (such as lunches or tours) that coincide with faculty-run events.

“Alumni Weekend would not be the success it is each year without the hard work and enthusiasm of our class



organizers,” says Leanne Nickel, Manager of External Relations for the Faculty of Engineering.

Nickel, who recruits class organizers and oversees the planning of faculty-based Alumni Weekend events, says the sheer numbers of classes that formally participate in Alumni Weekend activities make assistance from class organizers essential. “There simply aren’t enough of us to go around for all of the reunions that take place each year—usually two dozen or more,” she says. She adds that, more importantly, alumni are often more interested in attending an event when invited by a classmate whom they know.

According to Jack Nodwell, class organizer for the Mechanical Engineering class of 1964, the duties of a class organizer include contacting former classmates (using a list provided by the Faculty), sending letters and emails (the Faculty assists with drafting and mailing letters), making suggestions for bio books, and organizing additional class events to coincide with the faculty-organized Alumni Weekend events. Class organizers are also required to attend at least one event during Alumni Weekend, and to help the Faculty reconnect with alumni with whom they have lost track.

For many, the opportunity to reconnect with former classmates is the best part of being a class organizer. “Engineering alumni are possibly the most enthusiastic alumni at the U of A, and they’re usually eager to get together and reminisce. Class organizers find they truly enjoy catching up with their former classmates. I have even heard that some enjoy the detective work involved in tracking down that classmate everyone lost touch with years ago,” says Nickel.

“The civil engineering education was a close, shared experience so even though I had limited contact with most of the classmates after graduation, there was a desire to reconnect and see how they were doing,” says three time class organizer Bill McLean of the Civil Engineering class of 1969.

“A lot of the responsibilities of being a class organizer are more social than work,” agrees Dave Rumbold (Mechanical ’84). “I would call people I hadn’t spoken to in years to just tell them briefly about the

“Engineering alumni are possibly the most enthusiastic alumni at the U of A, and they’re usually eager to get together and reminisce. Class organizers find they truly enjoy catching up with their former classmates.”

event, and we’d still be on the phone an hour later.”

Romeo Resaul (Civil ’69), who assisted McLean, saw his efforts as a way to reconnect with family. “By the time we graduated, we were essentially a family of 47 guys. Rediscovering ‘family’ is one of the most enjoyable experiences one can encounter,” says Resaul, who as a student travelled far from his homeland of British Guiana to attend the U of A. “I would certainly encourage others to experience the joys of being a class organizer. It is very pleasant work,” says Resaul.

For Peter Woods (Civil ’69), who also assisted McLean, the highlight was reconnecting with a friend he hadn’t spoken to in nearly 40 years. As both classmates and roommates, Woods and John Hansen had been close during their student days. However, soon after graduation Hansen moved to Australia, and they lost touch.

“Was John ever surprised to hear from me after all those years,” says Woods of the call he made to Hansen. “It was exciting and interesting to talk with him. I must confess to feeling quite touched and a little emotional.”

Roger Busby (Chemical ’69) says he saw being a class organizer as a way to give back to the school that made such a big difference in his life. “The education we received opened up the world to us. My life changed because I achieved a degree,” says Busby, who spent 31 years working in Saudi Arabia before retiring in 2005 as the Assistant to the Vice President of Northern Area Oil Operations for Saudi Aramco.

Nickel says the time commitment of a class organizer varies, depending on the size of the class, the length of time since the classmates were last in contact, the number of additional class-specific gatherings they

wish to organize, and any other activities they’d like to take on (such as planning a class gift to the Faculty or leaving some other legacy). “Some class organizers start well in advance of their big anniversary—I’ve had some begin more than a year in advance—but most begin 9 to 12 months prior to Alumni Weekend,” says Nickel.

“It is a fairly easy assignment requiring only time, of which I have lots,” adds Resaul.

Nickel notes that although the Faculty’s first focus is on recruiting class coordinators for the biggest milestone classes (those celebrating 60th, 50th, or 25th reunions) and their second focus is on special anniversary classes (those whose anniversary year is evenly divisible by five), class organizers from all years are both welcome and encouraged. “We happily take volunteers from all classes, and will provide the same resources to them that we provide to other classes.”

Nickel says another option is for a class organizer to organize Alumni Weekend activities based on special interest groups. “It doesn’t always have to be a graduation class that gets together. We’d be happy to assist reunion organizers who wish to get specific groups of people together that span several graduation years, such as student clubs or student vehicle projects.”

“If someone is interested in being a class organizer, they simply need to get in touch with the Engineering External Relations staff member for their department, or they can call the External Relations office, and I can direct them to the right person,” says Nickel (both numbers can be found on the Engineering website). “Assuming no one else from their class has already volunteered, we’ll then send the organizer a confidentiality agreement to sign prior to sending them the contact information we have on file for their classmates. The organizer can then begin verifying the contact information, tracking down any class members whom the Faculty has lost contact with, and getting their classmates excited about coming together to celebrate the anniversary of their graduation,” says Nickel.

Publications Mail
Agreement No. 40051128

Return undeliverable
Canadian addresses to:
Faculty of Engineering,
University of Alberta
E6-050 Engineering Teaching
& Learning Complex
Edmonton, AB T6G 2V4

e-mail: peggy.hansen@ualberta.ca



University of Alberta ENGINEERING

The sky's the limit

A graduate degree from the U of A Faculty of Engineering is a catalyst for change, opening a new world of possibilities for you or your company. Our programs emphasize multi- and inter-disciplinary research and education, allowing students to gain a strong theoretical foundation while specializing in a range of fundamental and applied research projects.

With an international reputation for academic excellence and leading-edge research, the Faculty offers unlimited opportunities leading to Master of Engineering (MEng), Master of Science (MSc), and Doctor of Philosophy (PhD).

Expand your knowledge. Discover your full potential with the Faculty of Engineering.

For more information, visit www.engineering.ualberta.ca/gradprograms.cfm



Jaron Van Dijken is working towards his PhD in electrical engineering, specializing in nanosystems and microdevices, applying new discoveries to make solar energy more affordable and effective. The recipient of several prestigious national scholarships, Van Dijken plans on returning to the private sector armed with indispensable new knowledge and skills.



I wish to make a gift of:

\$100 \$500 \$1,000 \$2,500 Other \$ _____

Cheque (made payable to the University of Alberta) VISA MasterCard

_____/_____/_____/_____/_____/ expiry date: _____

Name (please print): _____

Signature: _____

I have also enclosed:

a corporate matching gift form from my (or my spouse's) employer

If you were an Alberta resident on December 31, 2009 and have already given \$200 elsewhere, your combined income tax savings will be:

Your donation to the U of A	\$100	\$500	\$1,000	\$2,500
Your tax credit for your gift:	\$50.00	\$250.00	\$500.00	\$1,250.00

* To best meet Faculty of Engineering's needs, donations may be directed to endowed funds. Donations made to endowment funds are invested in perpetuity and the investment earnings are used to advance the specified purposes of the fund within the University.

I would like my gift to support:

\$ _____ Areas of greatest need as determined by the Dean.

\$ _____ Biomedical Engineering

\$ _____ Chemical and Materials Engineering Fund*

\$ _____ Civil and Environmental Engineering Fund*

\$ _____ Electrical and Computer Engineering Fund*

\$ _____ Mechanical Engineering Learning Laboratory Fund*

\$ _____ Mining and Petroleum Engineering Fund*

\$ _____ Other

I would like information on how to make a gift of publicly traded securities to support the Faculty of Engineering at the U of A.

I would like information on how to include the Faculty of Engineering at the U of A as part of a will, life insurance, or other planned gift instrument.

I have provided for the Faculty of Engineering at the U of A in a will or trust agreement.

Please return to:

Office of the Dean, Faculty of Engineering
University of Alberta
E6-050 Engineering Teaching and Learning Complex
Edmonton, Alberta T6G 2V4

03110