

All-Female Bridge Building Team places First in Mid-West Competition

by Nancy Angus, Coordinator, Communications and Public Affairs

The Lakehead University civil engineering team took first place in the American Institute of Steel Construction/American Society for Civil Engineering Mid-West Regional Student Steel Bridge Competition at North Dakota State University, held March 1 to 2 in Fargo.

This year's team, the first all-women team from Lakehead and possibly in the history of the competition, is comprised of fourth-year civil engineering students Susanne Cousineau, Pamela De Paulo, Carla McGregor, and Lisa Pickering. Dr. Tony Gillies and Dr. Timo Tikka assisted as faculty advisors to the team.

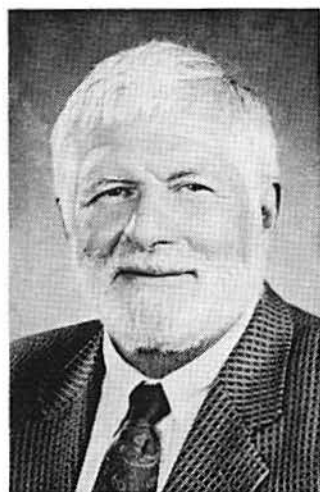
The Lakehead students came out winners in a tough competition, beating out seven other teams. It was reported in the *Fargo Forum* newspaper that Lakehead's boisterous cheering section waved a Canadian flag attached to a hockey stick after their bridge was assembled. Lakehead University has a proud tradition at this event as this is the fourth year in a row that the Lakehead civil engineering students have placed first at the mid-west regional level.

From here, the team is in training for the U.S. National Student Steel Bridge competition, which will be held at the University of Wisconsin - Madison from June 21 to 24. The Madison competition will be a memorable one as 2002 marks the 150th anniversary of the American Society for Civil Engineering.

The competition challenges civil engineering students to design, fabricate and construct a steel bridge based on a problem statement. Criteria for excellence are represented by the award categories of stiffness, lightness, construction speed,



aesthetics, efficiency and economy. Standards for strength, durability, constructability, usability, functionality and safety reflect the volumes of regulations that govern the design and construction of full-scale bridges.



by
Dr. Frederick F. Gilbert
President

From the President's Desk

During the week of March 18 candidates for the position of dean of the Northern Medical School will be on campus as part of their interview process. The three candidates, Dr. Carl Robbins, Dr. Sheila Harding and Dr. Roger Strasser will be on campus March 18, 19 and 20 respectively and a copy of the itinerary follows.

I hope that the University community comes out to assess the candidates and then provides input to the Lakehead University Review Committee who will be making recommendations to the joint Lakehead/Laurentian Dean's Search Committee. The Lakehead committee is chaired by Vice-President (Academic) and Provost Dr. M.L. Hill, and has as its members Ruth Baxter (Board of Governors), Dr. Michael Stones (Department of Psychology and Director of NECAH), Dr. Alastair Macdonald (Acting Dean of Science and Environmental Studies), Dr. Moira McPherson (Director of the School of Kinesiology), Dr. Lorne McDougall (Director of the School of Nursing), Dr. Kam Leung (Department of Biology), Teegan Trochimchuk (Student) and Bev Bicknell (Secretary to the Committee). It is expected that selection of the dean will be finalized in early April.

The Implementation Management Committee (IMC) for the Northern Medical School has added Dr. Arnie Aberman as a member as consulting dean. Dr. Aberman

addressed Senate at its February meeting and talked about the accreditation process. The IMC has drafted a governance model that includes Lakehead and Laurentian as equal partners but the model and the business plan under development have yet to be approved by the provincial government. Nonetheless, it appears that the medical school is tracking in a manner that will have a full four-year undergraduate commitment at Lakehead.

Dr. Buell, vice-president (research and development), is on extended sick leave and his responsibilities have been transferred to me for the most part. The Offices of Research and Development are helping to shoulder the work load but both will be reporting directly to me for the time being.

The latest information from OUAC shows that high school first choice applicants to Lakehead are up 27.1% compared to the provincial average of 15.8%. The academic units are working hard to contact these students and invite them to follow through on their interest in Lakehead.

Itinerary

7:30 a.m. - 8:30 a.m.	Breakfast at Valhalla Inn
9:00 a.m. - 10:00 a.m.	Public Presentation: <i>Vision for the Northern Medical School</i> University Community and interested groups Senate Chambers
10:15 a.m. - 11:15 a.m.	Meeting with Review Committee in the Vice-Presidents' Conference Room
11:15 a.m. - 11:45 a.m.	Meeting with Dr. Gilbert at President's office
12:00 p.m. - 1:15 p.m.	Lunch hosted by NOMP at Health Sciences North
1:30 p.m. - 2:45 p.m.	Tour of new hospital and meetings
3:00 p.m. - 4:15 p.m.	Tour of Northwestern Ontario Regional Cancer Centre and meetings
4:30 p.m. - 6:00 p.m.	Candidate's option
6:00 p.m. - 7:30 p.m.	Dinner with representatives of the University

Candidates will visit Sioux Lookout the following day.

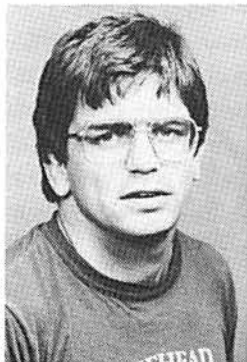
Coaches' Corner

by Francis Clayton

Coach of Men's and Women's Wrestling Teams



It was a very successful year for the wrestling program, which finished with the Canadian Interuniversity Sports (CIS) Championships held in the C.J. Sanders Fieldhouse on March 1 to 2. With both the men's and women's team comprised of mainly first- and second-year students, this season was viewed upon as a rebuilding year. If this is the case, the future looks bright!



Thirteen of a possible 17 qualified for the Nationals (nine men and four women) and all of these 13 improved upon the pre-tournament rankings, moving up at least one position. As a team, the men placed in the silver medal position only one point behind Brock University and two points ahead of the University of Guelph. On the women's side, Lakehead's team placed fourth, improving on their position last season of 13th. Individually, they all were superb, wrestling to their personal best every time out.

Throughout the championships, Lakehead wrestlers were showing people what they are about. In a first round match, Brent Fryia upset defending champion Kyle Sweezey from Brock via a fall, while Alex Jeffery easily handled his opponent, the current Canada West Champion, also with a fall. These matches set the stage for many strong matches to come, with a highlight being the final in a match in which we lost.

Four Lakehead wrestlers made it to the gold medal matches, with the first setting the tone. At 68 kilograms, Brock Curtis was taking on defending champ and last season's Most Valuable Player Ryan Wieker from Brock. Their match at the OUA's ended up in a 10-0 technical superiority by Wieker over Curtis. At the start of this one, it seemed to be going in that same direction with the score 7-0. Brock kept to his game plan and a steady pace, and finally put some points at the end of the first round. With it 11-4 and three minutes to go against the defending national champion, it had to be an all out effort if Brock was to challenge for the win. Brock's efforts brought him to 11-9 with a chance to score and tied it at the end, only to run out of time. And, that in the end is what happened to our Lakehead wrestling teams. We didn't lose, we just ran out of time.

It was a tremendous effort by a group of exceptional people working at achieving their best performance, and that is what this season was about. Watch out next year!

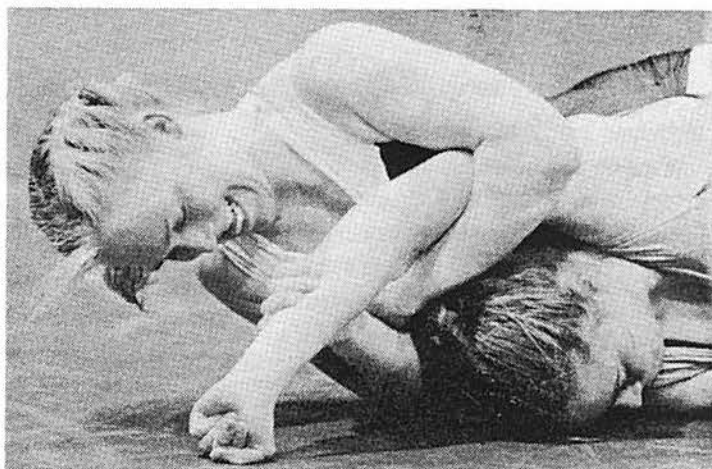


Photo: Dave Harvey

"Individually, they all were superb, wrestling to their personal best every time out."

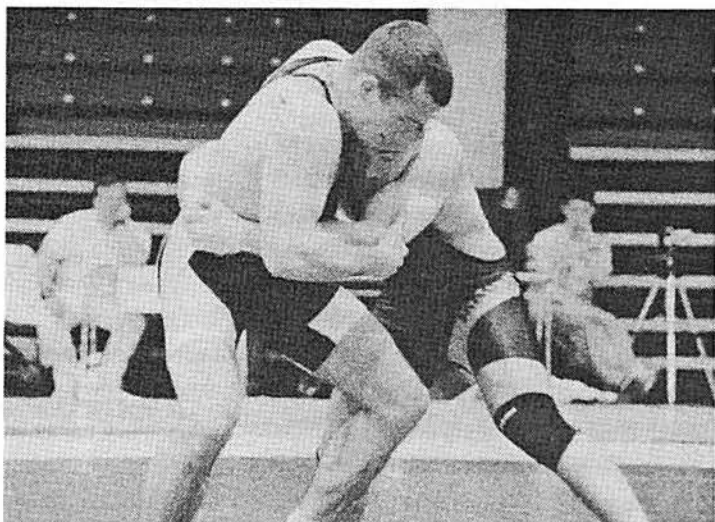


Photo: Rob Linke

Highlights of the Year

OUA

Individual champions: Katie Patroch at 61; Steve Raine at 76; Devin Kirk at 82

MVP and OUA player of the week: Steve Raine

Finalists winning silver: Brock Curtis at 68; Brent Fryia at 65; Alex Jeffery at 61

Bronze Winners: Trevor Manchester at 72; Matt Lawrence at 54; Nick Zuback at 57; Jake Gallinger at 90

CIS

Individual Gold: Trish Lebel at 77; Devin Kirk at 82

Silver: Brock Curtis at 68; Steve Rain at 76

Bronze: Katie Patroch at 61; Brent Fryia at 65

Other

CIS Fair Play Award: Brock Curtis

CIS Men's Coach of the Year: Francis Clayton



Dramatically Wonderful

La Troupe des Etudiants Extraordinaires

by Marie-Noëlle Rinne

In the spring of 1999, a group of third-year students approached Professor Alain Nabarra, chair of the Department of Languages, to discuss which course would best suit their needs. Most of them were about to enter their last year of studies at the Faculty of Education and wished to continue to learn and practice their French, a language they were preparing themselves to teach.

The Department was pleased to have student input in the matter, and in an effort to accommodate their needs, proposed, after much research and discussion, *French 3811 Oral Expression through Drama*.

This course would allow students to feel more at ease in their use of French. Having been approved by the Senate, it was offered for the first time in September 2000.

Using dramatization and group dynamics, the course was designed to improve oral communication skills (fluency, enunciation, rhythm of speech), and creative expression and self-confidence in the use of the target language.

Our first class was small, but the students eager. During the first half of

the course, they worked on their diction, reciting poetry and stumbling through tongue-twisters. They worked on skits, taking turns acting and directing. Most skits were improvised and many French language skills had to be summoned in order to achieve a coherent, and often hilarious, performance.

In January came the task to choose a play that was to be presented by the end of the academic year. We settled on Eugene Ionesco's *"Exercices de conversation et de diction pour étudiants américains."* Ionesco had written this nonsensical play about the meanders of life and language as a possible textbook for American students of French. It seemed to be appropriate for our first performance. Thus began eight weeks of rehearsal and language acquisition. The hard work paid off in many ways and there was a noticeable improvement in French diction.

The "final exam" was not to be spent facing a blank, but indifferent, page, or a teacher too often immune to language violations. The public was to be the arbiter. Among the French-speaking audience, some came from France, some were Franco-Ontarians, most were

accustomed to linguistic quality. It was imperative for the actors to strive for such quality, as the essence of the play, with its many nuances of language, its puns and comments, simply had to be conveyed.

As the students worked on Ionesco's work, focusing on stage directions and memorizing lines, their syntactic and grammatical performance improved steadily during the many and lively spontaneous exchanges that took place in class. Klassen, the author of the Monitor theory, would have explained the phenomenon by suggesting that their "monitor," that little voice that prevents many students from speaking a foreign language for fear of making mistakes, was silenced. They were relaxed, attentive to a different form of language production and, naturally, they acquired higher skills in French.

As far as the audience was concerned, we believe it was an enjoyable experience. First-year students who attended were able to witness work done by graduating students, something that the Department would like to encourage. Faculty members obtained further proof that drama is indeed a very efficient teaching tool in the context of language learning.

All in all, we feel that *Oral Expression through Drama*, was a successful first attempt. How does one define success when it comes to teaching, learning and implementing new courses? We could have attempted to "measure" oral and grammatical improvements, but let's simply say that we all enjoyed it.

Marie-Noëlle Rinne is a lecturer in the Department of Languages. She says French 3811 will be offered again in the fall of 2002.



Chair in Finnish Studies

Dr. Lassi Heininen is enjoying his work as Lakehead's Chair in Finnish Studies. "This position is more than just teaching and researching," he says, "It's about meeting people and having access to see another kind of community."

Heininen is a political scientist from the University of Lapland in northern Finland. He is spending the winter term of 2002 at Lakehead and is leaving in April. Throughout his stay, he has been associated with the Department of Sociology where he is teaching the course, *Sociology of the North*, and is working on his current research topic of northern issues and regional studies. He is also doing research in security issues, European studies, Russian studies and environmental studies.

The Chair in Finnish Studies at Lakehead University differs from traditional academic chairs which are occupied by one individual for long periods of time. This position is occupied by different professors from different academic disciplines. Dr. Heininen is Lakehead's third Chair of Finnish Studies, following Dr. Kari Hakapää, (Department of Political Science) who held the position in 1998, and Dr. Tatu Leinonen (Department of Mechanical Engineering) in 2000.

"I find the Finnish Studies Chair is an interesting and challenging position," says Heininen. "I am pleased to have had the opportunity to come here for this term to teach and research, as well as meet people and community groups in Thunder Bay."

-- Marla Tomlinson

Scholarship and Bursary Recipients say 'Thanks'



Two award recipients expressed their appreciation "face-to-face" at the annual Donor Reception held on February 12 at the Northwestern Ontario Technology Centre. Chris Miller (left), recipient of a 2001/02 President's Award, told donors their generosity allowed him to "focus on academics" while at University. Leigh Anne Watterworth (right), a master's student in biology, described the excitement she felt about being part of an expanding microbiology research team at Lakehead. Watterworth is the recipient of the George Ozburn Bursary in Biology. Later she posed for a photograph with the man who established the bursary -- Professor Emeritus George Ozburn.

Residence Phones

Representatives from Nortel Networks and Bell Canada were back on campus on February 12 to meet with Residence students to answer questions concerning the ongoing problems they have had with the Internet Protocol (IP) phones that were installed last summer.

In November, Lakehead students were promised that the telephone system would be stable by the beginning of January and if not, a new switching system would be installed.

That is, in fact, what is happening. Nortel is currently installing "Option 81" a more "robust" system that is expected to be operational by the end of March. In the meantime, says CTRC Director Bob Angell, Lakehead will continue to deploy the new IP phone system across campus, as planned, with the offices in Residence, the Avila Centre, and the Centennial Building being next on the list.

"The truth is, it's been a very disruptive installation for Residence students," says Executive Director of University Services, Grant Walsh. "We didn't anticipate these problems, nor have we been able to resolve them to our satisfaction."

Nevertheless, both he and Bob Angell are optimistic the situation will be resolved. In the meantime, Lakehead continues to work with its partners and with the students to make the best of the situation: the students' telecommunications charges (approximately \$25 per month) have been refunded; their questions and concerns are being fielded by staff working around the clock in Rez Net, and a student subcommittee (led by incoming LUSU Vice-President of Student Issues Billi-Jo Cox) is working with a representative from Bell Canada to revise the training manual that will be used by the students next fall.

In Search of an 'Intelligent' Robotic System

Dr. Abdelhamid Tayebi has secured more than half-a-million dollars in research funding that will go towards equipping a new Automatic Control Laboratory to be housed in the Advanced Technology and Academic Centre (ATAC)

by Daniel Hansen

When Dr. Abdelhamid Tayebi drives to Lakehead University in the morning, he's thinking about control. As an assistant professor in Lakehead University's Department of Electrical Engineering, control means something a little different to Tayebi than to the general population. Control in electrical engineering terms is the device which manages a system. Your brain, for example, is the control for the system of your body. "When you drive to work in the morning," Tayebi says, "your brain is a control mechanism, responding to input from your eyes, and then making your hands and feet respond accordingly."

Educated in Algeria and France, Tayebi came to Lakehead University in 1999 where he felt he would have the freedom and flexibility to start and direct research in control theory with applications to robotic systems. "I've always been fascinated by robots, ever since I was very young," Tayebi admits. Now, Tayebi develops control algorithms that would be used in industrial robotic applications. "The use of robotic systems performing certain production tasks such as material handling, spot welding, spray painting and assembling is taking a significant place in manufacturing industries and the design of efficient robots is still a challenging problem."

Tayebi's main areas of research are in nonlinear control theory, adaptive control, robust control, and iterative learning control – a relatively recent development in a more than 100-year-long history of control theories.



"Iterative learning control (ILC) is a relatively new addition to the control engineer's tool kit when it comes to dealing with the tracking problem for a control system that operates repeatedly," says Tayebi. "It is designed in such a way to be able to learn from the tracking errors at the previous operations in order to perform progressively better with every new operation to achieve 'almost perfect' tracking as the number of operations increase."

"ILC allows robotic systems to be more 'intelligent'; in the sense that robots can learn from their mistakes to avoid them and perform better in the future. For instance, a robot operating repeatedly under the same control input will produce the same tracking error over and over again. The main idea behind

ILC techniques is to take advantage of the previous operations in order to adjust the control input to be applied to the system in the upcoming operations. In fact, the longer the robot performs the task, the smaller the margin of error will be."

So far, Tayebi has only designed and tested ILC algorithms in simulation, but not in real-time. That will change thanks to his recent award from the Canadian Foundation for Innovation (CFI), which in turn has been matched by the Ontario Innovation Trust (OIT) and generously supplemented by other corporate partners for a total exceeding \$500,000. This money will go toward equipping the Automatic Control Laboratory, which is to be located in the new Advanced Technology and Academic Centre (ATAC), currently under construction. The Automatic Control Laboratory will have "a very significant impact on the research capabilities at Lakehead University and training of highly qualified professionals in control engineering," Tayebi says, and will "lead to innovative industrial technologies in Canada. The publication of research and results will be very beneficial to the University."

An interesting example of the potential value of modern control techniques exists in the hydroelectric industry. Pointing to an outlet on the wall, Tayebi explains that even though that outlet is supposed to supply 110 volts (V), if you were to actually measure the voltage it would rarely be exactly 110V. It would more often hover around this value. If the hydroelectric industry were to adopt

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Q&A

with

Syd Halter,
Honorary Chair of
Advanced Technology &
Academic Centre (ATAC)
Capital Campaign



Syd Halter is a consulting engineer who, before entering private practice in 1989, was the president and chief engineer of C.D. Howe Central Ltd. and senior vice president and director of the Howe Group of Companies including its overseas branches. Syd was recently appointed the honorary chair of the Advanced Technology and Academic Centre (ATAC) Capital Campaign. Jennifer Willanen, development researcher and writer, caught up with Syd and posed a few questions on his involvement with Lakehead University.

Q. What have been some highlights of your long-standing record of volunteer involvement with Lakehead University?

A. The time I spent as chair of the Board of Governors from 1984 to 1986 was certainly a memorable experience. The University was growing and we were in the midst of hiring a new president. My greatest individual highlight occurred when I was named Fellow of the University only one year after I finished my term with the Board. I was surprised and honored at the time and I remain proud to this day to place LUF after my name.

Q. Why is it important for you to volunteer your time for Lakehead University?

A. Well it seems as though I have been raising funds for the University forever! In fact, my first involvement with Lakehead began in the late sixties when I was the chair of a volunteer group of engineers raising money for the engineering program. Personally, it is gratifying to be associated with Lakehead University and its faculty, staff and students.

Q. As honorary chair of the Advanced Technology and Academic Centre fundraising campaign, how do you see your role in this campaign?

A. I hope to be a catalyst for the other volunteers. We have a great team assembled who give generously of their time to Lakehead. My role is to encourage their involvement and to lead the group towards achieving our goal.

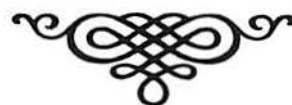
Q. How will ATAC benefit Lakehead University students?

A. I think it is important to stress that ATAC will be a benefit to students in all faculties in addition to those enrolled in engineering and computer science. The smart classrooms will be open to the general classroom scheduling pool and will allow for more opportunities to make connections with guest experts through videoconferencing. ATAC will also provide Lakehead students with more access to computer labs outfitted with the latest state-of-the-art technology equivalent to, if not better than, any university in Canada.

Q. What is your personal vision for Lakehead University as it relates to the ATAC project?

A. Lakehead University is an important part of the business community in Thunder Bay and it has a huge economic impact on the region, amounting to over \$170 million yearly. ATAC will allow Lakehead University to do an even better job of providing more

higher education opportunities to our community and surrounding areas. I believe ATAC will draw more students and faculty from other centres to our region where they will study, live and make contributions to our great community. It is also my hope that ATAC will stimulate the growth of high-tech start-up companies in the region and that these companies will provide benefits to Lakehead University in terms of graduate employment opportunities.



In Search of an 'Intelligent' Robotic System
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more sophisticated control techniques in its systems, the voltage output at the outlet would be much closer to 110V all of the time. This increased efficiency would save both the industry and its consumers a great deal of money in the long term. The significance of modern control techniques is clearly enormous, both for industry and military/space systems, especially where safety is of prime concern. Unfortunately, much of the manufacturing industry is still using classical control techniques from as far back as the 1940s, which the industries see as being 'good enough' for the intended task. Tayebi hopes the research coming out of the Automatic Control Laboratory and the ATAC will convince industries still using classical control techniques of the benefits of modern control theory, as well as continue to establish Lakehead as leader in technological research and innovation.

Daniel Hansen is one of several students taking part in SPARK, a student writing program sponsored by The Chronicle-Journal.

New Faculty Profiles

The third in a series of articles introducing Lakehead's newest faculty members

by Marla Tomlinson

Kevin Ride

Lecturer, Faculty of Forestry and the Forest Environment

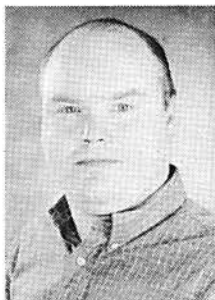
Courses: Forest Harvesting; Forest Regulation and Scheduling; Forest Management I & II; Landscape Ecology and Modelling

Background:

HBScF from Lakehead University and a MScF from Lakehead University

Why Lakehead? "I've been here for a while now as a sessional lecturer and have recently worked for both the forest industry and government. I find great enjoyment in developing and delivering courses as well as working on various collaborative projects with my contacts in industry and government.

Teaching/Research Goals: "My main goal is to bring knowledge of contemporary forestry practices and concepts to my students. I teach third-year and fourth-year classes and, as such, I have a last opportunity to ensure that all of my students have the knowledge and tools necessary for their future careers. I try to bring concepts from across the curriculum into Forest Management I & II and demonstrate their interconnectedness and application in forest management. I am currently pursuing a PhD opportunity at the University of Guelph on the topic of ecosystem responses to intensive forest management practices. I am most interested in the areas of forest management including intensive forest management, ecosystem management and landscape ecology and modeling."



Professor Karen Maddox

Assistant Professor, School of Nursing

Courses: Caring Across the Lifespan; Life-span Wellness Assessment; also provides clinical supervision to students

Background: BSc in Nursing from the University of Alberta, MA in Nursing from the College of Saint Scholastica in Minnesota

Why Lakehead? "I've taught at Lakehead before in the 1980s as a lecturer. When an opportunity became available, I thought it would be an exciting challenge to come back to the new program."

Teaching/Research Goals: "I am working on a research project with colleagues from The University of Western Ontario in the area of out-patient mental health. I'm also interested in women's health and gerontological nursing with a focus on helping people to maintain wellness in older adulthood."



Dr. Xiaoping Liu

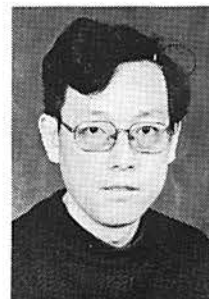
Associate Professor, Electrical Engineering

Background: Bachelor of Engineering, Master of Engineering and PhD from Northeastern University, China

Courses: Electric Control Devices and Applications; Linear Control Theory; Electric Machines; Electronics II; Degree Projects

Why Lakehead: "I taught previously at Northeastern University in China. I like teaching and doing research very much. I came here because Lakehead is the first Canadian university which offered me both opportunities. Lakehead provides an excellent research environment."

Teaching/Research Goals: "My goal for teaching is to let students master more of the discipline while developing skills to analyse and solve the real problems. My research goal is to develop some novel control methods and to solve some benchmark problems in control engineering."



Dr. Wa Gao

Assistant Professor, Civil Engineering

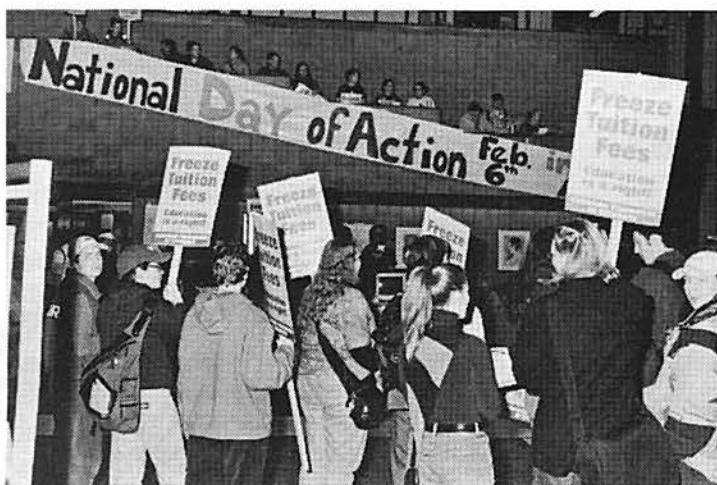
Courses: Environmental Control; Statics; Water Supply and Waste System; Solid Waste Management

Background: PhD in Environmental Engineering from the University of Alberta

Why Lakehead: "The opportunities were offered at Lakehead to carry out interdisciplinary research work."

Teaching/Research Goals: "My goals are to continue research work related to water/waste water treatment and cold regions environmental engineering."





Day of Action

Lakehead students joined thousands of other students across the country on February 6, 2002, for the Canadian Federation of Students' annual day of action to protest rising tuition fees. After a rally held in the Agora, about 25 Lakehead students occupied a portion of Dean's Row for close to 20 hours, leaving after President Fred Gilbert agreed to co-sign a letter with LUSU President Jeremy Salter to Dianne Cunningham, Minister of Training, Colleges and Universities, supporting a fully-funded tuition freeze. Organizers say tuition fee levels have jumped an average of 126 percent over the past decade, putting higher education out of reach for many students from low- and middle-income families.

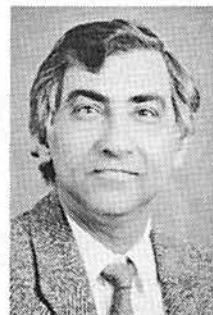
In their letter to the Minister, Salter and Gilbert stated: "... Ontario students receive the lowest amount of government funding per student per capita in Canada and the situation is especially critical at Lakehead University where we deal with a significant under funding of our Basic Income Units (BIUs) and where tuition fees currently constitute 40% of the revenue base. A fully funded tuition freeze would be an important first step in addressing these issues."

Inderjit Nirdosh awarded Strategic Project Research Grant

Dr. Inderjit Nirdosh, professor of chemical engineering, has been awarded a Strategic Project Research grant by NSERC. His award is for \$145,000 for two years with \$100,000 in-kind support from five major Canadian mineral processing industries: Noranda, Cominco, INCO, TECK Corporation and Imperial Metals. The research work will be on synthesis and testing of new mineral collectors for utilization of vast Canadian resources of low-grade ores. This is Nirdosh's third strategic grant. In 1985, he was responsible for winning the very first NSERC strategic grant award for Lakehead University.

S. Ali Mirza Honored

A Lakehead University civil engineering professor has been honoured for his achievements in engineering. Dr. S. Ali Mirza has been elected a Fellow of the Engineering Institute of Canada (EIC). He was recognized at the EIC's annual awards banquet in Ottawa on Saturday, March 2, 2002.



Receiving this honour is rare, as each year only 20 of among approximately 35,000 EIC members are elected to the grade of Fellow with the EIC.

Becoming a Fellow with EIC recognizes the individual's excellence in the practice of engineering and service to the profession and to society.

"One does not expect this kind of honour, but it is nice to be recognized for one's work," Mirza says of the fellowship.

Mirza is a fellow of the American Concrete Institute (ACI), the American Society of Civil Engineers (ASCE), the Canadian Society for Civil Engineering (CSCE), and the International Association for Bridge and Structural Engineering (IABSE), and is recipient of the ACI's Raymond C. Reese Structural Research Award.

During his career, he has authored and co-authored more than 110 research publications and four design handbooks, and he has held a NSERC research grant since 1982. He has served the structural engineering profession through his committee work for the ACI, the ASCE, and the CSCE. He has acted as reviewer for the Natural Sciences and Engineering Research Council of Canada, the U.S. National Science Foundation, the ACI Structural Journal, the ASCE Journal of Structural Engineering, the Canadian Journal of Civil Engineering, and the International Journal of Computers and Structures. He has served on editorial boards of several conferences and is a past chair of the Joint ACI-ASCE Committee on Reinforced Concrete Columns.

The safety clauses in the Canadian Code for the Design of Concrete Structures are based on Dr. Mirza's research. A similar criterion included in an appendix of the ACI Building Code makes use of his work in this area. He is a co-inventor of the patented Confined Capping System for compressive strength testing of high strength, high performance concrete and, also, has used the results of his research on inverted T-girders to develop methods that are now widely in use in North America for structural design of bridges and parkades utilizing such girders. -- Marla Tomlinson

Dr. Laurie Garred receives Distinguished Researcher Award

by Daniel Hansen

When Dr. Laurie Garred learned that he had been awarded the 2001/2002 Lakehead University Distinguished Researcher Award, he was, in his words, "surprised." However, when one looks at his contributions to his field of study and to Lakehead University over the past 26 years, it immediately becomes apparent how modest Garred really is: 24 years of NSERC funding, 79 government and institutional research grants, and several corporate grants and contracts totalling more than \$600,000; over 130 research publications and conference papers; and invited research presentations in eight countries on three continents.

But perhaps even more important than the quantity of valuable research Garred has produced, is the quality and impact of his research.

A professor of chemical engineering at Lakehead

University since 1975, Garred's research for the past 20 years has almost exclusively dealt with the application of chemical engineering concepts to optimize dialysis treatments received by kidney failure patients. When someone's kidneys fail, dialysis machines can do the work of the kidneys; however, the dialysis process can be very long and very demanding on the patient. Where kidneys filter the body's liquids continuously, kidney failure patients must store their excess water and wastes, such as urea and creatinine. These fluids and wastes must be drained and filtered by a dialysis machine usually three times a week. Often lasting four or more hours, a single dialysis session may see a patient being drained of as



Chemical engineering students Marianne Ariganello (left) and Adrienne Law (right) are working on Bachelor of Engineering projects with Dr. Laurie Garred (centre). Their research involves the use of hemodialysis machines like the one pictured above which was donated to Lakehead University by Gambro, a multinational manufacturer of dialysis equipment.

much as six kilograms or more of retained fluid. If proper precautions are not taken, the patient can have what is called a hypotensive episode, marked by nausea, dizziness, and a sudden drop in blood pressure. The ultimate aim of Garred's research is to optimize this treatment process so as to make it as comfortable as possible for the patient, as well as make it as efficient as possible. The process currently requires a good deal of time and money, and with the number of patients needing dialysis treatment growing about 8 to 10 percent every year, the load on the health care system will only increase. More efficient treatment will translate into less in-hospital and treatment time for the patient and less load for the hospitals.

To help him reach this goal, Garred has fully employed Emmanuel Merlière, a recent Lakehead University chemical

engineering graduate. As well, Garred also enlists senior chemical engineering students as research assistants. These assistants are engaged in research work that is going toward developing mathematical models for studying the effectiveness of dialysis treatments. One student, Adrienne Law, worked over the past summer at the McKellar site of the Thunder Bay Regional Hospital gathering data from 44 hemodialysis sessions with 14 patients. Garred expects to present the results of this study to Canadian nephrologists (kidney specialists) at a Toronto symposium in April as well as at the annual conference of the European Dialysis and Transplant

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Association annual meeting to be held this July in Copenhagen, Denmark.

When Garred began doctoral studies at the University of Minnesota in 1967, he assumed his research would remain purely theoretical. However, the influence of an eminent biomedical engineer altered this thinking. "I don't think I'd have been as happy doing strictly mathematical or theoretical research," Garred says. "I also enjoy work in a more clinical setting because I can see its direct impact on individuals".

Always moving forward, Garred will be taking a six-month sabbatical in Italy, where he will work with researchers at the University of Bologna's Department of Biomedical Engineering, with nephrologists at the University hospital, and with the research and development group of a nearby multinational dialysis company. It will come as no surprise to us if we hear more from this most distinguished researcher in the future.

Daniel Hansen is one of several Lakehead students taking part in SPARK -- a student writing program sponsored by The Chronicle-Journal.

Lakehead signs Agreement with IBM

Lakehead signed a Memorandum of Understanding with IBM Canada Ltd. on February 28 that will benefit undergraduate and graduate students, faculty engaged in research and the teaching and learning process at Lakehead University.

"This agreement marks an important step forward in our relationship with IBM," said President Fred Gilbert. "Following on our initial involvement during the Provincial Government's

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Juried Student Exhibition



James Woodbeck (centre) picked up four awards from the Lakehead University Student Juried Exhibition including the Mr. and Mrs. James MacCallum Munro Memorial Prize in Visual Arts and the Dean's Award for Ceramics. Julie Cosgrove (left) won the President's Award as well as the Dean's Award in Painting. With the students is Ceramics Instructor Sarah Link (right).

It was standing room only during the awards presentation for the Annual Student Juried Exhibition on Friday March 8 at the Thunder Bay Art Gallery. This year's exhibition, sponsored by Philpot & Delgaty Insurance (for the eight consecutive year), featured 150 artworks by 66 students from all year levels. During the reception, more than \$5,000 in cash, prizes and gift certificates were given out.

According to Visual Arts Professor Roly Martin (and this year's exhibition coordinator), the Student Exhibition serves two functions: it's a way for the faculty to celebrate what the students do, and it gives the students the opportunity of seeing their work in a gallery setting as opposed to a studio setting. "The jurors all come from outside of the university community," he says. "It's a way of involving, and to some extent educating, the community in the activities of the Department."

Five Lakehead University Dean's Awards were presented: Painting: Julie Cosgrove; Printmaking: Dave Mancuso; Ceramics: James Woodbeck; Drawing: Lana McGregor; Sculpture: Cara Colburn Whiting.

The LUSU Purchase Prize went to Lauren Rigato; the Lakehead University Alumni Purchase Prize went to Joe Mikulinski; The Northwestern Ontario Regional Cancer Centre Purchase Prize combined with the William Trainor Memorial Award went to Leslie Shaw; and a new award this year, The Gilbert Award, went to Chris Bobinski.

Cast your vote for the People's Choice Award by visiting the Thunder Bay Art Gallery before the Student Exhibition closes on March 31st.

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Access to Opportunities Program (ATOP) initiative, this agreement will allow the University to advance its hardware and software capacities with a world leader in technology. While the Advanced Technology and Academic Centre (ATAC) building will be the focus of our enhanced technology relationship, there will be positive impact across the entire campus."

IBM is providing its NetVista desktops, IntelliStation workstations and e-server XSeries servers, WebSphere, MQ Series and DB2 software, IBM Learning Services Curriculum, faculty training and technical support. In addition, IBM is contributing about \$100,000 to the University's Advanced Technology and Academic Centre. Lakehead is providing skills initiatives, research collaboration, development cooperation and a reference site.

"IBM is proud to supply its industry leading hardware and software solutions to Lakehead University's new and exciting Advanced Technology and Academic Centre," said Ed Kilroy, President, IBM Canada. "IBM is committed to developing a technologically-advanced, highly-educated and competitive professional workforce by providing our expertise and product offerings to post-secondary educational institutions, and by developing unique, powerful and mutually beneficial relationships like this one with Lakehead University."

This agreement also offers a possible opportunity for Lakehead to become an IBM Scholar's Program Partner. IBM would provide Lakehead students and faculty with a wide range of software applications and training for studies and applied research. As well, Lakehead is considering the possibility of the University's Advanced Technology and Academic Centre being used to promote and offer IBM PC Institute Training to IBM Business Partners and customers.

-- Nancy Angus

Call for Nominations Distinguished Instructor Award

Deadline: May 30th

Nominations for the Distinguished Instructor Award must be submitted to the Chair, Senate Committee on Teaching and Learning, c/o Janice Pellizzari, Office of the Vice-President (Academic) and Provost by May 30, 2002. For more information about supporting documentation, criteria, and eligibility, visit the University Secretariat's Web page:

<http://www.lakeheadu.ca/~lusec/policies/aw-dia.htm>

Congratulations to the newly-elected LUSU Executive for 2002/03

President:

Glendon Tremblay

Vice-President Finance:

Dan Mackie

Vice-President Student Issues:

Billi-Jo Cox

AGORA Publication Schedule

2002

Issue	Deadline
May/June	May 6
Sept./Oct.	Sept. 9
November/December	Nov. 4

Lakehead

UNIVERSITY

March/April 2002 Vol. 19, No.2

THUNDER BAY, ONTARIO, CANADA

ISSN 0828-5225

The Agora is published by the Office of Communications. We welcome news and other submissions from our readers. Send them to:

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Office of Communications

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Thunder Bay, Ontario Canada

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Publications Mail

Agreement Number 40062450

Photography: Peter Puna

Printing: Lakehead Print Shop

**Deadline for submissions for the
next issue is**

May 6, 2002