

Master in Manufacturing Management



McGill University, Faculties of Engineering & Management

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Editor: Myrosia Cap, M.P.A.
mmm.mecheng@mcgill.ca

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INTRODUCING THE CLASS OF 2005

JAHIR AMEZCUA
B.Eng. Industrial
ITESM, Mexico

Jahir is highly interested in all aspects of project management and evaluation, with special emphasis on the supply chain. He started his career as Reengineering Project Assistant at DTM Plastics in Guadalajara. As part of a team that redesigned the process of injection molding and printing, he designed a new plant layout using AutoCAD and redesigned the production line and

storage area. In 2000, he also did a brief stint at Advantech in Montreal, where he provided assistance to the quality assurance department and, by extension, to the manufacturing department by increasing product quality. After returning to Mexico, Jahir was hired by UPS in Monterrey as Industrial Engineering Supervisor. Within only three months, he went from supervising two to seven centers of operation. He was the principal coordinator of a US\$5.2 million project to build a world class operations center. It was so successful that he received special acknowledgment from the Director of the UPS Americas region. In addition to implementing new operations procedures, forecasting pick-up and delivery volumes, planning and monitoring productivity, Jahir developed a Master Operating Plan for special situations, such as holidays, or an extraordinary event like 9/11.

As a result of his efforts at UPS, Jahir was invited to speak on "International Trade and Logistics" at the V International Business Symposium held at ITESM last year. He enjoys many hobbies and sports, including soccer, squash, photography, water sports and motorcycle racing. He is classified among the best regional squash players and he was state motocross champion at the age of thirteen. Being environmentally conscious, Jahir has performed volunteer work with the Marine Turtles Preservation program because they are an endangered species on Mexican beaches. His job was to survey both their daytime and nighttime egg nesting activities.

FAHAD ANWAR
B.Eng. Chemical
McGill University

While working towards his undergraduate degree at McGill, Fahad completed a couple of internships at Shell Oil and at Imperial Chemical Industries. He was a member of both the squash and fencing clubs as well as captain of intramural soccer at the McGill Undergraduate Society. He also started up and successfully ran a four-person web development company. Upon graduation he worked as manufacturing engineer at Celestica's Cisco

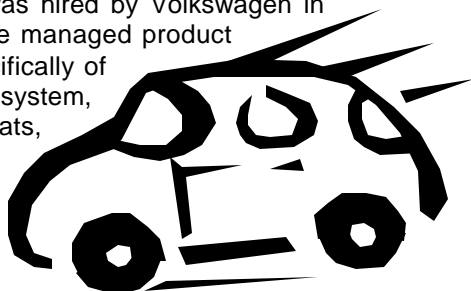
Systems Business Unit in Toronto. He managed the production of over 23 different types of gigabit switch routers. His responsibilities included capacity planning and analysis, shop floor layout, implementing cost-effective processes, training manufacturing personnel, supervising NPI, developing tooling and ergonomic equipment design, and creating online manuals and documentation. He participated in defining corporate strategic direction as part of a special-projects team that leveraged company wide resources to design and execute quality improvement strategies. He liaised with sites in Italy, Thailand and Israel for product, process and technology transfers. He also found time to volunteer for the annual United Way fundraising event at Celestica.

Fahad then returned to Pakistan, to a job as Demand Planner at Unilever. He was member of a six-person development team mandated with directing the company towards a "world class supply chain" rating by conceptualizing and implementing global best practices in SCM. He engineered a demand planning process, prepared sales forecasts, analyzed gaps between demand plans and sales targets, and calculated key performance indicators. He was also a dedicated resource for implementing SAP Advanced Planner and Optimizer at Unilever and he edited the Supply Chain Newsletter for the company. In addition, Fahad was actively involved in establishing a fund to raise money for impoverished households at Unilever. He assisted on the Light Up the World project in Pakistan with the aim of enhancing the quality of life in rural areas by providing low energy, affordable home lighting. Fahad enjoys traveling and getting together with his friends. While still in high school, he was voted Mr. Congeniality. He would very much enjoy working in the SCM department of a multinational and implementing best practices on a global scale.

BO ROBERT CHEN

M.Eng. Automotive
Wuhan Automotive Polytechnic University
B.Eng. Automotive
Wuhan Institute of Technology, China

Bo loves the automotive industry. He was an outstanding student who received numerous scholarships and awards throughout his university studies. After obtaining both a Bachelor and a Master in Automotive Engineering, he was hired by Volkswagen in Shanghai. Here he managed product development specifically of the car security system, focusing on seats, safety belts and airbags. He represented the company on technical issues



and evaluated products from numerous suppliers, notably TRW, Magna and Johnson Controls. He coordinated the functions of the product engineering and manufacturing departments and provided technical support to various areas of logistics. He also assisted the after-sales service department in order to develop customer relationships. During his four years at Volkswagen, Bo was involved in three major projects for specific models. He established the security system module and incorporated it into the body of the Polo car. He developed the front seat side airbag and the safety belt warning system for the Passat, and identified qualified suppliers in terms of capability and time management. In the Santana, he designed the steering wheel airbag as well as the height adjustment mechanism for the safety belt and supervised suppliers on quality control.

Bo has volunteered for Project Hope, which assists underprivileged children in obtaining an education. He was personally responsible for two such children until they graduated from elementary school. He also helped out at the International Auto Parts Exhibition in Wuhan. While at Wuhan Automotive, he was VP external of the student council. Bo enjoys various sports, notably basketball, soccer, table tennis and badminton. He likes going to the movies, music and both traditional and disco dancing. He would very much like to work in the automotive industry, in any of the following areas: quality control, operations, logistics, supply chain, project or process management.

KARLA DIBARTOLO

B.A.Sc. Chemical Engineering
B.Sc. Computer Technology/Coop Education
University of Ottawa

During her undergraduate studies, Karla was extremely active as student advisor and peer helper at the University of Ottawa. She chaired the organizing committee for the 2002 Ontario Engineering Competition, which attracted over 200 attendees. She was on the Dean's Honour List and received scholarships for academic achievement. She was also the recipient of the Kipling Award from the Faculty of Engineering at the University of Ottawa. This is awarded to the one graduating student who best exemplifies an all-around individual in academics, community involvement, leadership, etc. Her co-ops included stints at Thermal Energy International, where she worked on the development of an air pollution control system, and at Imperial Oil in Sarnia, where she conducted optimization studies on the refinery's energy consumption and initiated designs for reducing emissions. Upon graduation, Karla joined Kraft's Cheese Operations in Ingleside as Process Engineer. She led a multidisciplinary team aimed at reducing water and chemical usage in all areas of production. She conducted feasibility studies and process optimization,

and executed yield improvement projects. She oversaw the installation, commissioning and validation of a control system. Overall she reduced variability and increased yield by tightening controls, recommending equipment upgrades, writing and implementing procedures, and installing new instrumentation.

In addition to various professional memberships, Karla is very active in her church community, particularly in family ministries. She coordinated a project called Family Formation, which helps families with young children bring back faith into their homes. She was also nominated for a YMCA/YWCA Woman of Distinction award for community involvement and leadership in the Ottawa region. She also finds time in her busy schedule to go swimming, boating and water-skiing.

BO FRANK FAN

MBA, Fordham University
Bachelor in Economics
Tianjin University of Finance & Economics

While working toward his Bachelor degree, Frank majored in international economic cooperation. He was selected as one of five out of 10,000 outstanding students by the Tianjin Municipal Government. Upon graduation, he joined Sinochem in Tianjin as Project Manger and was involved in a number of interesting activities. He directed a feasibility study on introducing Chinese-made zirconium series products into the US market. He researched the market for synthetic rubbers and resins in Southeast Asia by visiting clients and partners in Hong Kong, Korea and Malaysia. As a participant in the glycine anti-dumping lawsuit filed by interested parties from the US, he was responsible for responding to the Department of Commerce and ultimately won the lawsuit. Bo then went to Superchem PCB Chemicals as VP Operations. He completed three months of technical training at the company's headquarters in Los Angeles. He then participated in the construction of the factory, supervised plant operations, supported the company's global procurement plan and implemented a system for employee performance evaluation and incentives.

In September 2000, Frank decided to get an MBA and two years later was awarded the degree from the Chinese affiliate of Fordham University. For his internship he participated in a warehouse capacity review at Pricewaterhouse Coopers in China. Upon completion, he joined H&R Superchem as Purchasing Manager and was involved in supply chain and customer relationship management. Since July 2002 he has been living in Vancouver and performing global procurement for the same company. All his adult life Frank has been actively involved in Project Hope in China as well as with the "Green China" organization. He is also cofounder of the West Adventurers Club, which is dedicated to studying the folklore and culture of western China,

notably the Tibetan tribes, the Islamic villages along the ancient Silk Road and the Drung ethnic minority. He enjoys traveling as well as volleyball and he is a professional cook of Chinese cuisine. With all his experience, Frank would enjoy a career encompassing procurement, logistics, operations and project management.

XIANGYANG JAMES GAO

B.Eng. Mechanical Design & Manufacturing
Shenyang University of Technology

James is also interested in anything automotive. He has worked for over ten years in companies in the automotive sector: Beijing Jeep, Delphi Automotive Systems and Brilliance China Automotive Holdings. While at Shenyang University on scholarship every year, he was an Outstanding Student for two years in a row and an Outstanding Graduate. At Beijing Jeep, as process engineer he streamlined the manufacturing process for Jeep Cherokee axles and increased throughput by 30%. Promoted to Department Superintendent, he redesigned material flow on the shop floor, reduced inventory by 20%, achieved the desired RRPPM target and supervised a successful ISO 9000 audit. As Venture Support Engineer at Delphi Automotive, he transferred the ignition business of Fuji and Mitsubishi from Warren, Ohio, to China, thereby reducing lead times to customers by a month and realizing cost savings of 50%. He initiated the wiring harness project for Chevy Blazer utilities and pick-ups. He established ignition cable manufacturing and quality systems for Buick Regal/Century, Opel Corsa and Volkswagen Jetta. He received the technical renovation award from Beijing Jeep in 1994. From Delphi he received awards for global excellence (1998), Asia Pacific quality improvement (1999) and Asia Pacific Excellence (2000).

James then transferred to Brilliance where, in his capacity as automotive engineering supervisor, he improved design and solved manufacturing problems while working with Italdesign-Giugiaro of Turin and with BMW. Promoted to testing and validation supervisor, he identified potential design and production defects. In addition to anything dealing with automobiles, James is also very keen on soccer. He enjoys the teamwork and the team accomplishments that soccer provides. He has played soccer in high school, university, at Beijing Jeep and at Delphi. He has volunteered as soccer referee and coach for community junior leagues in Beijing, and as track and field umpire at university. James is very interested in pursuing a career in process improvement, project, supply chain or operations management.

GURMEET SINGH GULIANI

M.Eng. Industrial Materials & Metallurgy
B.Eng. Metallurgy
Punjab Engineering College, India

With an excellent record during his undergraduate studies, Gurmeet came first in the university and received the silver medal upon graduation. He was also the recipient of the National Talent Search Scholarship, which is awarded to the top 1% of nearly 150,000 students in India. He then joined the Steel Authority of India, the country's largest and the world's eighth largest steel producer, as



Technical Manager. He managed the operations of the section mill, improved cash flow, throughput by 20% and labor productivity by 23%. For his efforts, he was awarded the best-in-charge-of-shift award for improving productivity. Gurmeet then joined the Denver-based Quark Media House as Team Leader. This experience exposed him to the complete software development life cycle. He led an 11-member team to develop the production planning module for Quark ERP. Gurmeet then returned to the Punjab Engineering College for his Master degree. Upon graduation he became Business process Analyst with CMTR, a leading management consulting and training organization in northern India. He worked on a number of projects and produced some great results, notably turning around three money-losing rolling mills for NISST. He increased manufacturing efficiency by 18% for Samrat Forging and throughput by 25% for Punjab Tractors.

All his life Gurmeet has been very active in volunteer work. He offered youngsters free career guidance and helped destitute and illiterate children by offering free tuition. He is a regular blood donor. In addition to membership in various professional organizations, Gurmeet enjoys judo and even won second place in the Delhi State Judo Championship. He has applied for permanent residency in Canada and is looking for a challenging position in project or production management, process improvement, TQM implementation, or software development projects focused on ERP development and production/productivity improvement.

LUIS RAFAEL JIMENEZ GOMEZ

B.Eng. Industrial
Pontificia Universidad Javeriana, Colombia

As general management assistant at Securicor Thomas in Bogota, Luis developed a program of selection, development and evaluation of suppliers. He reduced lead time by 20% and increased the general quality index of suppliers by 10%. He designed and implemented processes in the areas of operations, purchasing, accounting and sales. As Process Analyst at Protekto, an electronic security systems company in Bogota, he developed a competitiveness study for corporate strategies in Colombia. He designed,

implemented and documented processes in purchasing, customer service, human resources and accounting. He coordinated a team of six professionals to launch initiatives in client development, with the result of increasing the customer base by 40% in ten months. He also designed and executed training courses for call center marketers. At Incolbestos, a manufacturing leader in friction materials and brake systems, Luis held the position of Continuous Improvement Coach. He coached dozens of process improvement teams in departments such as supply chain, investigations and test center, and in the brake system plant. He designed a database to manage the administrative and operational training program and to monitor the development of personnel competencies. He organized and coordinated the corporate incentives program for individuals and teams which implement ideas for improvement. He prepared and administered quality and environmental documentation for compliance with ISO 9001, QS 9000 and ISO 14001 standards. He also performed several internal audits as junior auditor in QS 9000 and ISO 9000.

The varsity soccer team, of which Luis was a part, won the championship a few times. He enjoys extreme sports such as rafting and rappel. In his spare time he plays chess and reads extensively about business. He finds capital, intellectual and knowledge management very interesting. He also loves to travel and learn about different cultures. In Colombia he volunteered for "Tu, Bogota y Yo", a group devoted to building a better culture of citizenship in that city. Luis enjoys working in teams, especially on projects involving new technologies. His career interests include continuous improvement, quality and environmental systems, and logistics.

SHUMING SAM LIU

B.Eng. Mechanical
Zhejiang University, China

Sam excelled in his studies at Zhejiang University, where he was a three-time scholarship recipient. Upon graduation, he joined a Japanese plastics company as production shift leader and then a construction materials company from Singapore as assistant plant manager. After two years he transferred to the automotive sector, namely the paint shop at Shanghai General Motors. Initially, as site coordinator, he monitored adherence to a strict construction timeline and coordinated equipment installation and commissioning. At this time he also received two months of training in the US and Germany. As topcoat supervisor, he organized a twelve-member team according to GM's Global Manufacturing System (GMS) and ensured that the operating lines ran smoothly. In his capacity as process engineer, he devised the control board for the paint process, modified and updated equipment valued at US\$150,000. He formed effective problem solving teams and improved

Direct OK (DOK) from 75% to 85%. Sam then accepted the position of GA-Body Lead Engineer at PAC Corporation. Here he prepared a bid for the AFC GA project, a large-scale joint venture between GM, SAIC and Wuling. He prepared equipment related bids, made presentations to potential suppliers and submitted bids to prospective clients. He provided site management and employee training for client companies, and he planned and implemented the overall schedule.

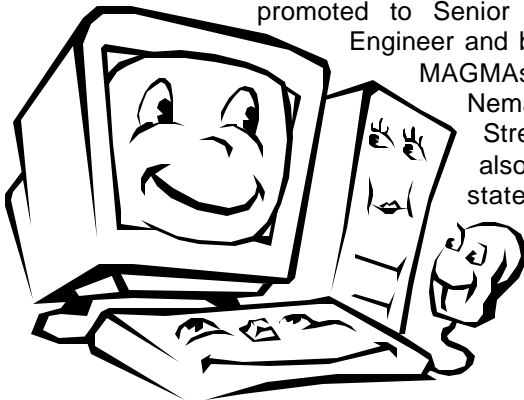
Sam is very proud of his many accomplishments, considering that he was born in a rural area and lived there for 18 years. He is always looking for ways of improving himself. He reads extensively, especially classic Chinese literature such as Shi Ji. He enjoys all sorts of sports, especially basketball, tennis and volleyball. He was a member of the GM Shanghai basketball team. He was also a member of the GM Shanghai weiqi association. Weiqi is an ancient Chinese game, widely played in eastern Asia. Sam has applied for Canadian permanent residency and would like to build a career in project or production management, or in some aspect of quality, process and equipment improvement.

RICARDO PLANCARTE RODRIGUEZ

B.Eng. Mechanical & Administrative
ITESM, Monterrey, Mexico

While at ITESM, Ricardo participated in the International Exchange Program and spent one semester at the University of Pittsburgh in 1997 studying mechanical engineering. For three years he participated in the Mechanical Engineering International Congress and was a member of the organizing committee and master of ceremonies in 1998. Upon graduation he spent one year with the Center for Integrated Manufacturing Systems at ITESM, where he performed various engineering design projects. The most important one consisted of failure analysis and diagnostics on a cooling folax mechanism used to transport cement. Ricardo then joined Nemak S.A., a division of the Alfa Group and the world's largest aluminum cylinder head producer. As CAD development engineer, he created the first parametric gating system design and replaced MAGMASoft photographic results with new and improved video animation. He was promoted to Senior CAD/CAM/CAE

Engineer and became the first
MAGMASoft designer in
Nemak to work with
Stress Module. He
also introduced
state-of-the-art PC
Cluster
Technology
to Nemak and
decreased
MAGMASoft
processing



time from ten days to eight hours per simulation. He was the head CAD casting component designer for the release of the new Jaguar 3.0L X-Type, and he ran casting simulations for all the major automotive manufacturers, such as GM, Chrysler and Ford.

Before coming to Montreal in the summer of 2003, Ricardo spent two months at the Goethe Institute in Düsseldorf Germany, studying Intensive 8 Basic German. He is also a great aficionado of soccer and will join a team in any city in the world, wherever he happens to be at the time. He has played in local and college tournaments and in 2002 he organized a tour for 15 people to the FIFA World Cup in Japan. He has also been active in Christmas toy give-aways to several children's hospitals in Mexico. Ricardo is very particular about the type of career he would like: he would love to utilize all his engineering and design skills in the automotive industry.

KUN KEVIN XU

M.Eng. Mechanical
Xi'an Jiaotong University, China
B.Eng. Mechanical
Hubei Automotive Industries Institute, China

After graduating from Hubei Automotive Industries Institute, Kun stayed on as teaching and research assistant. He tutored in mechanical manufacturing technology curriculum design and provided instruction on machine tool fixture design and mechanical manufacturing technologies. He then spent three years at Xi'an Jiaotong University completing his Master degree. He received awards for being an excellent graduate not only of the university, but also of Shaanxi province. Upon graduation he joined Huawei Technologies as Mechanical Engineer and Project Manager. He performed R&D for a telecom equipment cabinet using the integrated product development process. He designed and optimized a cabinet platform using the design for manufacturing and assembly method. This cabinet platform was sold to Singtel, Asia's leading telecommunications company, based in Singapore, and the new design will save Huawei about US\$3 million per annum. He invented five patents which have been accredited by China's State Intellectual Property Office, and recently he applied for a sixth patent.

In his spare time, Kun enjoys all types of sports, especially badminton, basketball, ping pong and running. He likes to watch the Formula One World Championships, reading and singing folk songs. He would very much like to work as a design engineer or operations manager, especially in the telecom or automotive industries, where he has a few years of experience.

WEI WILLIAM XU

B.Eng. Machinery Manufacturing Techniques & Equipment
Beijing Institute of Technology

While still at university, William designed a computer control system for a planetarium, including building the mathematical model, establishing a distributed system and developing the software. Upon completing his undergraduate studies, William started his career at China ORDINS Corporation as mechanical engineer. ORDINS is a supplier of machinery and electrical equipment as well as a tendering organization for construction projects. Here he was involved in the development of a low-cost CNC lathe, he promoted the application of the EMD machine tool in mould manufacture, and he participated in the preliminary design for the first-phase renovation of the automobile's universal joint for a machinery works company. After being promoted to Technical Manager, he was in charge of a five-member team to service both internal and external customers. He conceived preliminary designs according to client standards and requirements, participated in technical negotiations, and formulated technological flow sheets for product processing. During his tenure at ORDINS, William also received accreditation as a Microsoft Certified System Engineer for network systems. Two years later he joined Sybase in China as Project Manager. He performed business analysis and designed the implementation plan of a major telecom company, China Unicom. He participated in the company's customer relationship management project and supervised the data warehouse product implementation for the client.

William maintains that one of his great strengths is ease of communication with all sorts of people. He has no problem talking with anyone and getting his ideas across. This helps him to quickly pinpoint and analyze customer requirements. He would be very happy to locate a career in some aspect of operations or supply chain management.

CHI DORIS ZHANG

B.Eng. Computer Science
Shanghai University

Doris started her career as product and test engineer at Shanghai Nortel Semiconductor and two years later she joined Ericsson as System Support Engineer. In the year 2000, she moved to Canada and worked for three years as product and test engineer at STMicroelectronics in Ottawa. She was responsible for data analysis and yield improvement for sustaining products, and for NPI characterization and new project management. She assisted in an ISO 9001 internal audit. She developed test programs and implemented and coordinated the transfer of test software and hardware between different manufacturing plants. She coordinated wafer process

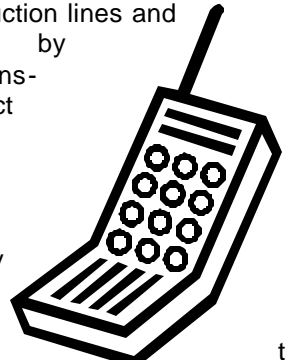
qualification in a new manufacturing site. She introduced a new product with a 95% production yield, and she reduced the cost of a wireless communication product by increasing production yield by 20% and decreasing test time by 15%. As system support engineer, she coordinated technical activities associated with new projects and the updates of existing systems. She also provided technical support to internal users and designed and lectured on new software training.

Doris has a number of interests in her spare time: photography, volleyball, playing a Chinese instrument called peepa, and travel. She always likes to experience something new. After arriving in Canada, she tried two activities which were completely new to her: camping and downhill skiing. Both allow her to enjoy the beauties of nature. While in Ottawa, Doris participated in events organized to benefit the Children's Hospital of Eastern Ontario. Her career interests lie in the fields of product and process engineering and development, supply chain and operations management, as well as marketing.

LINDA NAI JING ZHANG

B.Eng. Automation
Tianjin Institute of Technology, China

Linda was hired by Motorola China as assistant to the Operations Manager, upon completing her university studies. She supervised production lines and significantly reduced WIP by revising Standard-Operations-Procedures (SOP). The defect ratio for scrap decreased from 8.1% to 3.6%. She rigorously analyzed and controlled the budget and succeeded in reducing overhead costs by 26%. After two years with the company, she transferred to CTS (Tianjin) Electronics, the former component product group of Motorola. As business assistant to the managing director, Linda facilitated the implementation of an MRPII business system, was involved in the reinvestment plan required for the expansion of the facility, and successfully coordinated an investment fair held by the Chinese government in Washington, DC. Promoted to Customer Service Supervisor, Linda was responsible for maintaining excellent relations with existing customers and simultaneously developing new ones, by means of demand and inventory reviews, planning and production scheduling, and effective communication. She set up an effective hubbing system, improved On-Time-Delivery (OTD), and participated in the Lotus Notes upgrade program. She succeeded in resolving a quality issue which prevented a customer return totaling US\$255K. And she developed a major new customer, the largest local Chinese electronics company, and coordinated the qualification process.



Linda is extremely interested in the effects of international business expansion, especially as related to manufacturing. In 2000, she assisted the American Volunteer Association in facilitating cooperation between American and Chinese business. She was a volunteer coordinator for the Annual Business Week Forum, held in Tianjin in 2002, and presided over by former US President George Bush and China's Vice-Premier Li Lan-Qing. Linda has managed to cultivate strong relations with the Chinese provincial and central governments, for greater ease of business dealings. She also enjoys singing and swimming in her spare time and, as a university student, was involved in the World Table Tennis Championship, held in Tianjin. Her ideal job would encompass various elements of supply chain management, such as planning, purchasing, logistics, customer service and international business coordination.

WANLI JERRY ZHU

M.Eng. Automobile & Tractor
B.Eng. Automobile & Tractor
Beijing Agricultural Engineering University

Jerry started his career as engineer at the Beijing Engineering Machinery Institute, where he designed a light duty pickup for agricultural use and redesigned the chassis of a light duty tractor used to haul construction machinery. He then went to Weifang Tractor as assistant production officer. At this company he organized the production and testing of a transformed chassis and provided technical support in the selection of materials and suppliers. As marketing executive with the China National Hainan Trade Center, he managed the processing of auto parts valued at US\$2.1M, organized their production and handled financial and export issues. He also succeeded in winning an international bid for an engineering project under a World Bank loan of US\$1.5M. His last four years in China were spent as Product Manager at the Beijing Jeep Corporation. Here he provided technical purchasing and supply support, directed quotation requests and analysis, conducted financial analysis of the localization process, built up a supplier network, directed a market research program related to SUV's in China, supervised the quality control system and analyzed customer surveys.

Jerry moved to Toronto in 2001 and worked as production coordinator at Professional Botanicals. He was involved in importing equipment, sourcing herbs and chemical materials, and providing technical support in introducing a new production line. Jerry has always been very active in volunteer activities. He was one of the first donors to the Beijing Spine Bank and he organized donations for flood victims through the Chinese Red Cross in 1998. In Toronto he volunteered at the St. Paul's L'Amoureux Seniors' Center. He loves to cook, to play tennis, table tennis and basketball, as well as to watch basketball, football and soccer games. His ideal

career would be in some aspect of supply chain, logistics, procurement or process improvement.

NEW PART-TIME STUDENTS

The MMM program is pleased to welcome two new part-time students this year.

MARC ANTAKI

B.Eng. Mechanical
Minor in Management
McGill University

Marc was already introduced briefly in the September newsletter, as winner of the Werner Graupe Memorial MMM Fellowship. He hails from Lebanon and is completely fluent in English, French and Arabic. Prior to arriving in Montreal to pursue his undergraduate degree, Marc worked as site engineering trainee in the quality control department of Bacol Batteries. He then did a stint at the National Bank of Paris Intercontinental, where he handled customer accounts and transactions, as well as a special project on letters of credit. While at McGill studying for his bachelor degree, Marc had two internships. One was at Indevco - Unipak Corrugated Carton Boxes in the production, maintenance and quality control departments. His main project was to ensure the optimal performance of the driving machine called the "Steambloc Boiler" by studying the properties and characteristics of the oil. At iVision Integral Inc., Marc was web researcher and web content editor. He participated in the creation of an electronic magazine, "Zone XY", by analyzing and editing web sites in both English and French.

For his honors thesis project at McGill, Marc wrote on evaluating the performance of technical information transfer in the new product development process. He gathered data, studied and compared the use of communication for design of ongoing projects in three aerospace-related companies: Bombardier, CAE and CMC Electronics. He then proposed solutions for optimal technical information transfer. Upon graduation, Marc was hired as Engineering Manager by Lamiver, a manufacturer of windshields for cars. Because he was the only engineer, he had to supervise every aspect of maintenance, quality, research, development and technical support. One year later he was promoted to Plant and Operations Manager. The promotion brought with it more responsibilities, namely human resources, sales, account management and customer support. Marc views this as a tremendous learning opportunity.

Marc considers his move from Lebanon to Canada as a turning point in his life. He started a new life with a great deal of academic, professional and personal enrichment. Whenever he can enjoy some spare time, he enjoys sailing, scuba diving, Filipino kali and kickboxing, tennis,

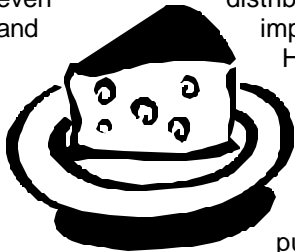
skiing and music. He has traveled extensively in Europe, the Middle East and North America, and plans on resuming his travels once he completes the MMM degree. He would ultimately enjoy a career allowing him to be an effective agent of change, improving products and processes, and restructuring companies to increased levels of performance.

JULIE BERNIER

B.Eng. Chemical
McGill University

After completing her undergraduate studies, Julie was hired by Kraft as External Project Engineer to support senior engineers in programming operating interfaces, controlling cash flow and planning shutdowns of projects. As Plant Engineer two years later, she was placed in charge of five engineers, formed productivity teams, provided technical support to production, and managed up to twelve engineering projects simultaneously. In 2002, Julie managed the final engineering, finance, purchasing and implementation of the soya oil feeding and distribution project. She planned four shutdown phases to maintain a satisfactory service level at the five production departments. The result of her efforts generated savings of \$2 million annually. For this Julie received the Achievement Beyond Call of Duty (ABCD) award, of which she is extremely proud. Another project involved improvement of the peanut roaster thermoclean. In this one Julie met both her objectives:

even distribution of heat through the tunnel and improvement of belt sanitation.



Her latest project focused on the pasta cheese dust collector in which Julie worked closely with the external engineering design team and supervised the draughtsman throughout purchasing and execution. This

project generates up to \$20M annually in cost avoidance by recuperating the dust generated at fillers with specifically designed captors.

While at Kraft, Julie embarked on a course of lifelong learning by enrolling in a project management course at Ecole Polytechnique and a course on automation and controls at McGill. She also served as a judge at the Bell Montreal Regional Science Fair. In the past she has done volunteer work at the university, like planning orientation week and working with Variety Show with proceeds going to the Children's Wish Foundation. She loves reading, especially science fiction and fantasy. Julie also enjoys extreme sports and she will try every one at least once!

Julie admits that she is passionate about her work. She has almost five years experience in project management at Kraft and, in August of this year, was promoted to Project Engineer for the Northeast area of the company.

This gives her an opportunity to manage projects valued up to \$1.5M. She is looking forward to more complex projects involving an increased amount of capital. Eventually she would like to become a Business Engineer for Kraft, combining marketing, engineering and production. After that, the sky's the limit.

OCTOBER PLANT TOUR

On October 17, the MMM students set out on their fall plant tour, accompanied by professor Vince Thomson. This year's tour included visits to two companies: BreconRidge Manufacturing Solutions and MMM corporate sponsor, Tembec Inc.

BRECONRIDGE, located in Ottawa, is a global provider of a full range of electronic manufacturing services (EMS) including design, concurrent engineering, manufacturing, test, systems integration, distribution and repair. The Company's business development strategy is to target high growth vertical markets and communications, specifically wireline, wireless and optical networking. Meanwhile, the company continues to expand its customer base in the industrial and consumer markets. Currently, it has approximately 700 employees across locations in Canada, the US, Hong Kong and France.

The company has a unique way of conducting and focusing its business. BreconRidge is not a mass producer. It establishes strategic relationships with its customers to provide a totally customized product. This business strategy is known as "Services from A to Z, from Stand Alone engineering to fully Turn Key". Among the services provided are prototype assembly and value-added new product introduction, materials management including supply chain management, manufacturing defects analysis, analysis of the manufacturability and testability of a design, test implementation and pilot production runs leading to volume. BreconRidge is fully equipped to provide custom configuration of products and to ship such custom products directly to the end user on behalf of the customer. This strategic involvement of BreconRidge in the early stages of product development, design, manufacturing and testing provides a uniqueness from all other PCB assembly companies.

BreconRidge employs a variety of technologies in the assembly of printed circuit boards, building and configuring final product and testing assemblies to ensure customer requirements are met. The company offers both Surface Mount Technology (SMT) and "through hole" circuit card assembly capability, through the use of high capacity, automatic assembly and test equipment. BreconRidge's end-to-end test solution includes structural test, functional test and system test. The company is ISO 9000, ISO 14000 and TL 9000

certified. It follows the stringent IPC 610 workmanship standards along with strong internal quality standards of maintaining very low defect per million operations (DPMO).

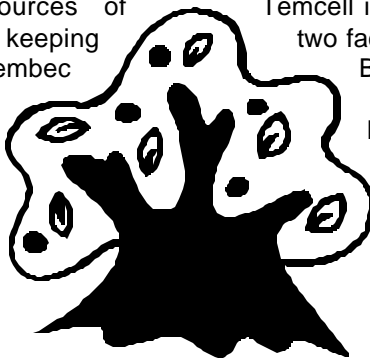
As a young company, BreconRidge has properly positioned itself in the market. The company embeds the "DFX" concept in its design process to meet the diverse requirements in the concurrent engineering environment. While most companies try to focus on high-volume manufacturing, this company has created a name for itself by delivering a complete product: design, production and distribution.

The MMM program is extremely grateful to the following executives at BreconRidge for hosting this highly instructional visit:

ALAIN DESPRES
GUY CHAPMAN
GEORGE RUNSTEDLER
STEVE BONHAM

TEMBEC is one of the leading integrated forest products companies in North America with revenues of \$4 billion and 55 manufacturing facilities throughout Canada, the United States, France and Chile. All its products are made by processing and transforming wood through a wide variety of mechanical and/or chemical processes. Pulp making at the Temiscaming site is divided into four different processes, namely Cooking, Bleaching, Drying and Finishing.

The Silvichemicals Group within Tembec was established as a result of the increasing severity in legislation governing the disposal of waste generated by manufacturing operations. Because silvichemicals are made from trees, a renewable resource, they have a big advantage over other non-renewable sources of chemicals such as petroleum and coal. In keeping with its strict environmental policies, Tembec transforms the waste generated through its pulp making process into value-added products while at the same time ensuring that the environment is not harmed. This value-addition signifies that the waste conversion process, instead of being an expense for the company, is actually a profitable business unit, a fact that is indicative of the innovative and smart business sense for which Tembec has become renowned. The Silvichemicals Group converts process waste and produces alcohol (ethanol and methanol), resins (phenolic powder and liquid resins), and lignosulfonate sales (sodium, calcium and ammonium). Alcohol and lignosulfonates are derived from hardwood, softwood and blended feedstocks. Currently, Tembec produces 14 million liters/year of ethanol. Because it is really pure alcohol, it



is used as a solvent in different industries such as cosmetics, pharmaceuticals, coating and food processing. Actually, almost all of the vinegar industry in eastern Canada uses the 96% ethanol made at Tembec. Among the main clients of the Silvichemicals Group are Heinz, McCormick and Kraft. Lignin is a highly polymerized, amorphous material that makes up the middle lamella of woody fibers and cements the fibers together. Tembec produces and markets 80,000 metric tons of sodium, ammonium and calcium lignosulfonate each year under the ARBO brand name, most of which is used for concrete admixtures, textile dyestuff, carbon black, animal feed and limestone binders. The Chemicals Group, inclusive of resins, generates 5% of Tembec's EBITDA with a 14.5% margin in 2002. The future projects of Tembec Silvichemicals Group include gasification of biomass (wood-based fuels would generate power cleanly and efficiently, and at a low cost), and modified lignosulfonates.

At the Specialty Cellulose plant, the students learned complete details of the cooking, bleaching, cleaning, sheet forming and drying processes used in the production of this high quality product. Sulfite pulping is not the most common method of extracting specialty cellulose. Kraft pulp is the most popular form of chemical pulping in North America. The important difference is the purity and quality of the end product and the market to which this product caters. Whereas Kraft pulp has a wide application ranging from newsprint to photo development paper, Tembec's specialty cellulose is used in dairy products, medication, explosives, plastic products, clothing and pet food. Sulfite pulping is a more expensive method, but it provides entry to specialized, diverse, high end markets, both locally and internationally. Tembec produces over 400,000 MT of specialty cellulose pulp annually.

Temcell is the high-yield pulp division of Tembec. Its two facilities produce between 865 to 965 MT daily. Because this mechanical pulp is less expensive than chemical pulp, Tembec has had to improve productivity and reduce costs in order to be cost-effective. The students received a detailed explanation of the entire Temcell process: preheating the chips, removing fines, washing, refining, screening, cleaning, bleaching, drying and packaging. They noticed that the lines are designed for high productivity and that the level of automation is also very elevated.

All operating data is collected through thousands of sensors throughout the production line. This data is then transmitted to twelve computers in the central control room. If unsatisfactory indicators appear on the computer screens, the engineers immediately head for the trouble spot to take samples and perform tests in the lab connected to the central control room. Once the symptoms are identified and the

problem analyzed, the engineers determine the most effective solution. The students also learned that the lumber used by Temcell is mostly maple and birch, both of which are extremely widespread in Canada. Because Temcell has a thorough understanding of the morphological properties of the woodfibre, it is able to tailor the pulp to match the fibre quality requirements of papermakers. As a result, Temcell pulp is widely used in the manufacture of products such as copy paper, coated paper, printing and writing paper, reply cards, tissue, toweling, file folders, construction paper, etc. Using its advanced technology, Temcell has successfully stretched the unit weight of its high-yield pulp to cover an additional 10% of surface area. This has resulted in major cost savings to its customers, which are located all over the world including the United States, China and Japan.

Temboard is Tembec's paperboard producer, with annual output of approximately 155,000 tons. The products are mainly used in commercial printing, publishing, prestige packaging, high-impact graphic corrugated containers and litho-laminated packaging. The major production task at Temboard is the removal of water from the pulp using a variety of dryers. Both mechanical and chemical pulp is used in paperboard production. Mechanical pulp is inexpensive and offers a high yield, but can only be partly bleached. Chemical pulp is of excellent quality and can be fully bleached, but it is expensive. Therefore, in an effort to maximize product function while minimizing the costs, Temboard splits the paperboard into three layers: mechanical pulp in the middle layer and chemical pulp on the top and bottom layers. The industry standard is only two layers. By adopting mechanical pulp in the middle layer, the product satisfies the customer's thickness requirements. The chemical pulp layers in the top and bottom offer the same print quality as those in traditional technology. Temboard has invested in complex equipment from Finland, which is relatively new on the world scene. This equipment is utilized 350 days a year, and provides high capacity and smooth operations. Its major drawback is the high cost of maintenance - down time costs US\$100,000/hour.

With the onset of rapid growth beginning in 1995, Tembec has made every effort to protect the local environment and to create positive, long term social, cultural and economic benefits for the region and its people. It implements environmental management programs such as Impact Zero and Forever Green. Nearly all of its operations conform to the ISO 14001 Environmental Management System. On December 3, 2003, The Home Depot, the world's largest home improvement retailer, and Tembec announced their agreement allowing The Home Depot to offer its customers large amounts of FSC certified Spruce Pine Fir (SPF) lumber. Forest Stewardship Council (FSC) certification is the world's highest endorsement of

environmentally and socially responsible forestry practices, because it is the only system that tracks products from the forest floor all the way to the retail shelf. When consumers see an FSC logo on a forest product, they can be sure their purchase supports forestry practices meeting the highest environmental and social standards. At the present time, over 25% of Tembec's Canadian forest operations are FSC certified. By 2005, the company intends to obtain certification for all 32 million acres of Canadian forest under its management.

Gerry Kutney, VP and General Manager of the Silvichemicals Group, made the closing presentation to the MMM students on the morning of their departure. He explained Tembec's business philosophy, focusing on four main areas: resources and environment, community and employees, return and risk, growth and government relationships. The company's unique culture of a strong sense of belonging, profit sharing and active employee participation has stimulated innovation, entrepreneurship, and a distinguishable competitiveness. A company environment characterized by effective training, open and honest dialogue, has ensured that all employees are motivated to contribute to their maximum ability and to maintain high performance standards.

The MMM programs extends its heartfelt gratitude to the Tembec team for a memorable visit:

ROB ALLAIN
TERRY BEACH
ERIC GAUDREAU
ISABELLE IVANOV
GERRY KUTNEY
MARC LEFEBVRE
ERIC LEMIEUX
MARC MOREAU
DENIS SAUVÉ
JACQUES TALBOT

CASE STUDIES

During the fall plant tour, **TEMBEC** provided the MMM students with a case study which could have important consequences for the environment. Tembec is having a problem with the amount of Sulfur Dioxide (SO₂) emissions that are being released from the plant manufacturing sulfite pulp. SO₂ is a colorless gas with a choking taste. It smells like burnt matches. SO₂ is not harmful if present in low concentrations (0-15 AQI) but with higher concentrations various problems can surface. People with asthma or chronic lung or heart disease are the most sensitive to SO₂. Along with nitrogen oxides, SO₂ is the main precursor of acid rain, which can contribute to the acidification of lakes and

streams, accelerated corrosion of buildings and reduced visibility. Tembec places great emphasis on protecting the environment. Although its SO₂ emissions are within standards, the people in the town of Temiscaming often complain about the foul odor. Therefore, the company is seeking a solution for the occasional emissions of SO₂.

Upon further investigation, it was determined that the release of excess SO₂ could be traced back to the manufacturing of a specific grade of pulp, called HV. When this particular grade is run, the operators open one or two valves that allow for a release of SO₂ to the scrubbers. This is required because the compressors cannot handle the excess volume created during runs of HV. Unfortunately, the scrubbers cannot handle this excess either, and some SO₂ is released into the atmosphere.

The HV process runs at a lower temperature and has a shorter cooking time. As a result, the amount of SO₂ dissolved at the end of the process is greater than that for other processes. This equates to a higher release of SO₂ in later processing stages.

The company can buy a higher capacity compressor, new scrubbers or more efficient condensers. Prior to the MMM student visit, Tembec had received quotes for increasing the capacity of the compressor. This option was rejected due to the necessity of shutting down the plant during installation and because of the high cost. As a result, this option is being used as the benchmark. All higher-priced solutions have similarly been discarded.

The investigation is divided into 3 sections: upstream solutions (digesters and before), in-process solutions (around the evaporators), and downstream solutions (treating the SO₂ at the scrubber). Quite a few ideas were generated initially; however, many of the solutions proved unworkable, either due to lack of available data proving that the solution has worked in a pulp mill before, or due to high cost. The MMM students are pursuing the investigation of two possible solutions: rescheduling the HV production and initially using a decreased amount of liquor.

On December 12, 2003, the MMM students visited **GROUPE LACASSE** in St-Pie, a manufacturer of office furniture and the employer of Kambiz Delavari, who is completing his internship at this company. He presented two projects for resolution. The first case study involves developing a method to establish a Kanban system for supply replenishment. The students have to develop the mathematical formulae necessary to perform the calculations required to organize a Kanban system. They will have to list the data that will be used in the calculations to design as well as to audit and maintain the system. The second project centers around the manufacturing planning system used by Groupe Lacasse. Capacity planning is being performed by an

individual who feeds information into the system so that a schedule can be produced. The students have to determine the characteristics that are required in a capacity planning system to do the work of that individual and to decide on the logic that is required to do this capacity planning. They must also investigate an alternative: is there a system that can be purchased to interface into the present system? If so, then they must also determine the attributes required in such a system.

NCML MEETING

For the first time ever, the annual meeting of the National Coalition for Manufacturing Leadership (NCML) was held in Montreal and hosted by McGill University. The two-day event, November 6 and 7, was attended by eleven member universities and seven industry representatives. In addition to McGill, the other universities included:

Cal Poly - San Luis Obispo
Mass. Institute of Technology
Monterrey Tech
North Carolina A&T State University
Penn State
Rochester Institute of Technology
San Diego State
University of British Columbia
University of Michigan
Wayne State University.

The industry representatives included:

Michael Avedesian, Executive-in-Residence, McGill
Bill Campbell, IBM Canada
Andrew Cion, Pratt & Whitney Canada
Olivier Fichet, Nortel Networks
John Glavas, Draxis Pharma
Ray Haynes, Northrop Grumman
Angelo Segall, CMC Electronics

This year's meeting was distinctive for a variety of reasons. A number of reports had been prepared in advance which focused on current trends in manufacturing, forecasts for the next few years and implications for NCML programs. Prior to the annual meeting, a survey had been conducted of NCML-affiliated universities to determine enrolment trends, the status of industry partnerships, challenges and responses to these challenges. The final, and most contentious, topic focused on the issue of a "brand identity" for the NCML programs, along the lines of an MBA identity.

The first report dealt with the automotive sector. The most important trends included increased complexity of product design, severe cost-cutting pressures, shifting

manufacturing to new and emerging markets, global alliances and SCM, virtual global teams and increased web collaboration tools. Educational institutions will have to teach global product development, provide cross cultural training, more courses on international business and finance, integrate electronics/software into product development, and develop joint programs focused on knowledge management and best practices in a global context.

The second report focused on high-tech manufacturing. Using the example of the world's four largest EMS providers, Sanmina-SCI, Flextronics, Celestica and Solectron, the major trend in recent years has been moving production to lower cost locations. However, this has its downside. Studies reveal that global supply chains do not support accelerating innovation or flexibility, do not manage risk adequately, and do not collaborate with customers effectively. Outsourcing has become a fad which does not mark the end of managing an activity but the beginning of managing it in different, and often more difficult, ways. As a result, training is seriously required in rapid product innovation, flexibility, service and product quality, as well as customer-supplier collaboration.

The aerospace industry was the theme of the third report. For some years now, this sector has been experiencing serious difficulties. Since 9/11, air traffic dropped 20% and manufacturing declined by 21% worldwide. However, there appears to be a huge pent-up demand for travel and the world fleet is expected to double over the next 20 years. This will be accompanied by major changes in design and manufacturing, notably new assembly methods, improved cycle time, new materials, technologies, equipment and systems. The emphasis will be on process excellence and synergistic solutions. A new air traffic management system will be required. There will be more initiatives toward "single skies", increased security measures, and military orders will continue to rise. Collaboration will be the key: from collaborative design/manufacturing/supply chain/project management to global cooperation in an era of global threats. Although there are less opportunities and less support for NCML programs in the short term, increased aerospace manufacturing activity will provide excellent opportunities in the medium-long range.

The two final reports concentrated on China and its impact on NCML programs. China is the world's largest consumer market with 22% of world population, and the world's sixth largest economy at US\$4.5T. It has experienced sensational economic growth, especially in traditional manufacturing activities, and one of the key reasons is the low cost of labor - 5% of the average manufacturing wage in the US. Other reasons include currency and tax manipulation, subsidized exports, counterfeiting and property rights violations. China is still a developing country controlled by the Central

Committee of the Communist Party. Its banking system is highly suspect because bad loans are estimated at over 31% at the end of 2002. Real wages are rising, as is income inequality, with sharp divisions between urban and rural areas. Experts are keeping their eye on the Beijing Olympics in 2008 because of a possible financial crisis immediately after. As far as the NCML programs are concerned, China can provide a huge pool of potential applicants in the short term. Problems lie in internships, especially in companies where security clearance is required. In the long term, alliances may be forged with Chinese companies and universities for management training in China, and there may be great opportunities in multinationals with operations in China. A high percentage of traditional manufacturing has moved to China and other Asian countries; therefore, the focus in North America will be on design, product and process innovation, quality, pilot and advanced manufacturing, improved systems thinking and enhanced leadership skills development.

Once the presentations were completed, the seven industry representatives were requested to provide their comments. Although every industry has its own set of priorities, a number of common themes emerged, among them:

- Quality is at the top of everyone's list. The cost of poor quality is phenomenal and it has to be addressed. There is no room for error, especially in sensitive industries such as aerospace and pharmaceuticals.
- Innovation - new designs, products, processes, systems, technologies, materials, machines. Design and development must be retained locally.
- Cost reduction is also a top priority, but the focus has to be on removing waste from the system rather than on low-cost manufacturing per se. The operational drivers of financial efficiency must be defined.
- Focus on speed, delivery and collaboration with the customer
- Change is constant and companies must adapt to change quickly
- Systems integration and skills to manage on a global scale
- Virtual teams to facilitate knowledge sharing
- Large-scale project management at every phase
- Seamless communication for information and knowledge transfer across the value chain
- Replacements will be needed for about 30% of a knowledge workforce that is retirement eligible. Ideal candidates will include engineers with communication skills and business abilities. Security clearance will also be a major factor in the hiring process.

- The NCML programs should expand beyond the traditional base of mechanical and industrial engineering and actively recruit candidates in biotechnology, environmental, bio and materials engineering.

On the second day, all the universities made presentations updating their individual programs. Prior to the annual meeting, a survey had been conducted to determine enrolment trends, graduates' career choices and funding sources. The results of the survey demonstrated that support from founding industrial partners had declined moderately and that it had affected enrolment, funding and internships. NCML members were trying to broaden their base of supporting companies by expanding into biotech/biopharma/medical/consumer goods, smaller companies, global partners and the service sector. Some member programs were also reviewing their curriculum as it relates to globalization, Six Sigma, service operations and projects so as to provide more value to industry partners.

For some time now, the notion of brand recognition for NCML programs has been building momentum, as a result of the need for better management talent in operational activities. A clear differentiation from an MBA is required with more emphasis on operations activities, leading edge production, supply chain, quality, etc. Along with a strong management core of courses there would be a broad technical curriculum, from product development to logistics. The special features would include high industry participation, a work term or application project and emphasis on Leadership.

At this annual meeting it was decided to form a committee that would define the shared vision of the NCML programs, their commonalities, salient features and outcomes. The committee would formulate a plan for the creation of an NCML budget and for a joint advertising effort. NCML would also enter into more collective activities, such as the annual recruiting forum, joint internship efforts, global teaming on projects and case studies, a comprehensive alumni database and global virtual teams. MMM's own professor Vince Thomson is heading this newly-established committee. A preliminary proposal is to be presented in the spring of 2004.

CMC ELECTRONICS DEVELOPS A PRESENCE IN LOCAL UNIVERSITIES

By **Angelo Segall**
Manager Engineering Support Group
McGill Adjunct Professor

Generating awareness among students is key to successful corporate recruiting. CMC Electronics is making a concerted effort to develop a recognizable presence at local Montreal universities. The company is accomplishing its goals through a number of efforts, notably co-op programs, providing instructors for courses, conducting plant tours and presentations.

Co-op programs are the focal point of corporate recruitment activities. Students completing projects promote the company to their fellow students and they are an excellent resource for any short-term projects or tasks the company needs to resolve immediately. Throughout the year, there are a number of students working on various projects in the Engineering Division alone. In addition, these co-ops provide CMC with the opportunity to evaluate candidates before committing to a permanent hire.

Because engineering curricula should ideally combine a strong traditional engineering education with the latest practical techniques being applied in industry, CMC has launched its Education Program whereby corporate staff provide instruction and training at the university level. This fall, Olivier de Browier conducted a course on Quality Assurance at ETS. Angelo Segall has been teaching the Product Design and Concurrent Engineering Environment course at McGill University's Department of Mechanical Engineering for four years now. Very often CMC executives are invited as guest speakers for particular lectures on specific topics. Patrick Champagne, VP Engineering, made a presentation to McGill's MMM students on the Deployment of a Product Data Management System at CMC. Recently, Jacques Pellerin, Configuration Manager, lectured on Product Architecture and Configuration Management at CMC to students at Concordia University. These are only a few, recent examples.

Combinations of plant tours and presentations at corporate headquarters provide students with exposure to CMC Electronics, its senior management and key employees. They also convey the company's commitment to the design and manufacture of quality products and its continued support of the student community. On November 25 this year, Angelo Segall organized a tour for the 40 registrants in his Product Design class, comprising Mechanical Engineering and MMM students. After a detailed and informative presentation on the application of Six Sigma at CMC Electronics and Design for Six Sigma, the students went on a guided tour of the Engineering and Manufacturing departments. They saw firsthand how product design teams are integrated, the interaction between engineering and production, and the importance placed on planning manufacturing flow.

CMC Electronics will continue its efforts to cooperate with all local universities and to promote the practical

aspects of an engineering education. The company is proud of its contribution to the formation of future technical and management leaders.

The following is a picture of Professor Angelo Segall with some of the MMM students in the lobby of CMC Electronics:



Holiday Greetings From MMM



ALUMNI NOTES

ROGER HUANG, MMM'01, has joined Talon Retail Strategies Group as Senior Operations Supervisor. The company prepares promotion packs for companies like Procter & Gamble and Chlorox, and ships to big retailers like Walmart, Costco and Sam's Club. In August of this year, Roger became the proud father of a little boy, Justin. Congratulations and best wishes for a long and happy life!



Thank you
For your
Valuable Contribution
and
Best Wishes
For a
Happy New Year!