

**CANADIAN MANUFACTURING TECHNOLOGY SHOW 2011
SCHEDULE AT-A-GLANCE**

MONDAY OCTOBER 17	TUESDAY OCTOBER 18	WEDNESDAY OCTOBER 19	THURSDAY OCTOBER 20
Registration: 8:00 a.m.-5:00 p.m. Exhibits: 10:00 a.m. – 6:00 p.m.	Registration: 8:00 a.m.-5:00 p.m. Exhibits: 10:00 a.m. – 6:00 p.m.	Registration: 8:00 a.m.-7:00 p.m. Exhibits: 10:00 a.m. – 8:00 p.m. (Late Night)	Registration: 8:00 a.m.-3:00 p.m. Exhibits: 10:00 a.m. – 4:00 p.m. Student Day
8:00 a.m. – 9:00 a.m. SME Member Breakfast with Kevin O’Leary	8:00 a.m. – 9:00 a.m. SME Member Breakfast with John McElroy		
9:00 a.m. – 10:00 a.m. CMTS Keynote Kevin O’Leary Sponsored by Autodesk	9:00 a.m. – 10:00 a.m. APMA Automotive Summit with John McElroy		
	10:00 a.m. - 1:00 p.m. Meet John Guderian, author of ‘Lean 9001: Battle for the Arctic Rose’ at the SME Member Lounge		
10:15 a.m. - 11:45 a.m. Cost Control and Efficient Manufacturing	10:15 a.m. - 11:45 a.m. Machining Technology and Trends	10:15 a.m. - 11:45 a.m. Challenges in Medical Device Manufacturing	
11:00 a.m. – 1:00 p.m. MEUK Lunch & Learn 3 Steps to Simplifying Your R&D Projects for Tax Credits Interactive Session	11:00 a.m. – 1:00 p.m. MEUK Lunch & Learn SR&ED Tax Credit – Crash Course Pt.1	11:00 a.m. – 1:00 p.m. MEUK Lunch & Learn SR&ED Tax Credit – Crash Course Pt. 2	11:00 a.m. – 1:00 p.m. MEUK Lunch & Learn Advanced Issues – SR&ED Income Tax Cases
	11:00 a.m. - 1:00 p.m. IMAGINiT Lunch & Learn Increasing Engineering Productivity through Process Automation		
11:45 a.m. - 1:00 p.m. Visit the CMTS Exposition & Lunch at Leisure	11:45 a.m. - 1:00 p.m. Visit the CMTS Exposition & Lunch at Leisure	11:45 a.m. - 1:00 p.m. Visit the CMTS Exposition & Lunch at Leisure	11:45 a.m. - 1:00 p.m. Visit the CMTS Exposition & Lunch at Leisure
1:15 p.m. – 2:45 p.m. Energy Efficiency and Sustainability	1:15 p.m. – 2:45 p.m. Laser Cutting Technology	1:15 p.m. – 2:45 p.m. Use of Additive Manufacturing for Medical Device Manufacturing	
2:45 p.m. – 3:00 p.m. Break			
3:00 p.m. – 4:30 p.m. Improving Workforce Productivity in the Manufacturing Environment	3:00 p.m. – 4:30 p.m. Manufacturing Innovations in the Transportation Industry	3:00 p.m. – 4:30 p.m. Innovations in Medical Manufacturing	
5:00 p.m. – 7:00 p.m. CMTS Networking Reception			

DAY ONE: MONDAY, OCTOBER 17

Monday, October 17th 9:00 AM-10:00 AM

CMTS KEYNOTE SPEAKER

WORDS TO INSPIRE INNOVATION

Kevin O'Leary



Kevin O'Leary has developed a cult following with his pull-no-punches look at the good, the bad and the ugly of business and investments. His entrepreneurial vision, investment smarts and drive to succeed are regular features on the CBC's *Dragon's Den*, BNN's *SqueezePlay* and *O'Leary Live*, CBC *NewsWorld's* *Lang & O'Leary Exchange*, and ABC's *Shark Tank*. In 1986, O'Leary co-founded *SoftKey Software Products*, and by the late 1990s, the company had acquired numerous competitors including *Compton's New Media*, *The Learning Company*, *Mindscape* and *Broderbund*. In 1999, the *Mattel Toy Company* purchased *SoftKey* for \$3.7 billion, one of the largest deals in the consumer software industry. With his assertive, opinionated nature, razor-sharp business advice and compelling personal anecdotes, Kevin O'Leary continues to impress and inspire entrepreneurs wherever he speaks.

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[Back to Schedule](#)

Session: Cost Control and Efficient Manufacturing, 10:15 AM-11:45 AM

10:15-11:00 AM “Gain Competitive Advantage by Re-Using Existing Equipment for the Manufacturing of New Products” *Konrad Konnerth*, President, Konnexio Inc.

Most manufacturing equipment was purchased and amortized for the lifetime of one particular product or a family of products. As this product is phased out, the manufacturing equipment becomes obsolete. Enormous cost savings can be achieved if this existing equipment can be used for the manufacturing of a new product. Very often, this could mean that a Canadian or US manufacturer is able to compete even with low cost competitors in Mexico or in Asia. In addition, the savings of the capital investment could allow for automation upgrades, which again reduces the production cost and makes North American manufacturing more competitive. Topics include how to: determine the feasibility of a machine upgrade, plan the upgrade with minimum disturbance to the existing production, and what to look for when purchasing new equipment to ensure that this equipment can be upgraded easily.

11:00-11:45 AM “Empowering Product Designers and Engineers to Save Time and Money with Real-Time Simulation” *Bob Williams*, Simulation Application Engineer, Autodesk Inc.

Recent technology advances that enable manufacturers to leverage real-time simulation and fully realize simulation-driven design is the focus of this presentation. Case study examples of Canadian companies that have adopted real-time simulation technology to perform an initial simulation on the most complex part design in seconds will be cited. Designers and Engineers can use real-time simulation technology to accurately discover such variables as fill pattern as a function of time, weld lines, sink marks, pressure required to fill a part, and pressure distribution across a part. The speaker will discuss the benefits of performing accurate, real-time simulation throughout the design process to reduce the need for costly mold rework and physical prototypes, minimize delays associated with removing molds from production, and get innovative products to market faster.

[Back to Schedule](#)

Session: Energy Efficiency and Sustainability, 1:15 p.m.-2:45 p.m.

1:15-2:00 PM “Beyond Energy Efficiency to Net Zero Energy (NZE) Buildings” *Steve Melink*, PE, President, Melink Corporation

This presentation will cover many of the energy conservation, energy efficiency, and renewable energy strategies and technologies that made NZE possible at the Melink HQ. It will also cover the human/social requisites of pursuing such radical change, ie. importance of leadership and culture. Moreover, Steve will provide a cost/benefit analysis that shows building owners, architects, engineers, contractors, and facility managers a bigger picture than just energy savings and simple payback. He believes a more holistic approach toward justification will help mainstream NZE buildings going forward. Overall, this case study will empower attendees to think and act boldly when designing new and upgrading existing facilities.

2:00-2:45 PM “Lean and the Triple Bottom Line: People – Planet – Profit” Juergen Boenisch, Ph.D., President, JBEELINE Consulting Inc.

This presentation will cover the application of Lean and Supply Chain Tools to achieve the Triple Bottom Line: People – Planet – Profit. The main focus in Manufacturing is still on Profit and Cost reduction, but environmental concerns and regulations make it necessary to reduce the environmental footprint and energy consumption. Both aspects are difficult to sustain if the People aspect is neglected. Juergen will cover with examples the three Triple Bottom Line aspects and how they can work together in harmony, while at the same time creating innovative solutions that make the business more profitable. “Significant Improvement can only be achieved by collaboration and by questioning the obvious!”

[Back to Schedule](#)

Session: Improving Workforce Productivity in the Manufacturing Environment, 3:00-4:30 PM

“Productivity Enhancement and Technology Adoption: A Principle-Centered Leadership Approach” Mave Dharlwal, MBA, PMP, Operations Manager, Northern Alberta Institute of Technology (NAIT) Shell Manufacturing Centre and *Stewart Cook*, Chair, NAIT Sandvik Coromant Centre for Machinist Technology

Productivity enhancement initiatives don’t fail, go over budget or fall behind schedule due to lack of technical skills in our staff. In most cases these kinds of challenges occur due to lack of people skills that fail to lead by example and get buy-in from all the stakeholders.

This interactive presentation will include: Major pitfalls that must be addressed in order to sustain long-term success, Leadership attributes which are required in today’s organizations, and Strategies to integrate leadership, staff development and technology adoption in order to manage productivity enhancement project scope while satisfying stakeholder needs.

Upon completion of this session, attendees should be able to demonstrate awareness of typical productivity enhancement and technology adoption pitfalls, improve their leadership skills and develop interdependent teams, and manage project scope that includes leadership, staff development and technology adoption.

5:00-7:00 PM CMTS Networking Reception

[Back to Schedule](#)

DAY TWO: TUESDAY, OCTOBER 18

APMA Automotive Summit, 9:00-10:00 AM



Moderator: John McElroy

Born into an automotive family, John McElroy took his first plant tour when he was only six years old. Reading every book about cars he could obtain led to an understanding of automotive engineering principles. He succeeded in amateur road racing, gained valuable insight as an hourly UAW employee while in college, and eventually became an automotive journalist. His spent five years as Detroit editor for Road & Track magazine, and has been a regular guest on ABC World News Tonight, CBS News and NBC Nightly News.

Today, in addition to hosting the Emmy Award-winning television program Autoline, John McElroy hosts Autoline Daily, the first webcast of industry news and analysis, and broadcasts five daily radio segments on the CBS affiliate in Detroit. His unique insight is highly valued by manufacturers and suppliers both inside and outside the automotive industry.

Panelists:



Joseph P. Loparco
Co-President, AGS Automotive Systems and Tiercon Corp.

Joseph P. Loparco currently serves as the 2011 Chairman for the Automotive Parts Manufacturing Association (APMA) and is co-president of AGS Automotive Systems and Tiercon Corp. His expertise includes providing investment, advisory and restructuring services to numerous clients through J2 Management Corp. Previously, Joseph P. Loparco has also shared 12 years with IBM Canada in a variety of roles involving numerous strategic initiatives and acquisitions.



Jeffrey D. Trumble
Chief Executive Officer, Trumble Inc.

Jeffrey D. Trumble has more than 30 years experience in Manufacturing Operations, Quality Systems, and Engineering and Testing in automotive and related industries. He is a Certified Six Sigma Blackbelt with detail-oriented, data-driven problem solving skills aimed at reducing variation and combining information technology with the factory floor to achieve proactive process control.



James C. Phillips
Senior Partner - Operations Expertise Inc. (O.E. Inc.), Managing Partner - Innovative Systems (Inno-Sys)

Through his career in the North American automotive industry in line and senior management roles in operations, purchasing, quality, engineering, project management, and accounting, James C. Phillips has viewpoints as both a vehicle manufacturer and a Tier 1 supplier. He has extensive experience in the development of effective business processes, the application of TQM and Kaizen, and is a strong advocate of the application of Value Chain Management.

[Back to Schedule](#)

[Session: Machining Technology & Trends, 10:15-11:45 AM](#)

10:15 AM-11:00 AM "CNC Grinding...The Domestic Solution to Global Shifts in Manufacturing" John Manley, President, Machine Tool Systems Inc.

The trending North American focus toward both higher precision and complexity bodes well for shops implementing today's advanced CNC grinding solutions. CNC grinders now offer multi-axis, high speed superabrasive solutions. Together with automation, these capital intensive investments require high utilization rates. This presentation will address how to compete in the global marketplace with a focus on recent advances in cylindrical, gear, profile, and tool grinding.

11:00 AM-11:45 AM "Key Characteristics of a Production Oriented Vertical Machining Center (VMC)" William Howard, Product Manager, Makino

With over 220 - or more - manufacturers of Vertical Machining Centers (VMCs) to choose from, how does one evaluate, "narrow the field" and decide on the "right" VMC - especially for today's highly competitive, challenging production job shop environment? This presentation takes a look at several key characteristics that should be considered when selecting a VMC - and they may not be the typical attributes utilized in the past. Learn how to "look past" the clutter of traditional specifications and focus on the traits that lead to high performance for your production operation.

[Back to Schedule](#)

[Session: Laser Cutting Technology, 1:15-2:45 PM](#)

1:15-2:00 PM "Laser Cutting Considerations for First Time Buyers" Nigel King, Product Manager, Metal Forming, Elliott Matsuura Canada, Inc.

Due to the high investment cost to purchase a 2-D laser cutting system, it is important to consider all factors before making a buying decision, especially for first time buyers. Factors such as new vs. used, resale value, wattage, table size, drive system, and resonator type coupled with the application will help to ensure the right decision.

2:00-2:45 PM "Fiber vs. CO2 Laser Cutting" John Prevish, Manager of Distributor Sales & Product Applications Group, Cincinnati Inc.

Although today's 2-D laser cutting systems are primarily powered with CO2 laser, the fiber laser is slowly gaining acceptance in the marketplace with its low hourly operating costs and fast cutting speeds in thin materials. This presentation will focus on the differences between these two technologies from a cost and performance standpoint when used on 2-D laser cutting systems.

[Back to Schedule](#)

[Session: Manufacturing Innovations in the Transportation Industry, 3:00-4:30 PM](#)

3:00-3:45 PM "Laser Additive Manufacturing" *Lijue Xue, Ph.D., Group Leader, Senior Research Officer, Industrial Materials Institute, National Research Council of Canada*

Laser consolidation is a computer-aided additive manufacturing process that produces net-shaped functional parts layer by layer directly from a CAD model, by using a laser beam to melt the injected powder and re-solidifying it on the previous pass. As an alternative to the conventional machining process, laser consolidation is able to build entire parts or features on an existing part by adding instead of removing material, which results in fast delivery to market. In this presentation, functional properties of laser consolidated exotic materials (such as IN-625, IN-718 and Ti-6Al-4V alloys) will be reported. The laser consolidated materials exhibit excellent mechanical properties comparable to respective wrought materials. The examples of laser consolidation for making net-shaped functional components for aerospace applications will be reported. In addition, the applications of this technology for automotive tooling will also be discussed.

3:45-4:30 PM "New Laser Solutions for Manufacturing" *Robert Kloczkowski, Fabrication Industry Specialist, Rofin-Sinar, Inc.*

Today, the efficient manufacturing of precision 3D assemblies is a challenge that is being addressed with the use of laser work stations. The use of multiple axis work stations, robotic cells and innovative scanner technology coupled with CO2 and fiber lasers, has provided productive cutting, welding and surface modification solutions for manufacturers in aerospace, automotive and fabrication industries. Examples of these solutions have been used by automotive companies for welding of drive train components, seat brackets, bumper and panel welding, hybrid battery welding, air bag cutting and sensor welding, labeling and marking and other applications. They include: Multi-Axis Fiber Laser Work Stations, Robotic Fiber Laser Work Cells, Remote Scanner Laser Work Cells, and Laser Marking Work Stations.

[Back to Schedule](#)

DAY THREE: WEDNESDAY, OCTOBER 19

[Session: Design for Manufacturability Challenges in Medical Device Manufacturing, 10:15-11:45 AM](#)

10:15-11:00 AM "Designing to the Process Using Direct Metal Laser Sintering (DMLS)" *Chuck Hansford, Vice President, Medical, Morris Technologies, Inc.*

Additive Manufacturing can now be considered as a realistic manufacturing choice. This innovative new technology allows for unique manufacturing opportunities. The challenge now is how to design to the process. Using comprehensive design techniques Engineers and Designer are able to create geometries that aren't possible to produce in traditional manufacturing methods. Morris Technologies has been doing this for over 8 years with Direct Metal Laser Sintering (DMLS). DMLS as a manufacturing tool opens up vast opportunities for medical devices, instrumentation, and implants.

There are key aspects that have to be met to design for manufacturability using this technology. DMLS allows for freedom of design. The engineer/designer can think outside the box. Part size, part geometry, thermal treatments, and post-machining are just a few things that must be considered before parts can be manufactured. Choosing the right build orientation and other design parameters can eliminate problem such as part warping and trapping powder.

Despite the tremendous advantages of Additive Manufacturing (AM), such as, reduced lead time, less cost, and design freedom, there are some limitations. Not all parts are good fits for the technology. However, the geometries that meet the design requirements are limitless. Incorporating Additive Manufacturing as a viable manufacturing option will change how medical products will be manufactured in the near future.

11:00 AM-11:45 AM "Gaining Efficiencies and Conquering Challenges in Medical Device Design and Manufacturing" *Carla Ring Herron, Director of Business Development & Innovation Management, and Michaela Shaw, Regulatory Affairs Manager, Kangaroo Design*

Designing, as well as manufacturing medical devices should consider several stakeholders (e.g. users, buyers, manufacturers, regulatory, etc.). Which is more important at what stage? Who leads the way? When and why? How can we use this stakeholder analysis to gain efficiencies in the design and development process? We will review project planning techniques that will ensure that stakeholders are considered from design through to manufacturing. Additionally, we will speak about our experience in using risk analysis tools and techniques at various points in the process to conquer challenges and ultimately build safer, more effective products.

[Back to Schedule](#)

[Session: Use of Additive Manufacturing for Medical Device Manufacturing, 1:15-2:45 PM](#)

1:15-2:00 PM “Additive Manufacturing of Osteochondral Implants for Osteoarthritis Treatment” *Yaser Shanjani*, Postdoctoral Fellow, Multi-Scale Additive Manufacturing Laboratory, Department of Mechanical and Mechatronics Engineering, University of Waterloo

This presentation addresses the research on a novel technique that enables the treatment of osteoarthritis and repair of defective articular cartilage in the early stages of joint degeneration and prevents the need for total joint replacement. This technique includes the formation of biphasic osteochondral implants composed of a superficial in vitro cultured cartilaginous tissue and an underlying porous biodegradable ceramic bone substitute portion which is formed by Additive Manufacturing technology.

2:00-2:45 PM “The Use of Rapid Prototyping in Spinal Injury and Courtroom Issues” *Robert Zinser*, Zinser Chiropractic Clinics

Software advances in CT imaging of the spine have made the output of such imaging the equivalent of a CAD model, and thus suitable for RP. This means the technology can be used in whiplash injury cases by producing an exact replication of the human spine, graphically demonstrating osseous injury and instability that results in mal-alignment. By applying virtual design using computer software, the image is interpreted as thin horizontal cross sections. Through successive layers of liquid or powder, the 3-D computer image is transformed into a model that can be used as evidence in a courtroom or as an educational aid in a doctor's office, or as a model for training physicians.

In the latter application, RP allows for a new training tool for spine surgery residents and fellows. Surgical techniques for reduction and fixation of complex comminuted fractures of the spine, particularly the upper cervical spine, can be developed and studied for real world application. In forensic venues, RP of the spine can help juries understand the nature and extent of spinal injuries, and allow for a hands-on inspection of a victim's injuries. The future applications of the technology as an adjunct to medical imaging are virtually unlimited.

[Back to Schedule](#)

[Session: Innovations in Medical Manufacturing, 3:00-4:30 PM](#)

3:00-3:45 PM “Accessing Innovation in a Contract Manufacturing Environment” *Olivier Bataille*, President and CEO, Plexis Precision Inc.

The medical manufacturing industry is driven by innovation and regulation. Working with contractors can both help and create challenges with these drivers. While the ability for finished goods medical device manufacturers to access the process for contractors is not required at the moment, the regulation environment is heading that way. Many have looked at options to validate these processes as well as leverage the innovations available from small start ups without having control and ability to validate their processes. Often these smaller, innovative organizations are acquired by larger organizations bringing strong process control, but often losing the individual innovators in the process. This presentation will share some successful strategies to build long term collaborations and increase access to innovations.

3:45-4:30 PM “Nanomaterials in Medical Manufacturing” *Leyla Soleymani*, PhD, Assistant Professor, School of Biomedical Engineering, McMaster University

Following current advancements in materials fabrication, one can create materials in nanoscale and tune their optical, electrical and mechanical properties by manipulating their size, charge, morphology and architecture. Furthermore, the functionality of nanomaterials can be programmed by coupling them with biomolecules of the same lengthscale such as nucleic acids and proteins. Scientists and engineers have applied this size compatibility and tunability to create new and advanced medical products ranging from medical diagnosis to therapeutics systems. This presentation will focus on the current and future applications of different classes of nanomaterials in in-vivo and in-vitro diagnostics, drug delivery and implant technology

[Back to Schedule](#)