

# SOCIETY of MANUFACTURING ENGINEERS

## TORONTO CHAPTER 26

### DECEMBER 2000



<http://www.sme-toronto-26.org>

*The Potential of Mechatronics:*

## ***SENSORS: THE SOURCE OF INFORMATION***

*Jim Pierson, Pierson and Associates Ltd.*

*Wednesday December 6,  
2000, 6:00 pm*

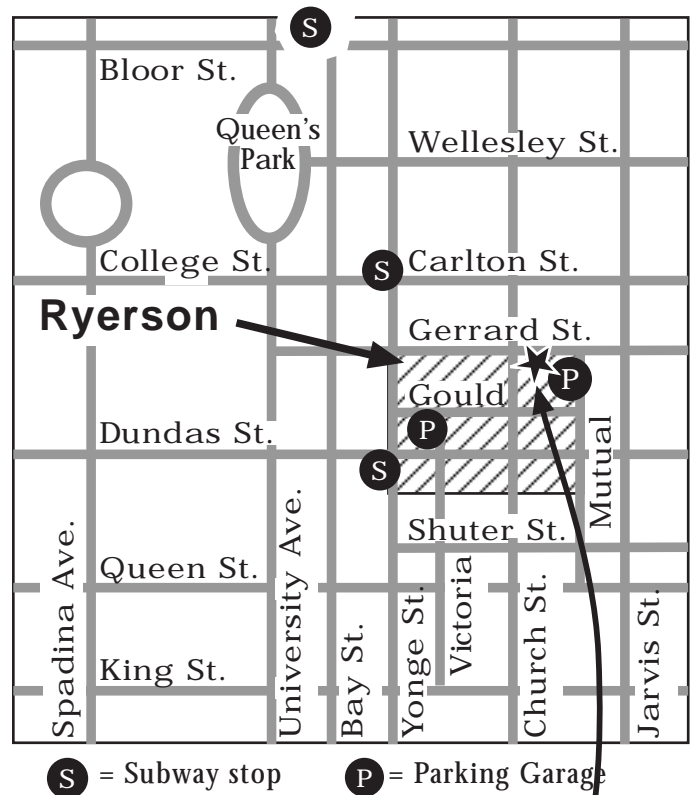
*Room T216, 87 Gerrard St. East, Eric Palin  
Hall. Ryerson Polytechnic University*

Jim Pierson of Pierson and Associates Ltd. discusses why and how measurement systems produce error and what you can do about it.

“In virtually all mechatronic systems, sensors provide the information needed to control the process. The translation from the physical world into a proportional electrical signal, upon which control systems act, is an imperfect process resulting in product or process variations.

All measurement systems are negatively influenced by various obtuse and rarely specified energy exchanges with the measurement environment causing the system output to deviate from the true value of the measureand. The difference between the perceived output and the true output is error. It is this error which produces product or process variations. Maximized product or process consistency can only be approached when measurement uncertainty is minimized.”

Jim Pierson of Pierson and Associates Ltd.  
<http://www.PiersonOnline.com>



**S** = Subway stop      **P** = Parking Garage

The web site, address above, and monthly Bulletins from the Chapter will give details. LOCATION: Rm T216, 87 Gerrard East, Eric Palin Hall, Ryerson University. There is open air parking on the south side of Gould Street and covered parking as shown on the Ryerson map at [www.ryerson.ca/tour/campusmap.html](http://www.ryerson.ca/tour/campusmap.html) Application Form See page 4.

## To Apply:

To apply, fill out the Application Form, p 4, and mail to: Pierre Perron, 80 St. Clair Ave. E, Apt 1706, Toronto, Ont., M4T 1N6, with your cheque. More information at the SME website at <http://www.sme-toronto-26.org/>

## Location and Times

The course will be held at Rm T216, 87 Gerrard East, Eric Palin Hall, Ryerson University in downtown Toronto. A light supper will be offered at 6:00 pm and the session will start at 7:00 pm. We will usually finish by 10:00 pm. Of course plant tours will have different timing.

PLEASE CHECK OUR WEB SITE FOR LAST MINUTE CHANGES! An email will be sent to all those who have already signed up.

## Executive Meetings

Upcoming Schedule 2000: all Wednesdays at 6:30 pm  
December 13  
At: AFV Multimedia  
233 Evans Avenue  
Phone: 416-239-2811

Interested parties are welcome and encouraged to join executive members at these meetings. For additional information on next meeting phone 416-467-8298 or e-mail: [heintzga@attglobal.net](mailto:heintzga@attglobal.net) or [Ken-Dante@msn.com](mailto:Ken-Dante@msn.com).

Upcoming Schedule 2001:  
PLEASE NOTE: All Executive meetings are Thursdays at 6:30 pm  
January 4  
February 1  
March 1  
April 5  
May 3

**Sign Ups Still Accepted!**

For information on books and links related to Mechatronics please see our Web site <http://www.sme-toronto-26.org/>

NOTE: Bulletin copy deadline:  
January Issue: December 10!  
February Issue: January 10.

If you need more information about this series, please call Pierre Perron at 416-944-9264 or email to [pierre\\_perron@yahoo.com](mailto:pierre_perron@yahoo.com). Please do not phone after 10 pm EDT.

# Mechatronics Topics & Schedule

4. Wednesday December 6 Sensors What can be Measured, Sources of Error, Accuracy. Jim Pierson, Pierson & Associates.
5. Wednesday January 17. Plant Tour: Robotics, Acea Robots: Analysis of a robot as a Mechatronics device and building block.
6. Wednesday, February 7 Plant Tour: Motion Devices Festo Motion devices - Motors, Pistons, Actuators, and Solenoids. Chris Kalemba
7. Wednesday, March 7. Control Systems Control Systems - Controllers, Computers and Networking.
8. Wednesday, April 4. Implementation Team Work, Project Management, Goal Setting. Pierre Perron, Team building and project planning implementation Consultant.
9. Wednesday, May 9. TBA
10. Wednesday, June 6. Summary - Panel Discussion: The Future.

Material from previous sessions is on the Chapter website at <http://www.sme-toronto-26.org>

## U of T - Students Talk by Celestica

On November 7th, 2000, we had the first of our Manufacturing Seminar Series: Celestica. A few speakers from Celestica came and spoke to us about the role of a manufacturing engineer, manufacturing as related to different disciplines and career paths in the industry. It was a very successful and informative session with lots of chatting after the talk. We also had a chance to ask many questions about manufacturing engineering and how it applies at Celestica. These seminars are a great way to make contacts and obtain first hand information on manufacturing engineering. Stay tuned for our upcoming events!"

If you've any ideas/suggestions, please feel free to email us at: [utsme@ecf.utoronto.ca](mailto:utsme@ecf.utoronto.ca) Thanks!"

## Hamilton SME Chapter 42

Allan Spence, Chair of Hamilton Chapter 42, sent the following note: "I put a link on our SME Chapter 42 - Hamilton District homepage to Toronto 26 in case some of our members want to attend Toronto events. Your members are welcome to ours too. We list them online. See <http://chapters.sme.org/042/homepage.htm>." For more information, schedules, etc., please check this web site.

# EXECUTIVE LIST

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Our continuing thanks to Professor Mark Fox, U of T, for hosting the Chapter's web site on his server at <http://www.novator.cm>

## MECHATRONICS COMMITTEE

Mechatronics Subscription	Pierre Perron	Consultant	416-944-9264	pierre_perron@yahoo.com
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**Sign Up Now!**

**Mechatronics Series Content:** Check our Web site for material from past seminars. We will be adding more through out the year. But we will probably remove it next year. So if it's of interest take a copy now. Even though the machine tool industry in North America is on the decline you might check out some of the ideas that came out of the first session in terms of making a modern lathe. Links to Mechatronic program content is at <http://www.sme-toronto-26.org/pages/MechatronicsTOC.htm> (case-sensitive - watch your typing!)

## Review: 3rd Meeting: Two Outstanding Presentations

(See our Web page for complete presentations given at these sessions: <http://www.sme-toronto-26.org/> )

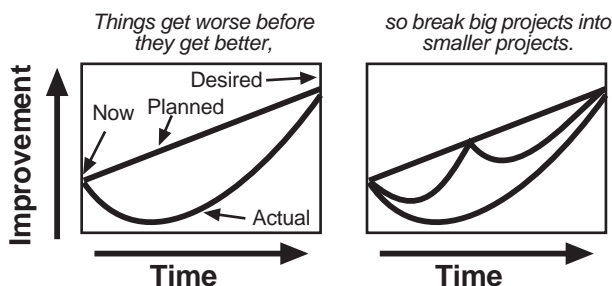
### Duncan McLeod - President DBM Systems

Duncan stressed two points from which he built the rest of his presentation.

- The importance of clear goals understood by all.
- The importance of a business case for controlling required resources throughout the project

To accomplish this he uses a tool called Model Works. He builds a simple interactive hands-on model using lego and play dough. The managers responsible run the line to make sure that all bugs are worked out and everybody knows where they are going.

- Be certain that all who must contribute understand the value
- Choose smaller projects with earlier payoff where possible.



### Solid Works By Javelin Technologies

A very clear and professional presentation by John Carlin, Rob Yule, and Joseph Vera.

The three key messages were:

- Use a tool (Solid Works) that is easy enough to use so that everybody who needs to can use it and understand it - even casual users.
- Use a tool that is complete. A tool that uses the same geometry from design through every aspect of manufacturing.
- Use a tool (Solid Works) which captures the design intent as a series of parameters and relationships. Changes can then be made to the driving parameters and all the down stream work can be regenerated rather than redone. This saves enormous amounts of time and reduces errors.

Solid Works came across as a very complete package with many modules for direct output to manufacturing.

Please see the web site. We will put their presentations on line as soon as we can.

George Heintzman

# Many Thanks to our BULLETIN PUBLICATION and WEB SITE SPONSORS:



Information and links at: <http://www.sme-toronto-26.org/>



## LOUIS PAPP APPOINTED AS NEW EXECUTIVE DIRECTOR OF THE CTMA

On November 6, 2000, Louis Papp assumed his new responsibilities as Executive Director to represent the Canadian Tooling & Machining Association both nationally and internationally to allied associations, government representatives, industry contacts and the general public. Membership growth, marketing, development of position/policy papers and trade show participation are also included in his portfolio.

Mr. Papp is President of Manufacturing Advisory Services in Windsor, Ontario and Oak Park, Michigan. He has held senior positions in manufacturing companies in the U.S., Canada and England. He serves as a Director of both the Society of Manufacturing Engineers and its Education Foundation and was elected an SME Fellow in 1996.

## PLANT MAGAZINE GIVE SME MECHATRONICS SERIES A BIG WRITE UP!

Lisa Wichmann, Associate Editor, in the October 23, 2000, issue of Plant Magazine has a two-page spread on the Mechatronics Series currently underway and organized by this Chapter. "The study of mechatronics is emerging as an educational field unto its own," says Ms. Wichmann. "As plant machinery is ramped up with more complex controls, manufacturers will have to take a serious look at mechatronics training." We agree! See the Plant web site, <http://www.plant.ca>, and the Chapter web site, <http://www.sme-toronto-26.org>, for more information and references.

## SME GIVES C\$340,000 TO EngTech AT GEORGIAN COLLEGE

The Education Foundation of SME headquarters in Dearborn, Michigan has awarded C\$340,000 to help design and operate EngTechInc 2000, a one-of-a-kind "company" that will allow students in Georgian's engineering technology division to design, produce and sell a product. You'll find a full write up by Joe Terret in the October 9, 2000 issue of Plant magazine. <http://www.plant.ca>

Detach the form below and send with cheque or money order made out to **SME Toronto Chapter 26 Mechatronics**, to:  
Pierre Perron, 80 St. Clair Avenue East, Apt 1706, Toronto, Ontario, M4T 1N6 \* Membership enquiries please phone 416-402-3146.

### REGISTRATION FORM - MECHATRONICS SERIES 2000-2001

Please keep a copy for your records. Please photocopy for additional registrations.

DATE: \_\_\_\_\_  
 NAME: \_\_\_\_\_  
 TITLE: \_\_\_\_\_  
 COMPANY: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_  
 CITY: \_\_\_\_\_  
 PHONE, HOME: \_\_\_\_\_ OFFICE: \_\_\_\_\_  
 FAX: \_\_\_\_\_ E-MAIL: \_\_\_\_\_

SME Member \$450\*  Non-member \$550\*  \*\* Student Members \$95 Amount Enclosed: \$ \_\_\_\_\_

\*Fee is prorated for late signups - for example, remaining nine sessions: members \$320, Non members \$470, Students \$72. The price for guests for one evening is 65\$.

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