



ASSOCIATION OF PROFESSIONAL GEOSCIENTISTS OF ONTARIO

@ University of Waterloo

*Building Strong Connections*



**JOIN US!**

**November 19, 2014**

**APGO's Networking Event in Waterloo**  
**Hosted by Doug Cater, P.Geo.**

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The Association of Professional Geoscientists of Ontario (APGO) is very pleased to partner once again with University of Waterloo to host a networking event on its campus. We cordially invite professional geoscientists, geoscientists-in-training, geoscience students, the academia, and other industry stakeholders in South West Ontario to join us.

**Featured Guest Speaker: Dr. Maurice Dusseault**  
***"The Changing Energy Scene in Canada"***

Wednesday, Nov 19, 2014

5:30 p.m. to 7:00 p.m. (APGO Update and Guest Speaker's Presentation)

Centre for Environmental and Information Technology Building (EIT)

Room EIT 3142

200 University Avenue West

Waterloo, Ontario N2L 3G1

***Social Mixer @ 7:00 p.m.***

All attendees are invited to join us at the Graduate House for beer and hors d'oeuvres at 7:00 p.m. until 8:00 p.m.

**REGISTRATION**

Attendees: \$15

Geoscience Students: Free

**Visit [www.apgo.net](http://www.apgo.net) to register online.**

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## APGO's Networking Event in Waterloo

Hosted by Doug Cater, P.Geo.

November 19, 2014

## Guest Speaker: Dr. Maurice Dusseault "The Changing Energy Scene in Canada"

### About Dr. Maurice B. Dusseault, PhD, P.Eng.

Dr. Dusseault is a faculty member of Earth and Environmental Sciences Department at University of Waterloo. He carries out research in coupled problems in geomechanics including thermal and non-thermal oil production, wellbore integrity, deep disposal technologies for solid and liquid wastes, hydraulic fracture mechanics, CO2 sequestration in saline aquifers, shale gas and shale oil mechanics, and compressed air energy storage in salt caverns. He holds 10 patents and has co-authored two textbooks with John Franklin (former ISRM President, deceased 2012) as well as 520 full text conference and journal articles. Dr. Dusseault works with governments and industry as an advisor and professional instructor in petroleum geomechanics. He was a Society of Petroleum Engineers Distinguished Lecturer in 2002-2003, visiting 19 countries and 28 separate SPE sections, speaking on New Oil Production Technologies. He teaches a number of professional short courses in subjects such as production approaches, petroleum geomechanics, waste disposal, and sand control. He presented in over 21 different countries in the last 12 years.

#### Current projects are focused in these areas:

- \*Hydraulic fracturing of naturally fractured rock masses in differential stress states
- \*Work, energy and stress-strain responses of deep stressed rock masses (reservoirs, mines)
- \*Rock-cement-casing interaction and gas seepage along oil and gas wells
- \*THM coupling in naturally fractured rock masses
- \*Monitoring deformation in rock masses using surface and subsurface methods
- \*Storage of energy from stochastic renewable sources as compressed air in dissolved salt caverns

### "The Changing Energy Scene in Canada"

Massive shale gas development is occurring in the United States and Canada. USA shale gas imports to Ontario started in 2012, and eventually will replace natural gas from Western Canada. British Columbia is looking to permit up to four pipelines from NE BC and NW Alberta to the Kitimat BC area to supply four LNG plants to export natural gas to the Orient. Clearly, the energy world is changing, and the level of drilling and hydraulic fracturing to produce shale gas is an order of magnitude greater than conventional natural gas development.

#### The talk will address these general questions...

- \*What is shale gas and why should I care?
- \*What is the development approach for shale gas?
  - Horizontal wells
  - Multi-stage hydraulic fracturing
- \*What happens in fractured shale when we do hydraulic fracturing?
- \*Is hydraulic fracturing dangerous or environmentally damaging?
- \*What are the real risks inherent in oil and gas development?