

## RECIPROCITY WITH MICHIGAN

The plan announced by PEO President David Adams, P.Eng. (“Great expectations,” *Engineering Dimensions*, July/August 2008, p. 3), lists “Reciprocity

membership with Michigan, provide means for graduates to write US engineering practice exams.”

It is hard to understand why this is considered an issue at all for PEO, never mind one that needs to be urgently taken on by PEO’s leadership.

I have been registered as a professional engineer in Michigan since October 2003. Michigan recognizes any Canadian accredited four-year engineering degree as meeting its educational requirements. All that a Canadian graduate needs is professional references and to sit the FE and PPE exams just like any US applicant. These exams are not nearly as difficult as many seem to think. I passed both on my first try over 20 years after graduating from university and with nothing like the six months of preparation I had been told I needed. I know at least six other engineers in Essex County who are registered in Michigan, several for more than 20 years. As far as I can tell, Michigan will accept references from P.Eng. holders as equivalent to references from US PE holders. (My engineering degree is from Ireland and after getting it evaluated by one of the recommended accreditation companies, it was found to satisfy Michigan’s educational requirements.) There are no significant obstacles in the way of any Canadian-educated engineer getting registered in Michigan beyond having to travel and stay for a night or two in a hotel. In addition, any Michigan PE can get registration in Ohio (and probably a good number of other states) by virtue of being a Michigan PE, a practice called registration by comity and which seems to be allowed by most states.

It would appear that it is Michigan engineers who are at an insuperable disadvantage in Ontario. PEO registration requires Canadian citizenship or legal residency, whereas Michigan doesn’t require citizenship or residency in the state for eligibility. Most US state licensing boards don’t seem to have a residency requirement—the State of New York is one exception to this when I last looked, possibly because it might be considered an impediment to interstate commerce and therefore unconstitutional.

Given that it isn’t any more difficult for a Canadian engineer to become registered in Michigan than for his or her US counterpart, I wonder why it is included in the president’s plans. What seems actually to be necessary to achieve reciproc-

ity is for PEO to make it easier for Michigan engineers to become registered in Ontario. This might require Ontario to move to the US exam system and to drop the residency requirement in order to meet the comity requirements in the US. In my personal opinion, this would be no bad thing, creating a uniform continental market for professional engineers. It would also promote the introduction of a master’s degree requirement for professional registration, which the US states are actively debating and which is being adopted in Europe.

However, the inclusion of the issue in the 2008 plans does make you wonder where PEO’s leadership is getting its advice from. Anyone who researches the matter should see it is Michigan that needs Ontario to reciprocate, not the other way around.  
John Kehoe, P.Eng., Tecumseh, ON

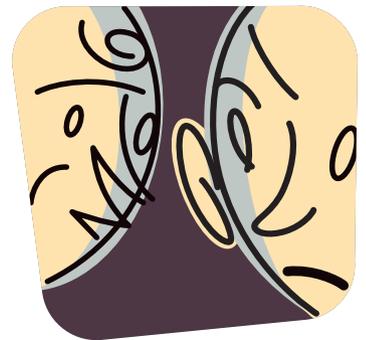
## GW DEBATE

Why global warming occurs can be debated in *Farmer’s Almanac* (correct 80 per cent of the time), which predicts a decade of intense cold winters, or on the PEO forum where the majority reject human interaction as a significant factor.

However, as engineers, the root causes of global change, such as smog and greenhouse gases, should concern us; just as we have for several millennia faced

flood and droughts. We can use wind and solar power, when these exist, but know better than to depend on any sole source of power.

Member letters to *Engineering Dimensions* on laying blame for global warming are thus unfortunately misdirected. Change has been defined as the only constant in our lives. Thus, engineers strive to improve levees, build more resilient infrastructure and design clean, efficient engines.



Communication between engineers on how to transfer energy more efficiently is useful; assigning blame is not. Those who follow religion may be interested that “while Adam and Eve lived in the temple of treasures, the Nephilim inhabited the Earth and their sons became workers of metals and their daughters became angels” (from Book of Enoch, a lost book of the Old Testament).

Peter Broad, P.Eng., Toronto, ON

## PROPOSED PD SYSTEM

I, along with other chapter chairs and vice chairs, were asked to review and comment on a PEO position paper on a proposed professional development system, which details a mandatory requirement for annual self-declaration of competence for all members. I responded and commented on a few points, which I would like to share with you. I think that although this mandatory annual self-declaration mechanism seems to be necessary to assure that practising members stay current, I do not believe it is sufficient for PEO to meet its public interest protection mandates.

In my opinion, PEO is just transferring this responsibility to its members in order to archive written proofs on file, in case something happens. But will this method of PEO relying on members' self-declarations be practical if an engineering deficiency happens or some public interests get lost or damaged? I think the answer to this question is definitely a big no.

We need to have a system in place that not only makes use of members' self-declarations, but also has a mechanism to evaluate and validate those declarations. It is like the academic requirements of the PEO licensure process that have a well-defined series of procedures to



assess and validate those requirements. Can PEO only rely on self-declarations of the applicants to confirm they have a bachelor degree of engineering?

We need to define and develop a process that can appraise and validate each practising member's professional development through industry and market-recognized upgrades, as well as professional development certifications and training programs. We also need to assess their engineering work summary reports for the related fields of their practice within a defined time frame—for instance, a three- or five-year time frame in which members need to take some courses or certifications, in addition to their practical work experience in their related fields.

I know this means a lot of additional work for PEO and probably a need for another committee to collect and validate this sort of information, and perhaps a need for additional experience interviews. But if we want to do something in this regard, it should be done properly. Changiz Sadr, P.Eng., vice chair, PEO Willowdale/Thornhill Chapter

## A MORE COMPLEX PROBLEM

It is rather disappointing that the letter from Mike Wierdsma, P.Eng., is so prominent (*Engineering Dimensions*, September/October 2008, p. 72). Fist-pounding cartoon, bold, red-letter title, "A fear-mongering religion," and green background make it stand out to the reader.

I am old enough to remember the fear mongering about overpopulation and also studies in the '70s about the end of cheap fossil fuels and its serious impact on agriculture and humanity. Just because we are still able to feed our growing population and we still have *relatively* cheap fossil fuel does not mean the early warnings on these future issues were wrong. Engineering is about solving very practical problems. Overpopulation may not have destroyed the world just yet; however, it has resulted in numerous advances in agriculture and innovation in water purification and treatment necessary for much of our future population.

Climate change is a complex problem. It is well worth visiting the site Lee Norton, P.Eng., includes in his letter, "Peer-reviewed theories," (*Engineering Dimensions*, September/October 2008, p. 74) at [www.realclimate.org](http://www.realclimate.org). You can read also that wine was produced in England before the 13th century (vineyards were recorded in the *Doomsday Book* compiled in 1086). There is a 2006 entry at [www.realclimate.org](http://www.realclimate.org) that indicates if English vineyards were a good proxy for global warming, England is warmer now: "Since 1977, a further 200 or so vineyards have opened (currently 400 and counting) and they cover a much more extensive area than the recorded medieval vineyards, extending out to Cornwall, and up to Lancashire and Yorkshire where the (currently) most northerly commercial vineyard sits." But they are unlikely a good indicator.

Nonetheless, there is no argument that there have been warm (and cold) periods in the past. The concern to me and others is the extent to which our interaction with the world causes a rapid change in our climate that affects our ability to function as a global society. I believe there is enough science to conclude we must be concerned. There are also indicators from early programs in Europe that reducing their use of carbon-based fuels by using alternatives can be done without dire serious economic impact ([www.eurec.be](http://www.eurec.be), [www.nrel.gov/analysis/forum/docs/rick\\_sellers.ppt](http://www.nrel.gov/analysis/forum/docs/rick_sellers.ppt), [www.energyblueprint.info/449.0.html](http://www.energyblueprint.info/449.0.html)).

Alternative approaches (including being more efficient with what we do use) provide a wealth of opportunity for engineers to be innovative and create jobs to avoid any depression so often used to justify doing little or nothing. Hey, if not for the climate, why not create jobs and provide a more stable base for our future economies by reducing dependency on oil?

George Moon, MSc, P.Eng., Aurora, ON

## [ LETTERS ]



### EXPERT TALK

A debate without end.

Why should anybody believe what engineers are saying...or

for that matter, any expert? Professor Vanderburg at University of Toronto expressed it quite appropriately: "Furthermore, because there is no science of the sciences, no comprehensive diagnosis of any situation can be made, with the result that the chances of good counsel coming from experts who are divided among themselves is not very great. Each expert approaches the situation with the pre-judgement of the world that comes from having grown up in a particular culture, professional training and experience."

A woman from the same university, Professor Ursula Franklin, gives us some food for thought in her Massey lecture, *The Real World of Technology*: "We cannot walk before we toddle, but we can toddle much too long if we embrace a lovely model that's consistent, clear and wrong."

This lecture should really be required for all engineers. But where would we experts be if we talked in everyday language? If people could actually understand what we are saying?  
Dieter Leidel, P.Eng., Barrie, ON

### ACCEPT PROVEN SCIENCE!

It's good that there is a lot of interest with respect to global warming and climate change. It's bad that accepted science is not used in all discussions. Let's review what we know.

From coring Antarctic ice and examining the bubbles of trapped air, we are able to determine the carbon dioxide and temperature when that level of ice froze. From this information, we know that in the last 650,000 years we have had seven ice ages that each have occurred over periods of roughly 100,000 years. During past ice ages, we know there was approximately 180 ppm of carbon dioxide in the atmosphere. During past non-ice age warmer periods, or inter-glacial periods, the carbon dioxide climbed 100 ppm to about 280 ppm. We have been burning coal for 200 years and oil for about 100 years. In this time, we have increased the carbon dioxide content of our atmosphere by roughly another 100 ppm (387 ppm at present)—the same as the difference between past ice ages—but we have done this in 200 years of the industrial revolution, not several thousand years as in the past. Something is different, and the only major difference discovered to date is our burning of fossil fuels.

We know scientists have examined the sun to see if it is giving us more radiation, more energy. It is not. Irrigation engineers have long been using light meters to measure the light received from the sun when designing their systems. Gerald Stanhill was the first to notice the decrease in solar energy when he went back to Israel in the '80s and checked his earlier measurements from the '50s. He measured 22 per cent less sunlight reaching Earth. He published his findings and was first ignored. Global dimming wasn't accepted until 2002, when NASA launched the Aqua satellite designed to study our atmosphere and started a four-year, \$25-million project in the Maldives to measure the atmosphere there and concluded that the cause of the dimming was our pollution from burning fossil fuels. The Maldives were chosen as the northern islands receive considerable pollution from India, whereas the southern islands receive relatively pristine air from the Antarctic.

We now know that global dimming has been cooling our Earth and masking the full effect of the increase in our carbon dioxide greenhouse gas emissions. If our pollution was miraculously cleaned up, our global mean temperature is calculated to jump from 0.8 C to 1.8 C.

We know that, to date, climate scientists have consistently underestimated the effects of global warming. The debate today is on what we have to do and how fast we must act to prevent a climate change catastrophe.

Lee Norton, P.Eng., St. Catharines, ON



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Address letters to [jcoombes@peo.on.ca](mailto:jcoombes@peo.on.ca).