

# The TISP Canada Courier #13



September 28, 2016

## Shining Lights on Innovative Ideas in Peterborough

The *Peterborough Examiner* highlighted the 2016 Engineering Challenge at the local Evinrude Centre. Some observations of their reporter and photographer are shared on these pages.

Back in March, 25 teams with 100 bright young minds from the Peterborough area competed at the Evinrude Centre for the 2016 Engineering Challenge.

This year's challenge had an powerful theme: solar energy. The students from local high schools were challenged to design and build small solar powered cars, equipped with just a small electric motor and

two solar panels, and built with household items, such as straws and popsicle sticks.

At the end of the day the judges declared a team of four Grade 11 students from Holy Cross High School the winners: Maria Conlin, Sarah Cowen, Ronan Sampson and Ethan Murphy.

Ethan recalled that the important thing for the group was to ensure the car stayed on track and gathered as much power as possible as it went along the track. "We gripped the wheels so it wouldn't slip or anything. We made sure it would stay straight and steer itself." They also used a pitched roof design for the solar panels to capture more light from the overhead lights of the track.

The judges also announced an award for the most innovative design. That award went to a Grade 12 team from St. Peter Secondary School, made up of Nic Bryenton, Laura Connolly, Regan Mahoney and Julia Mandeljc. Their car was built with egg crates and sponges, and it had a propeller at the back, too.

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## TISP Reports from the Regions

These columns summarize recent work, upcoming events as well as trials and accomplishments of TISP volunteers from across Canada. Reports are also filed at [www.tisp.ieee.ca](http://www.tisp.ieee.ca).

### British Columbia

TISP volunteer Elroy Switlishoff reports that his group has been successful in applying for an IEEE Canadian Foundation grant to fund part of their upcoming robotics competition.

Elroy also gave an "Engineering as a career choice" presentation to 12 Grade 10/11 students from Nelson's LV Rogers Secondary School on May 19, and prepared workshop for three groups of 20 Grade 4 to 6 students on June 16.

For information contact Elroy at [a7b60338@telus.net](mailto:a7b60338@telus.net).

### Alberta

Anis Haque reports ongoing preparations for an event in Grande Prairie, targeting 740 students during five days; funding is secured from various sources, including second-hand book sales, industry donations and IEEE Section support. Anis is also in discussion with the

NWT Ministry of Educations about activities with First Nations students and parents. The focus is on engineering literacy.

For information contact Anis at [anis@ucalgary.ca](mailto:anis@ucalgary.ca)

### Quebec

The TISP team of the IEEE Montreal Section has successfully sealed a partnership for STEM activities and workshop plans with the Montreal Vocational Academy Pearson Electrotechnology Centre (PEC) which is part of the Montreal English School Board (LBPSB).

The Section also welcomes Nicolaos Rousos as the new chair of their TISP Committee.

For information contact Nicolaos at [nroussos@ieee.org](mailto:nroussos@ieee.org).

### Ontario

Wolfram Lunscher reports that the Ottawa Section's application for IEEE-EPICS funds has met with success. It was awarded \$28,000 for their STEM-related project work: solar-powered showers for the Christie Lake Kids summer camp.

For information contact Wolfram at [wlunscher@gmail.com](mailto:wlunscher@gmail.com)

TISP volunteer Patrick Finnigan presented an Engineering Process

chart to 20 STEM coordinators. Each coordinator is responsible for 60 schools. Patrick is also representing the TISP Canada Committee at the international level as part of an IEEE-wide TISP round-table to explore new opportunities for TISP over the next few years.

For more information contact Pat at [pjfinnigan@gmail.com](mailto:pjfinnigan@gmail.com)

Murray MacDonald of the IEEE London Section is organizing two activities for October and November. They include a presentation on the "Tall Tower Challenge" with Pre-Service Teachers at Althouse College of Education, and a "Math Day" at the Thames Valley District School Board, with the "Binary Numbers" lesson plan for six groups of about 20 Grade 6 students.

For information contact Murray at [murraymacdonald@rogers.com](mailto:murraymacdonald@rogers.com)

### TISP Canada

In July, the TISP Canada Committee honoured Mr. Doug Gorham, retiring head of IEEE's Education Department in the US, and long time TISP supporter, with a Certificate of Appreciation, along with our good wishes for many happy years in retirement.

# Niagara Region Science and Engineering Fair 2016

The Fair is celebrating over 50 years of science excellence in the Niagara region of Ontario. IEEE is offering two prizes. Dave Hepburn has been volunteering as a judge for many years.

Students have been competing in the Niagara Regional Science and Engineering Fair since 1962. Close to 200 schools are encouraged every year to participate in the fair, and the competition is stiff!

As a rule, students who win at their school fair progress to the Niagara Regional Science and Engineering Fair. They spend a good part of the year preparing for the Fair.

On awards night, students receive trophies and purses that are donated by local businesses, philanthropists, and organization such as IEEE. The best projects are selected and funds are provided to send representatives from the Niagara Region to the Canada-wide Science Fair.

On Wednesday April 13th, 2016 the 54th annual NRSEF awards ceremony took place. Among the recipients: Nicolaas Doyle, Grimsby Secondary School, and Daniel Gerkin, Sir Winston Churchill

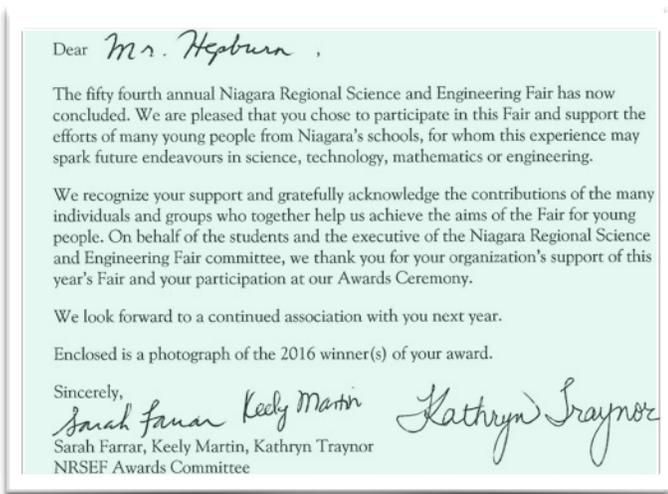
Secondary School, winners of this year's IEEE Prize for Basic Electricity and Magnetism.

Nicolaas produced an erudite demonstration of "Microporous Silicon as an Alternative Battery Electrode", while Daniel had put together a neat demonstration on "The Study of the Second Law of Thermodynamics." Looking at both projects, Dave Hepburn remarked: "I get more feedback from how well these fellows defend their demonstrations than from the demonstration itself, and both were very cogent."

Before the night was over, Daniel Genkin had received two prizes, and Nicolaas Doyle got no less than four, one of which was a free trip to Montreal to take part in the Cross-Canada Science Fair runoff. Congratulations to both, and "bon voyage" to Montreal! 📌

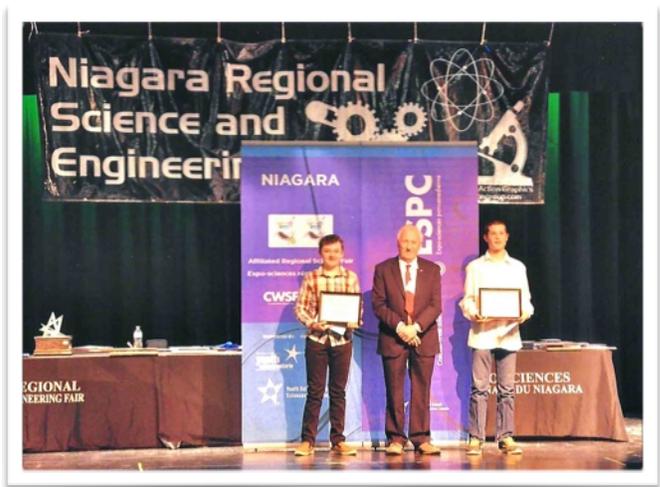
For further information about the NRSEF, contact Dave Hepburn at [dehepburn@sympatico.ca](mailto:dehepburn@sympatico.ca)

Photo credit: Dave Hepburn



Politeness is alive and well, as a letter of appreciation from the Awards Committee of the NRSEF attests.

Photo credit: Dave Hepburn



Taking centre stage are the proud IEEE prize recipients at this year's Fair. The prizes were presented by Dave Hepburn.



Photo credit: C. Skarstedt



Photo credit: C. Skarstedt

Last minute adjustments to the construction and fine-tuning of the electrical system ensured that this entry is "ready to roll."

The solar car entries for the 2016 Engineering Challenge competition came from 25 high school teams in the area.

**"Shining Lights on Bright Ideas"** (continued from page 1)

Being different from the competition mattered for Bryenton, the team's captain. He explains: "We're all working with basically the same materials, so we're all probably going to end up around the same end result in terms of how well it works. We just wanted to do something that no one else was doing, just for fun, to innovate and to learn from our experience."

His team mate Regan said that trying to win the innovation prize was in their minds all along. Hence they focused on the design to separate the team from the rest of the competition.

"We took a bit of a different approach by making a propeller at the back, so our motor propels it using air energy instead of just attaching it to the wheels like most teams are doing," she said.

Other teams relied on their inspirations relatively late in the competition. Grade 12 Lakefield College School student Luke Torsher recalls that his team had originally shaped the solar panels into a W-shape. Then they changed the plan halfway through

the competition. "We realized that (the original plan) wasn't making much of a difference," Luke explained.

"We then realized that because there so much light, we can take advantage of that by angling it, so we can get light from the front, back and right overhead. So that's why we came up with a kind of teepee design. Because it's solar power, you don't really have too much power to work with," he said.

Dan Manns, who was chairman of the event in Peterborough, pronounced the day a success, thanking all the participants and scores of volunteers. He noted that this year was quite different in theme and scope. Examples of items built in past competitions include bridges made completely out of popsicle stick, Mars lander models, and a device to keep an egg safe when dropped on the floor.

"There's a lot of great creative ideas. This is the first time we've done this particular competition. I think it's gone really well," Dan Manns said with obvious pride in everybody's accomplishments.



Photo credit: C. Skarstedt

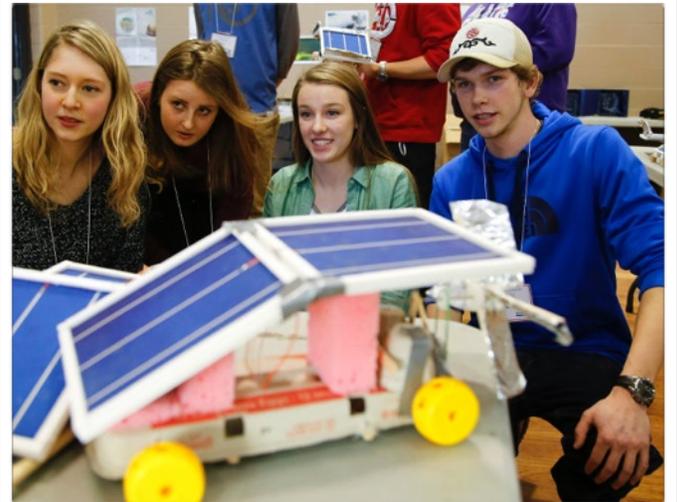


Photo credit: C. Skarstedt

Teacher and student preparing the array of containers with 1,2,4,8 and 16 ping-pong balls for the binary number lesson.

Anis engaged in binary number exercises with the “younger set” in a Calgary classroom.

Sean Dunne has been championing the TISP cause at the IEEE Peterborough Section for years, and he and his colleagues saw the annual Engineering Challenge as an opportunity to contribute their skills and experience as professional engineers to the event.

Many proud faces and the great public interest are a testimony to their efforts! 🇩🇪

For further information of the Engineering Challenge contact Sean Dunne at the IEEE Peterborough Section at [sean.dunne@ieee.org](mailto:sean.dunne@ieee.org).



Photo credit: C. Skarstedt

There are always many volunteers who make successful events happen. This picture shows the group that supported this

year’s Engineering Challenge in Peterborough, Ontario. Congratulations to all!

## Have you tried [www. tryengineering.org](http://www.tryengineering.org) yet?

IEEE's web site for engineering education and training resources has a wealth of resources for teachers, students and parents. There are new activities and lesson plans. Check them out!

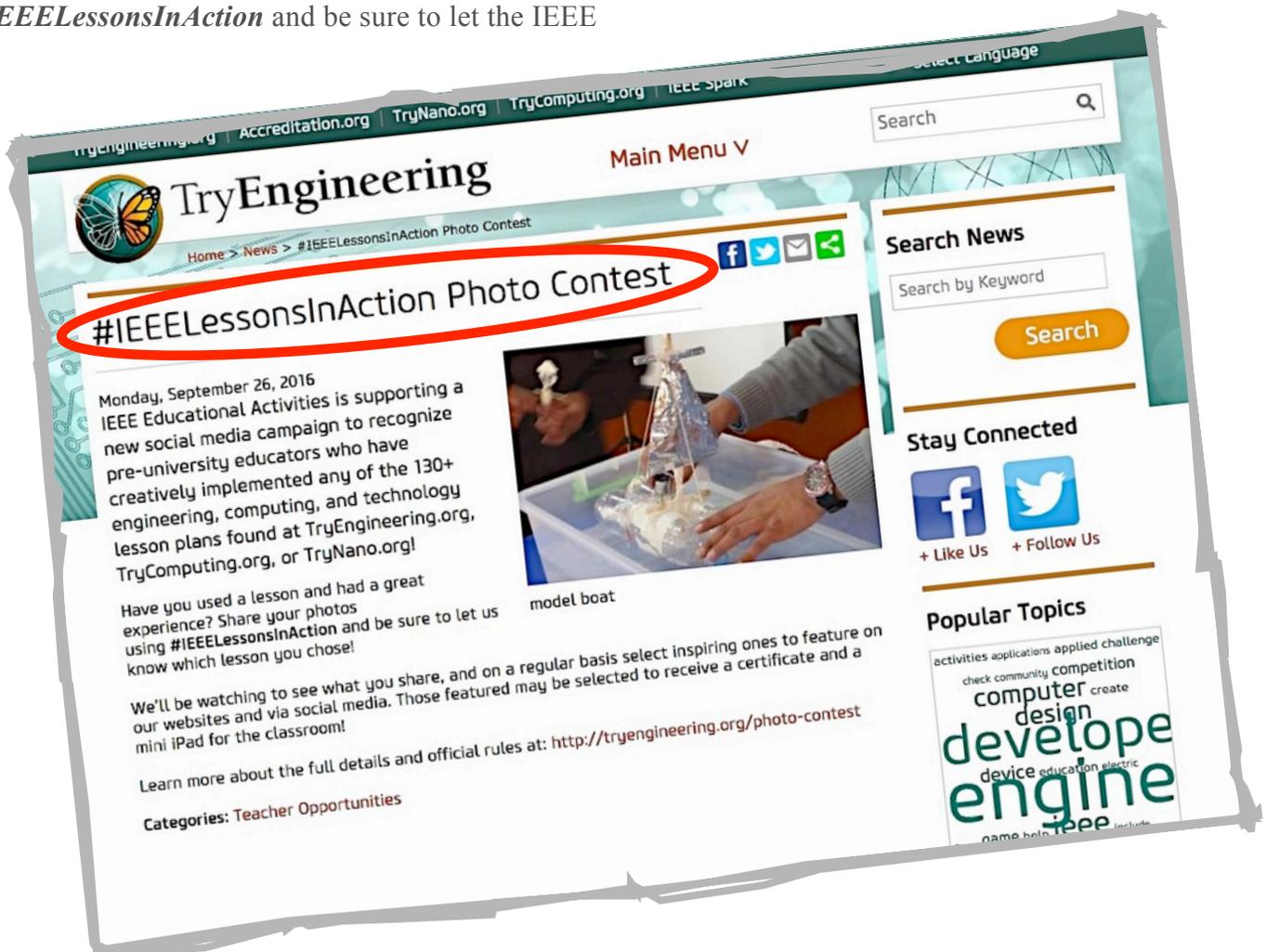
Starting in September of this year, the IEEE Educational Activities are supporting a new social media campaign that recognizes pre-university educators who have creatively implemented any of the 130+ engineering, computing, and technology lesson plans found at *TryEngineering.org* and related sites.

Here's the information in a nutshell. If you have used (or are using) a lesson and had a great experience with it, consider sharing your photos at *#IEEELessonsInAction* and be sure to let the IEEE

Education Activities staff know which lesson you chose!

We'll all be watching to see what you share, as IEEE will select inspiring examples to feature on the websites and via social media. As an incentive, those featured may be selected to receive a certificate and an iPad tablet for the classroom.

Learn more about the full details and official rules and visit *TryEngineering.org!* 



# Kudos for TISP volunteers in the Ottawa Section

IEEE's Ottawa Section recently honoured TISP volunteers at the Annual General Meeting with the "Committee of the Year" award. Congratulations to our colleagues in Ottawa!

Many TISP volunteers across the country make their time and expertise available on numerous occasions, helping to advance the goals of the Program in many practical ways. Their work does not go unnoticed. A recent event in Ontario is testimony to the IEEE's effort to recognize the many hours of volunteer work that its members dedicate to the Teacher In-Service Program.

Last November, during its 2015 Annual General Meeting, the IEEE's Ottawa Section honoured the members of the Section's Teacher In-Service Program Committee with the 2015 Outstanding Committee Award. The citation reads: "For promoting the TISP program, working with pre-university students and increasing the visibility of the IEEE Ottawa Section." Senior Section officials Wahab Almuhtadi, who chairs the Awards and Recognition Committee, and Section

Chair Janet Davis noted the accomplishments of the Committee and were on hand to present the award certificate to TISP Committee Chair Wolfram Lunscher.

Wolf's team has been very busy in the Ottawa area over the past year. We have reported on their successes in previous issues of the *Courier*. Their efforts haven't stopped in 2015. In 2016 the Section continued to introduce the young people of the Christie Lake Kids disadvantaged youth program to the TISP lesson plans, encouraging them to consider STEM careers. Also, the section successfully initiated Canada's first ever EPICS project.

Our congratulations to the team for receiving the Section's "Committee of the Year" award! 🏆

The Editors, *TISP Canada Courier*



Photo credit: IEEE Ottawa Section

Wahab Almuhtadi, Awards and Recognitions Chair, Wolfram Lunscher, TISP Chair, and Janet Davis, Ottawa Section Chair.



Photo credit: IEEE Ottawa Section

The Award Certificate honouring the work of the Teacher In-Service Program Committee of the IEEE Ottawa Section.

## Some Guidelines for Contributors

Articles and news items are welcome and should be sent by email to the Editors.

The *TISP Canada Courier* accepts feature articles up to a length of 1000 words with suitable illustration material. Smaller news items should not exceed 500 words in length. Notices for upcoming events should be submitted in a timely fashion keeping in mind the semi-annual publication schedule of the *Courier*.

Although the editors will usually consult with contributors regarding any significant change to material submitted, the *TISP Canada Courier* reserves the right to publish such material with any change(s) necessary to meet space requirements, or as otherwise deemed necessary.

This electronic newsletter is issued quarterly by TISP Canada of IEEE Region 7. Current issues and back issues are freely available and may be retrieved at [www.tisp.ieee.ca/publications.html](http://www.tisp.ieee.ca/publications.html).

## Newsletter Editors

**Editor-in-chief:**

**Dirk Werle**  
[dwerle@ca.inter.net](mailto:dwerle@ca.inter.net)

**Associate Editors:**

**David Hepburn**  
[dehepburn@sympatico.ca](mailto:dehepburn@sympatico.ca)

**Murray MacDonald**  
[murraymacdonald@rogers.com](mailto:murraymacdonald@rogers.com)

The editorial content of this newsletter does not represent official positions of the IEEE or its organizational units.



## IEEE and TISP

The Teacher In-Service Program provides a forum for IEEE volunteers to demonstrate engineering, science and mathematics concepts by sharing their real-world experiences with local pre-university educators. IEEE offers workshops for its volunteers on how to provide in-service programs.

Part of the IEEE mandate is to address declining interest of students in engineering. IEEE needs to help raise everybody's awareness of technology. The "TryEngineering" initiative involves IEEE, IBM and the New York Hall of Science. To-date, *TryEngineering.org* lesson plans have been downloaded more than 15 million times. The site has various great features, including a search for accredited university and college programs in many countries, including Canada. Portals on *TryComputing.org* and *TryNano.org* have also been launched.

More information is available at [www.ieee.org/education\\_careers/education/preuniversity/tisp](http://www.ieee.org/education_careers/education/preuniversity/tisp)