

The TISP Canada Courier #15



December 15, 2017

IEEE Canada Honours Long-time Volunteers

Every year IEEE Canada recognizes the individual achievements of its members through a program of awards. The 2017 awards also acknowledged two TISP Canada champions.

IEEE Canada is an organization that is 17,000 members strong. It has a long and rich history of achievement, much of it brought about by its members, volunteers, as well as community efforts and services. IEEE Canada offers seven achievement awards and four service awards annually. In 2017, we saw the creation of a new

and special initiative, the IEEE Canada Presidents' Make-a-Difference Award. Two long-time TISP champions were among this year's award winners recognized during ceremonies at a national IEEE meeting in Windsor, Ontario. Dr. Rossitza Marinova, a long-time member of the TISP Canada executive committee, was the recipient of the prestigious E.F. Glass Western Canada Merit Award. Mr. Dave Hepburn, a champion of TISP Canada since its inception, was the first recipient of the new IEEE Canada Presidents' Make-a-Difference Award. We congratulate both recipients on their well-deserved recognition! The following highlights their careers and successes.

David Hepburn, a Life Member of the IEEE, is a 1952 graduate of the University of Stafford in the U.K. Thus he has sixty years of active engineering in his field of Electric Power Systems. He served as chief electrical engineer and as a senior consultant on many projects and has worked in 28 countries during his long and very active career.

(continued on page 4)

Content

Issue #15

December 15, 2017



	Page
IEEE Canada Honours Volunteers	1
TISP Reports from the Regions	2
Train-the-Trainers, BC Super Conference	3
West Kootenays – Site of Robo Games	5
Have you tried tryengineering.org, yet?	6
Water Filtration at Christie Lake	7
Guidelines for Contributors, Editors	8

TISP Reports from the Regions

These columns summarize recent work, upcoming events as well as trials and accomplishments of TISP volunteers from across Canada.

Quebec / TISP Canada Web Site

Nick Roussos of the IEEE Montreal Section in Quebec has volunteered his expertise and talent to re-design the TISP-Canada web site. During the summer he has begun to recast many of the features and the information content of our web site into a more user-friendly and accessible format. It will allow

both visitors and contributors to utilize and enjoy the web site in a more effective and efficient way. Until the completion of the work by the end of the year, visitors of *tisp.ieee.ca* will have access to the test-version of the site that Nick has implemented on a strictly temporarily basis for demonstration and evaluation at *stemcommunity.ca*.

The site provides information about TISP and TISP Canada, education resources, and promotional materials. It will also serve as an up-to-date opportunity to post Section activities and as a repository of meeting notes for the monthly TISP Canada Committee meetings.

For information contact TISP-Canada web master Nikolaos Roussos at nroussos@ieee.org

Ontario

TISP champion Murray MacDonald from the IEEE London Section reported that his Section provided awards and judging at two science fairs - Thames Valley Engineering and Science Fair in London and Lambton County Science Fair in Sarnia; the total participation was close to 400. The Section provided judges for Western's FIRST Robotics Competition and the event was successful with 1000 attendees.

For information contact Murray at murraymacdonald@ieee.org

Nova Scotia

During National Engineering Month competitions in Halifax, one of the challenges involved the construction of an "earthquake-proof" structure that could safely support an open container with liquids without spilling the content when subjected to hefty vibration. Some innovative ideas were rendered, despite the occasional spill!

For information contact Dirk at dwerle@ca.inter.net




Photo Dirk Werle

During the National Engineering Month events in Nova Scotia, the competition of earthquake-proof (and spill-proof!) designs had showman talents on display as well.

Train-the-Trainers Meet


IEEE Canada hosted a workshop for trainers at its annual Spring Meeting in Windsor, ON

The volunteers and executives of IEEE Canada meet annually to discuss many important aspects and take charge of the Institute's business in our country. At this year's meeting in Windsor, Ontario, a special one-day workshop was organized to inform participants on the latest train-the-trainers activities. TISP Canada was on the agenda as well. Dirk Werle, the current Chair of the TISP Canada Committee, provided an introduction to the Teachers In-Service Program. His presentation included 23 illustrations that may be used by other TISP volunteers to promote the Program within their Sections or areas of activity. A copy of the presentation is accessible under the 'publication' tab at stemcommunity.ca or at tisp.ieee.ca. 

For further information about TISP activities in Canada, or an original copy of the PowerPoint presentation contact Dirk at dwerle@ca.inter.net

Super Conference in BC

The British Columbia Teachers' Federation hosted 6000 participants at its conference.

This fall, the BC Teachers' Federations' (BCTF) celebrated its hundredth year in style with an amazing conference. It surely was not meant to be a display of modesty, as the event was earmarked as the *Super Conference*. The naming was apt. After all, <https://www.psasuperconference.ca/> was the collaborative effort of 25 Provincial Specialist Associations (PSAs). It hosted 6000 (in words: six thousand!) participants, hundreds of workshops, over 30 keynotes, and over 275 presenters in downtown Vancouver. TISP volunteers Derek Ho and Aareet Sherman of the IEEE Vancouver Section made sure that IEEE and TISP were present at the event. They organized a booth, and, after communicating with other volunteers across the country, they offered a super display of our collective efforts at the conference. 

For further details contact Derek at dho@ieee.org and Aareet at aareet@ieee.org.



TISP volunteers can download this presentation and other documents on TISP-Canada activities at our web site.



TISP volunteers of the IEEE Vancouver Section on "active duty" at their well-stocked booth.

Photo: IEEE Vancouver Section



Photo credit: Luc Mateau

IEEE Canada President Witold Kinsner presents the Presidents' Make-a-Difference Award to Mr. and Mrs. Hepburn.



Photo credit: Stillez Stills

E.F. Glass Award recipient Rossitza Marinova and IEEE Canada President during award ceremonies at Windsor, ON.


Awards (continued from page 1)

Dave took up with the IEEE Educational Outreach Program and TISP in 2005. Every year since then, including 2016, he has given presentations and helped with the IEEE booth at the annual conference of the Science Teachers Association of Ontario (STAO). He has also conducted "teaching the teachers" workshops in several Canadian cities. He has written five lesson plans for IEEE's tryengineering.org on "Basic Electricity and Magnetism", "Basic Electric Transformers", and "Binary for the Younger Set". He has been a regular and most prolific contributor to the TISP-Canada Courier since its inception, and he acts as co-editor of the newsletter. For the past two years Dave served as Vice Chair of the TISP Canada Committee. The citation of the IEEE Canada Presidents' Make-a-Difference Award reads "**Dave Hepburn, for exceptional contributions to the IEEE Teacher in-Service Program, TISP.**"

Dr. Rossitza Marinova is a Senior Member of the IEEE has been a Professor in Mathematics and Computing Science at Concordia University of

Edmonton since 2004. She is a scholar in the area of computational mathematics, computer science and information technology, and mathematics outreach. Dr. Marinova's involvement with IEEE started in 2005. Her positions within the Northern Canada Section include vice-chair, chair of various committees such as: Educational Activities, Awards and Recognition, Communications, and the IEEE Teacher In-Service Program (TISP). Nationally, she is a member of the IEEE TISP Canada Committee, contributing through her long-standing service as co-secretary, co-organizing numerous Edmonton-area events and playing a role in several national TISP Canada workshops. The citation of the E.F. Glass Western Canada Merit Award reads "**Rossitza Marinova, for volunteering within IEEE at the local level of the Northern Canada Section.**"

The Awards were presented at the IEEE Canada Special Dinner and Awards Gala in Windsor, Ontario on April 30 and May 1, 2017, respectively.

Well done, Dave and Rossitza! TISP Canada is proud to have both award recipients as fellow volunteers on our Committee. 

West Kootenays – Site of Robo Games, and More!


A series of exciting events took place this year, involving the Robo Games and a career promotion workshops. TISP Canada champion Elroy Switlishoff reports from B.C.

In the West Kootenay region of British Columbia IEEE and TISP members were involved in a number of exciting activities this year.

The annual Popsicle Stick Bridge Competition was held in conjunction with the Regional Science Fair. It was sponsored by the West Kootenay Branch of APEGBC, with three IEEE members providing volunteer support. Over 150 bridges entered the competition. The vast majority of the entries came from students age 12 and under. Over \$6000 worth of donated prizes from local industry and engineering companies was handed out to the successful competitors and by way of on-site draws. The event was held on April 8, 2017 at the LV Rogers Secondary School in Nelson, BC.

The 2017 Robo Games were held on April 29th at Selkirk College in Castlegar, BC. Over 80 teams participated from throughout the West Kootenay

region. It turned out to be an exciting event. The IEEE Canada Foundation donated \$1000 towards the purchase of Arduino kits for rural schools.

Moreover, an Engineering and Geoscience career promotion workshop was held at Selkirk College in Castlegar, BC, on May 19. More than 60 Grade 10 to Grade 12 students participated. There are good prospects for them. The Selkirk College first-year engineering transfer program has negotiated a guaranteed entry into second year UBC Okanagan engineering for successful first-year Selkirk students. The College is also developing connections with a local “fab lab” that can be used by first year engineering students; details can be found at <https://www.midaslab.ca/> 

For further information of the Engineering Challenge contact TISP Canada champion Elroy Switlishoff at e.switlishoff@selkirk.ca.



Photo credit: E. Switlishoff

The Robo-Games competition attracted a lot of spectators who joined the competing teams during their presentations under the

watchful eyes of the jury. The actual space for the competing robots was confined to the squares on the floor of the gym.

Have you tried www.tryengineering.org yet?

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


Over the past months a number of exciting lesson plans have been added to the roster at the tryengineering.org site for free access and download. The folder now includes 135 different lesson plans. Here are three recent examples:

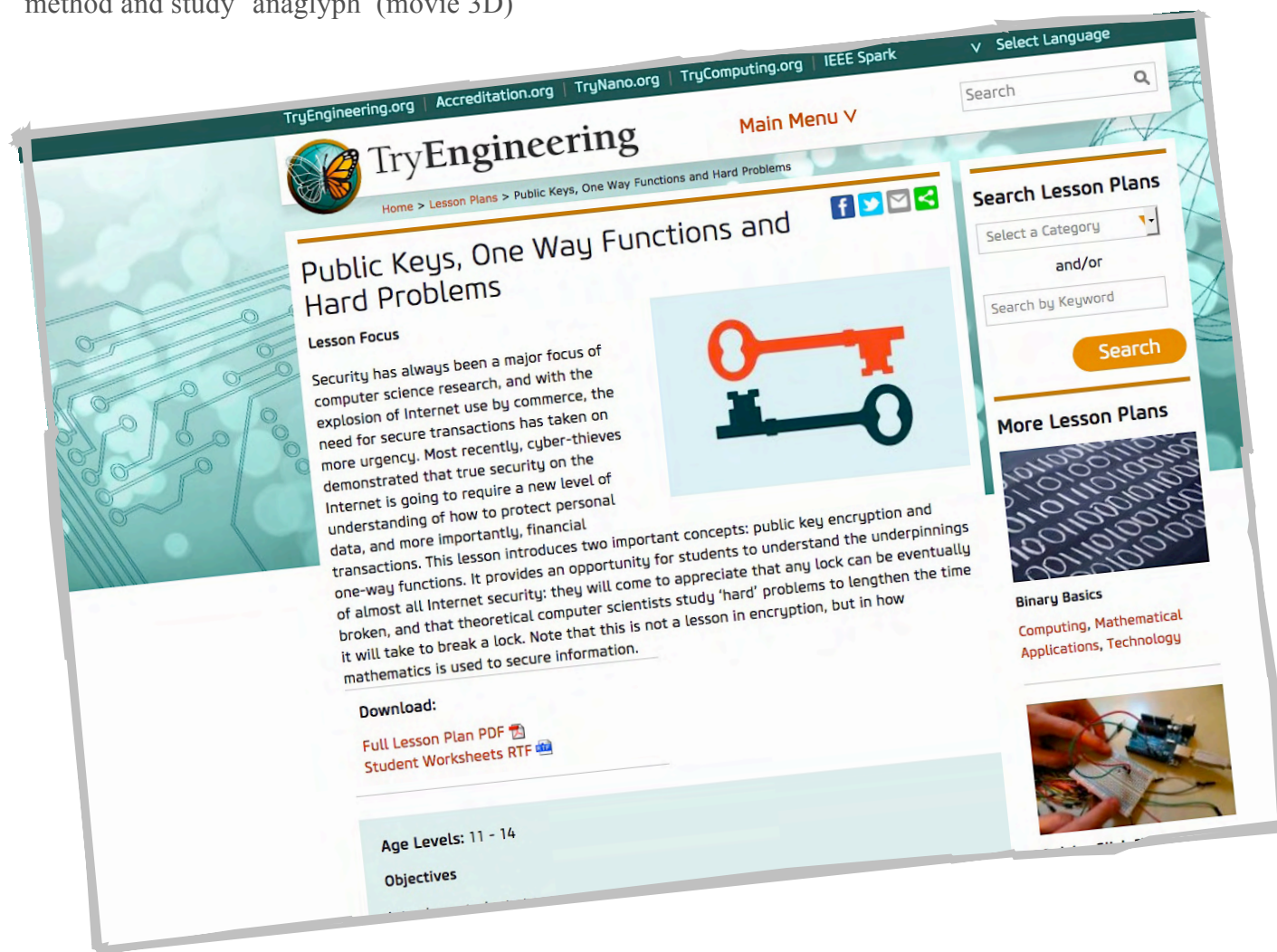
Public Keys, One Way Functions and Hard Problems introduces two important concepts: public key encryption and one-way functions.

Virtual Reality and Anaglyph Stereoscopic Technology enables students to use the scientific method and study 'anaglyph' (movie 3D)

technologies to model computer science design and learn how stereo images create the illusion of 3D.

Last but not least, **Smart Buildings and the Internet of Things** explores the practical, scientific, ethical, and environmental issues that emerge in building 'smart buildings' and that rely on 'the internet of things'.

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



(Almost) Crystal Clear Water at Christie Lake

Wolf Lunscher of IEEE's Ottawa Section had a busy spring organizing all kinds of summer camp activities – successful water filtration experiments among them. He filed this report.

The Christie Lake camp south of Perth in Ontario is a busy place during the summer month. This year, we organized a number of activities in cooperation with the Christie Lake Kids and Ciena Cares organizations. The IEEE and TISP volunteers who helped develop and facilitate the projects included Janet Davis, Maxwell Dondo and myself from the Ottawa Section. Patrick Finnigan, from the Toronto Section, who happened to have a cottage nearby, joined us and was happy to give us a hand with the preparations and experiments. Our base was a lovely outdoor gazebo where we set up shop on three days during the months of July and August. Our charges were three groups of high school-age youth, about half a dozen students per group.

You are probably wondering by now what kind of engineering projects we engaged in, so I will briefly report on our number one hit. Given our

lake and nature setting, we had chosen the water filtration experiment from the tryengineering.org lesson plan roster. We had all the simple and inexpensive material on hand, along with a few large jars of sediment-rich water. Working under our supervision and guidance, the students had great fun using various water filtering techniques and stages of filtration. The end result turned out to be (almost) clear to mildly murky, matching the clarity of the nearby lake, minus the suspended sediment and other unbecoming contaminants. I took some photos as proof-positive, not only of our very successful experiments, but also of a proud and engaging group of students who enjoyed the days at the camp as much as we did as TISP volunteers. ☔

For further information contact Wolf Lunscher at the IEEE Ottawa Section at wlunscher@gmail.com.



TISP Champion Patrick Finnigan of the IEEE Toronto Section is dispensing unfiltered water prior to the filtration experiments.



The camp participants are eagerly proceeding with the water filtration procedures, and the results are, well, fairly clear!

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.

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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