Dear Colleagues and Friends,

I am pleased to look back on another successful year of activity for the Centre for Science, Mathematics and Technology Education (SMT). Highlights include the SMT Forum Series, presentations by a number of visiting scholars, outstanding thesis awards for Carol-Ann Burke and Alex Antropov, and the launch of the upcoming graduate student special issue of the *Canadian Journal of Science, Mathematics and Technology Education*. As in previous years, our faculty and students enjoyed a productive year of scholarship and activities, with many books, chapters, journal articles, grants, presentations and outreach events. This has also been an important year of review and renewal, resulting in Centre status being confirmed for a further 5-year period. I am also pleased to announce that SMT has been recommended for funding under the OISE Centres and New Initiatives Funding program. These funds will be used to promote some collaborative outreach programs with the wider SMT community. Finally, I pay tribute to our wonderful administrative assistant, Cheryl Clarke, for all the work she has done on our behalf. Thanks to everyone for another great year. Have a wonderful summer.

Best wishes,

John Wallace

**MISSION**

We are a centre for excellence in science, mathematics, and technology (SMT) education: Undertaking research, development, and teaching that promote critical understanding, inclusion, diversity, equity, personal wellbeing, creativity, and social and environmental justice.

**Centre Renewal**

In recent months we have been advised that SMT's Centre status has been confirmed for a further five-year period. In recommending the Centre for renewal, the Advisory Subcommittee of OISE’s Research Standing Committee lauded SMT's many strengths and significant contributions in building OISE’s work in research and practice, including our "contribution to the Initial Teacher Education program, the extensive involvement of students in publications, connection to programs across the university and the Centre’s participatory and democratic governance structure". It also commended the Centre for the academic contribution and financial viability of our journal, the *Canadian Journal of Science, Mathematics and Technology Education*. The report highlighted the conclusion of one external reviewer:

"there is no doubt that the faculty of the CSMTE [SMT] is one of the major world groups currently working in science, mathematics, and technology education."
SMT Forum Series

Two new public forums, focusing on science, mathematics and technology education, were held in the NEXUS lounge at OISE in November 2013 and March 2014. These moderated panel discussions featured leading SMT scholars, invited experts, and graduate students. The two forums, titled *If MOOCs are the answer, what is the question?* and *What is optimum knowledge for teaching science and mathematics?* provoked some interesting discussion and debate and were well attended by the OISE and wider community. Both discussions are available in video format from the SMT webpage [http://www.oise.utoronto.ca/smt/Links.html](http://www.oise.utoronto.ca/smt/Links.html).

Highlighted Scholarly Achievement

Erminia Pedretti, Katherine Bellomo and Susan Jagger have written two exciting new science methods books, *Explorations in secondary school science: Practice and theory 7-12* (Pedretti & Bellomo) and *Explorations in elementary school science: Practice and theory K-8* (Pedretti, Bellomo, & Jagger). The books present theory, practice and illustrative examples of science education derived from the Canadian context. At a book launch hosted by the Department of Curriculum, Teaching and Learning and Pearson Canada on May 14, 2014, Erminia Pedretti, speaking on behalf of all three authors, acknowledged the support and influence of her SMT colleagues and students on the development of the books. The books are available from the publishers, Pearson Canada.

Other Faculty News and Activities


Ron Lancaster led a series of activities aimed at developing and teaching about innovative ways of using iPads in mathematics classrooms.

Cathy Marks Krpan and Indigo Esmonde obtained a Visiting Scholar Grant to invite Jo Boaler, Professor of Mathematics at Stanford University to speak at OISE.

John Percy is one of the featured speakers in the Toronto Public Library’s ‘Thought Exchange’ Astronomy Programs taking place at various branches, in April, May and June, 2014. More information is available on the TPL website at [http://www.torontopubliclibrary.ca/](http://www.torontopubliclibrary.ca/)

Visiting Scholar Presentations

Ralph Levinson, Institute of Education, University of London
*A pedagogy of possibility? The case of school science education*

Jo Boaler, Stanford University
*Beautiful math: How successful school approaches change students’ lives; What do prospective math teachers need to know, and how should we prepare them?*

Marilyn Frankenstein, University of Massachusetts Boston
*Mathematics, social justice and activism*
SMT Student Steering Committee

In spring 2014, the SMT Student Steering Committee celebrated the launch of a special issue (14.2) of the *Canadian Journal of Science, Mathematics and Technology Education*. The special issue consists of an international collection of articles written by graduate students, and edited by the following team of SMT students: Daniel Atkinson, Lesley Dookie, Susan Jagger, Limin Jao, Vivien Kim, Murat Oztok, Lisa Romkey, Michael Tan, Reed Thomas and Dan Zingaro.

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Congratulations to SMT Student Graduates

Alisa Acosta (MA)
*The role of epistemic cognition in complex collaborative inquiry curricula*
Supervisor: Jim Slotta

Carrie Annable (PhD)
*Effects of creating a Math Talk learning community in laptop classrooms*
Supervisor: Doug McDougall

Alexander Antropov (PhD)
*Secondary school mathematics teacher’s research pedagogical and content knowledge*
Supervisor: Doug McDougall

Arif Kazi Anwar (PhD)
*Towards a role framework for mobile devices in educational contexts*
Supervisor: Jim Slotta

Jesse Thomas Bazzul (PhD)
*How discourses of biology textbooks work to constitute subjectivity, or "Who do these textbooks think we are?*
Supervisor: Larry Bencze

Carol-Ann Burke (PhD)
*Western teachers of science or teachers of western science: On the influence of western modern science in a post-colonial context*
Supervisor: John Wallace

Michelle Melodie Dubek (PhD)
*Making meaning of Von Hagen's "Body Worlds": Towards an interdisciplinary approach to science exhibitions*
Supervisor: Erminia Pedretti
Elena Corina Georgescu (PhD)
*Grade 9 teachers’ use of technology in linear relations*
Supervisor: Douglas McDougall

Limin Jao (PhD)
*Teachers’ perspectives on student engagement in Grade Nine Applied Level Mathematics classrooms*
Supervisor: Douglas MCDougall

Klodiana Gjoncaj Kolomitro (PhD)
*Educational developers and their use of learning theories: Understandings and practices*
Supervisor: Larry Bencze

Terry Vernon Louisy (MA)
*Multiliteracies, identity construction and the marginalized: Using information and communication technologies (ICTs) as a tool to bridge the knowledge society divide*
Supervisor: Clare Brett

Murat Oztok (PhD)
*Hidden curriculum of online learning: Discourses of whiteness, social absence and inequity*
Supervisor: Clare Brett

Fatima Remtulla (MA)
*Constructing and assessing individualized secondary mathematics knowledge: A case study of three teachers using laptop computers*
Supervisor: Douglas McDougall

Tasha Diane Richardson (MA)
*Exploring Ontario Grade Ten students’ decisions to select or reject school physics*
Supervisor: Erminia Pedretti

Nivideta Mani Shori (MA)
*Personal-professional interconnections: Contextualizing teachers’ use of information and communication technologies in the classroom*
Supervisor: Clare Brett

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**Student Awards**

Congratulations to recent SMT graduate Carol-Ann Burke for receiving the 2014 Outstanding Thesis Award from the Science Education Research Group (SERG) of the Canadian Society for Studies in Education (CSSE). Carol-Ann’s thesis is titled *Western teachers of science/teachers of Western science: On the influence of Western modern science in a post-colonial context*. Her supervisor was John Wallace. Carol-Ann was presented with her award at the 2014 CSSE conference, in late May.

Congratulations also to SMT graduate Alexander Antropov for winning the Recognition Award from the Canadian Association for Teacher Education (CATE) for his recently completed doctoral dissertation entitled *Secondary school mathematics teacher candidates’ research pedagogical and content knowledge*. His supervisor was Doug McDougall. Alexander's award ceremony took place during the 2014 CSSE conference, in late May.
Canadian Journal of Science, Mathematics and Technology Education

Our Journal continues to generate interest from readers in Canada and internationally. Here are the top ten articles downloaded in 2014 to date:

<table>
<thead>
<tr>
<th>Volume [Issue]</th>
<th>Article</th>
<th>Publication Year</th>
<th>Times Downloaded</th>
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</thead>
<tbody>
<tr>
<td>11[4]</td>
<td>Which is Greater: One Half or Two Fourths? An Examination of How Two Grade One Students Negotiate Meaning, Catherine D. Bruce and Tara Flynn</td>
<td>2011</td>
<td>114</td>
</tr>
<tr>
<td>12[1]</td>
<td>Interconnections of Knowledge and Beliefs in Teaching Mathematics, Jennifer Holm and Ann Kajander</td>
<td>2012</td>
<td>104</td>
</tr>
<tr>
<td>14[1]</td>
<td>&quot;Restorying&quot; Science Education Based on Local and Spiritual Values: The Case of Ethiopia, Solomon Belay Faris</td>
<td>2014</td>
<td>83</td>
</tr>
</tbody>
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Recent Research Grants

Brett, Clare: SSHRC SIG: $4,500

*Broadening the discourses about online learning*

Brett, Clare (Co-Applicant): SSHRC Partnership Collaborative Grant: $2.8 million

*Assessing and supporting children's oral language and writing development and building educational capacity in northern communities*

Hanna, Gila: SSHRC Grant: $84,827

*Factors in reconstructing a mathematical proof: Implications for mathematics education*

Scardamalia, Marlene: SSHRC Grant: $468,530

*Digitally-mediated group knowledge processes to enhance individual achievement in literacy and numeracy*
Selected Publications & Presentations

Articles


**Books**


**Chapters**


**Media Productions**


Slotta, J. (ongoing). *The SAIL Smart Space (S3)*. An open source technology framework for smart classroom research. Currently shared and co-developed in part or in full with three other research labs.

**Keynote Addresses**


**Conference Presentations**


**Workshops, Academic Lectures, Colloquia and Seminars**


Lancaster, R. (2013, December). *Creating iBooks on the iPad about the Sliding Ladder Problem and the art of Micah Lexier*. A two-hour workshop for students in grade 8 from the Holy Trinity School, Richmond Hill, ON.
