

Welcome to the 2010 OCDSB/OSSTF Science PD Day!
Bell High School

Program Schedule

8:00 – 8:45	<i>Registration/Exhibitors/Networking/Snacks</i>
8:45 – 10:00	Keynote Speaker
10:00 – 10:30	<i>Networking/Exhibitors Break</i>
10:30 – 11:30	Panel Discussion and Workshop Session A
11:30 – 12:30	<i>Lunch</i>
12:30 – 1:30	Workshop Session B
1:30 – 1:45	<i>Networking/Exhibitors Break</i>
1:45 – 2:45	Workshop Session C

Keynote Speaker: FRANKE JAMES

Franke James is an entertaining and persuasive advocate for the environment. Her lively presentations demonstrate her “rare skill of presenting important abstract concepts with immediacy and relevance through her art.” Franke is an artist and writer with over twenty years experience in communications for education and professional development. She is using those skills to inspire personal action and responsibility on environmental issues—and making an impact internationally. She has a Masters in Fine Arts from the University of Victoria, and a Bachelor of Fine Arts from Mount Allison University.

“As a university professor who has taught environmental engineering for almost 20 years, I find that the messages are especially clear, complemented with excellent research. The weaving of a self-deprecating personal journey with ecological principles is brilliant... Franke’s stories will help the rest of us be less fearful of making changes in our everyday lives.”

- Alex Mayer, Ph.D., Director, Center for Water & Society, Michigan Technological University



Rave Reviews: Franke has received enthusiastic reviews for her keynotes, speeches, and “Green Conscience” art workshops. She has presented to students and educators at the elementary, high school, and university level including the University of Cincinnati, Bates College, Ryerson University, the McMichael Gallery, the Ontario Science Centre, Ontario Teacher’s Federation, Branksome Hall, and others. Franke has presented at events and conferences including Flashforward San Francisco, Flashforward New York, and the World Animation Celebration, Hollywood and has acted as a Judge for the Flashforward Film Festival and Marketing Magazine’s Digital Awards.

Newsmaker in the USA, Canada, and overseas: Franke has been featured on TV, radio, print, and online, including interviews and reviews in Green Living Magazine, 350.org, Greenpeace, Treehugger, Worldchanging, Lifehacker, National Post, Montreal Gazette, Times-Colonist, Ottawa Citizen, CTV News, CITY TV News, CBC Radio, the Toronto Star. Her story A Green Winter was part of an anthology entitled Perspectives on Contemporary Issues that included stories from Stephen Lewis, Margaret Atwood, and David Suzuki. She also produced A Green Winter as an animated short which was screened at the 2007 Green Living Show between appearances by Al Gore and Robert Kennedy, Jr.

WORKSHOP SESSION A, 10:30 – 11:30 am.

A1	Panel Discussion: How can we best prepare our graduates for post-secondary education?	An open discussion forum on preparation strategies for students moving onto post-secondary institutions. Algonquin College representative: Carleton University representative: Dr. Sue Bertram, Dr. Brian Cousens University of Ottawa representative: Dr. Alison Flynn
A2	Catching Electrons in Attoseconds And The Life Science Brings - Dr. Paul Corkum (University of Ottawa)	I will explain how short intense laser pulses can control electrons and how these electrons create even shorter pulses -- the world's shortest – with duration measured in attoseconds (1/1000,000,000,000,000,000 of a second). We are on the verge of making movies of bonds breaking and atoms rearranging during a chemical reaction – the very essence of Chemistry.
A3	The Science of Smoking Cessation - Dr. Andrew Pipe (Ottawa Heart Institute)	Dr. Andrew Pipe, well known from his many media appearances and work at international athletic events, will outline the current knowledge of the effects of tobacco smoke on the brain, and the implications for helping smokers deal with nicotine addiction.
A4	The Large Hadron Collider - Dr. Alain Bellerive (Carleton University)	The Large Hadron Collider (LHC) is a gigantic scientific instrument near Geneva, where it spans the border between Switzerland and France about 100 m underground. It is a particle accelerator used by physicists to study the smallest known particles – the fundamental building blocks of all things. It will revolutionise our understanding, from the minuscule world deep within atoms to the vastness of the Universe.
A5*	Looking Ahead to Grade 11 Biology and Chemistry - Mark Richards (McGraw-Hill Ryerson)	Join us as we provide a hands-on, engaging, workshop presenting McGraw-Hill Ryerson's brand new biology resources for Biology 11 and brand new chemistry resources for Chemistry 11. You will take a look at an invigorating and current approach to teaching biology and/or chemistry in your classroom. Find out what's changed in the curriculum and how Biology 11 and Chemistry 11 provides teachers with numerous tools both print and digital to engage students while supporting the the newly revised Grade 11 Biology SBI3U and Chemistry SCH3U Curriculums.
A6*	Clean Technology in Ottawa and Eastern Ontario - Trends and Potential - Marc McArthur via Louis Boisvert (OCRI)	A brief introduction to the core concepts of clean technology followed by a discussion of the current and future cleantech activity in the Ottawa and Eastern Ontario Region.
A7*	A Sample of Distillate from Thirty Years of Teaching Science. - Doug De La Matter (Madawaska Valley District School Board)	A selection of demonstration, activity and teaching ideas from 30 years of classroom trials. These are ideas that stand out in my collection as interesting and effective lessons. Mainly Chemistry, there will be ideas suitable for Grade 9 classes and a reference or two to Physics. The material will be most useful for teachers "new" to those courses.
A8*	Evolution for Everyone - Doug Fraser (Nelson Education)	Doug will discuss how evolution can best be introduced into the grade 11 biology program in a way that enhances the course, and is accessible for students and teachers.

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		The workshop will provide an excellent foundation for teachers and offer examples of classroom activities and strategies. Resource package handout.
A9	A Virology Refresher and Update - Dr. Ken Dimock (University of Ottawa)	In this workshop I will review the nature of viruses and their properties. I will also discuss several viruses of current public interest and some recent research advances. Topics will include influenza virus, West Nile virus and the possible association of retroviruses with prostate cancer and chronic fatigue syndrome.
A10*	Ready, Set, Go! Set the Stage for Learning Science by Connecting It to the World Outside - Jeffrey Major (Thames Valley District School Board & Nelson)	STSE sets the context for the concepts and skills that form a science unit. Collaboratively explore strategies that will help you integrate issues, knowledge, and skills empowering students to take local action. Sample materials will be provided.
A11*	Shed a Little Light on the New Grade 10 Optics Unit (SNC2D and SNC2P) - Martin Gabber (Durham District School Board)	Are you new to optics? Explore how light interacts with mirrors and lenses. Use ray diagrams to predict image characteristics and test your predictions through hands-on inquiry. Computer simulations will be used to aid conceptual understanding. Sample materials will be provided.
A12	Movers and Shakers - Utilizing Movement in the Secondary Science Classroom - Jacqueline Poirier (Renfrew Catholic District School Board)	This workshop will focus on strategies and structures that involve movement. The benefits for students' brains, motivation and wakefulness will be clear. Strategies and structures will be applicable to all levels of learners.
A13*	Checking for Understanding - Lauren Wilson & Richard Daber (Madawaska Valley DSB and Renfrew Catholic DSB)	Checking for Understanding is both an instructional and an assessment strategy, one that should be used several times a day. This workshop will demonstrate several simple techniques to check for understanding in the middle of a lesson. Adding these techniques to your teaching repertoire will allow you to immediately become more effective at differentiating and fine-tuning your instruction and assessing your students' learning. Opportunity will be given for discussion and interaction throughout the workshop.
A14	MI and DI and AR - More Than Just Acronyms! - Cheryl Welbanks-Virgin and Graeme Wyatt (Arnprior District High School)	Graeme and Cheryl were involved in an action research in SNC2D a couple of years ago in which they assessed their students' multiple intelligences and differentiated their instruction according to the results. They will share some of what they learned and the high yield strategies that became part of their permanent repertoire.
A15	Bringing Nanoscience and Nanotechnology into the High School Classroom - Bonnie Lasby (University of Guelph)	How do we introduce nanoscience/nanotechnology to high school students? You'll see demos and experiments for biology, chemistry or physics classrooms that will help explain nanoscience in a fun and interesting way.
A16	Vernier Labquest: What is it, and why is it helpful in environmental studies? - James Frielink (Merlan Scientific)	This session will provide a hands-on opportunity to experience the latest in Vernier probeware technology. The Labquest takes the power of datalogging and analysis into the field. It's ideal for environmental studies, wet labs, and engaging your students!
A17	Using Cell Phones to Explore our Environment - John Scully	The youth of today use their cell phones for social interaction. Let's encourage them to do some real learning with them. Participants will receive a hands-on introduction

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	(Learning Through the Arts)	in using available, GPS enabled cell phones and the media arts to investigate our local environment.
A18	Lab Safety -- What to do If....? - James Palcik (Palcik Educational Products Ltd.)	Do you know what to do in case of a fire, flood, chemical spill, or accidental injury in the science lab? Let our trained professional take you on a journey of safety enlightenment through your school's science department and train you in some emergency procedures that you may need to use. All participants will be rewarded for attending this must-attend session.
A19	Exhibits	

WORKSHOP SESSION B, 12:30 – 1:30 pm.

B1*	Air Aware: Empowering Youth to Enhance Personal Health and Improve Air Quality - Allison Kawall (Clean Air)	Air Aware is a curriculum based program for grades 10-12 that features the Air Quality Health Index (AQHI) which was developed by the Government of Canada to help Canadians understand the potential impact poor air quality can have on their health. Air Aware offers a web 2.0 site, activities, online games, resources and includes an educational presentation about air quality and active living by a Clean Air Champion.
B2*	Ready, Set, Go! Set the Stage for Learning Science by Connecting It to the World Outside - Jeffrey Major (Thames Valley District School Board & Nelson)	STSE sets the context for the concepts and skills that form a science unit. Collaboratively explore strategies that will help you integrate issues, knowledge, and skills empowering students to take local action. Sample materials will be provided.
B3*	Shed a Little Light on the New Grade 10 Optics Unit (SNC2D and SNC2P) - Martin Gabber (Durham District School Board)	Are you new to optics? Explore how light interacts with mirrors and lenses. Use ray diagrams to predict image characteristics and test your predictions through hands-on inquiry. Computer simulations will be used to aid conceptual understanding. Sample materials will be provided.
B4*	Climate Challenge: Learn, Audit, Act - Tricia Rande	What is the impact of school operations on climate change? Looking for a hands-on, athlete-inspired, curriculum-based project? In this workshop, you'll learn how to measure your school's climate impact and leave equipped with online tools and resources to audit your school's greenhouse gas emissions and create sustainable places to learn, work, and play.
B5*	Movers and Shakers - Utilizing Movement in the Secondary Science Classroom - Jacqueline Poirier (Renfrew Catholic District School Board)	This workshop will focus on strategies and structures that involve movement. The benefits for students' brains, motivation and wakefulness will be clear. Strategies and structures will be applicable to all levels of learners.
B6*	The Science of Climate Change: Environmental Stewardship in the Classroom. - Dave McLaughlin (Ontario Ministry of the Environment)	Presentation provides an overview of the current science of climate change, using examples of predicted and measured impacts in Ontario. It also identifies practical climate change related classroom projects or study themes.
B7*	Checking for Understanding - Lauren Wilson & Richard Daber (Madawaska Valley DSB and Renfrew Catholic DSB)	Checking for Understanding is both an instructional and an assessment strategy, one that should be used several times a day. This workshop will demonstrate several simple techniques to check for understanding in the middle of a lesson. Adding these techniques to your teaching

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B8*	MI and DI and AR - More Than Just Acronyms! - Cheryl Welbanks-Virgin and Graeme Wyatt (Arnprior District High School)	Graeme and Cheryl were involved in an action research in SNC2D a couple of years ago in which they assessed their students' multiple intelligences and differentiated their instruction according to the results. They will share some of what they learned and the high yield strategies that became part of their permanent repertoire.
B9*	Smarter Science - project-based inquiry science - Mike Newnham (Smarter Science – Youth Science Canada)	Smarter Science, an open-source educational framework with a focus on Inquiry and Project-based Science is being adopted by School Boards across Ontario. Learn how secondary science teachers are addressing the scientific inquiry and investigation expectations in the revised science courses. Course-specific experiences and strategies will be shared.
B10	DRSA/OCRI joint talk	
B11*	The Green Conscience Workshop: Six Tools for Climate Change Art - Franke James (2010 Keynote)	In this hands-on, interactive workshop artist & author Franke James asks participants to listen to their green conscience, and then leads them through her Six Tools system so that they can express their ideas visually. Many people today are anxious about climate change and feel powerless. We all wonder, "How can we make a difference?" Franke James answers that question by asking that we look inside. Franke comments, "Knowing that everyone has something that nags at them, I start my workshops with the simple question, "What's bothering your green conscience?" Since 2007, Franke's art workshops have enabled non-artists (and artists) to create powerful and expressive artworks. She has spoken to teachers and students from grade school to university level in Canada and the USA. A recent climate change camp for teachers resulted in her Green Conscience exercise being integrated into a lesson plan for Ontario teachers. It's now available as a teacher resource on the Ontario Teachers Federation website.
B12*	Teaching Applied Science using McGraw-Hill Ryerson's new Science Links 9 & 10 - Mark Richards (McGraw-Hill Ryerson)	Build your student's confidence for success with McGraw-Hill Ryerson's brand new Science Links resources. Experience an engaging, hands-on workshop demonstrating powerful tools in both print and digital that will allow you to fully engage your learners.
B13	Integrating Communications Technology in the Science classroom - Bruce Summers (OCDSB)	Teachers have a myriad of tools at their disposal to deviate from the standard textbook approach: Discovery Education Streaming, NASA, Celestia, Google Earth, Stellarium, Gizmos, document cameras are such examples.
B14	Technology in the Differentiated Science Classroom - Luciano Lista	Today's grades 9-12 students speak the language of technology. Increase student engagement by weaving new technologies into your teaching style creating interactive learning environments. Teachers and newbies are invited to this hands-on session. Sample materials will be provided.

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B15	Interactive Whiteboard Lessons for Teaching Science - Phil Bergeron (OCDSB)	Participants in this workshop will get step by step instructions on putting together a cheap interactive whiteboard. There will be an opportunity to build an infrared pointer for control of the whiteboard. There will be a demonstration of some lessons that use the interactive whiteboard to teach physics using free software. Bring a memory key to get your copy of all of the software necessary for this project.
B16	Lab Safety -- What to do If....? - James Palcik (Palcik Educational Products Ltd.)	Do you know what to do in case of a fire, flood, chemical spill, or accidental injury in the science lab? Let our trained professional take you on a journey of safety enlightenment through your school's science department and train you in some emergency procedures that you may need to use. All participants will be rewarded for attending this must-attend session.
B17	Using Cell Phones to Explore our Environment - John Scully (Learning Through the Arts)	The youth of today use their cell phones for social interaction. Let's encourage them to do some real learning with them. Participants will receive a hands-on introduction in using available, GPS-enabled cell phones and the media arts to investigate our local environment.
B18*	You Asked for Them, Now They're Here: New E-Learning Science Courses and Resources! - Rose Burton Spohn (E-Learning Ontario)	E-Learning Ontario provides all provincially-funded district school boards and their teachers with free access to approximately 100 secondary e-learning courses, over 18,000 K-12 electronic resources, and several user-friendly technologies. Let us take you on a virtual tour of some of the newest science and technology courses and resources – many of them at the secondary level – that you can use with your students. Come learn how to access these materials to enhance your students' learning experiences; then learn how you can add to the province-wide collection!
B19	ExploreLearning - Gotta Get Gizmo! - Stephen Lippa (ExploreLearning)	Unleash the power of inquiry-based learning using the award-winning library of Math and Science Gizmos at ExploreLearning.com. Licensed by the Ministry, Gizmos help you take advantage of research-proven instructional strategies that let students of all ability levels develop conceptual understanding. Versatile, easy to use, and great for differentiating instruction, you've gotta get Gizmo!
B20	Quantum Fun: Wave-Particle Duality for Light and Electrons - Richard Taylor (OCDSB)	Grade 12 Physics and Chemistry Teachers will be given a new DVD and lesson plans from the Perimeter Institute for teaching basic Quantum Theory. Modifications of the double-slit experiment are used to show the two-sided nature of both photons and electrons. Sometimes they behave like particles, other times they behave like waves. What are they really? Both!

WORKSHOP SESSION C, 1:45 – 2:45 pm.

C1*	The Ottawa-Gatineau Watershed Atlas (OGWA): a Collaborative Approach to Information Sharing - Sasha Kebo (Pollution Probe)	The Ottawa-Gatineau Watershed Atlas (OGWA) is an initiative that demonstrates an approach to overcome the jurisdictional challenges of watershed management and information sharing. Main topics discussed are: web-based Geographic Information Systems (GIS), information sharing and distributed data, and watershed-based management in the National Capital Region.
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C2*	<p>The Science of Climate Change: Environmental Stewardship in the Classroom. - Dave McLaughlin (Ontario Ministry of the Environment)</p>	<p>Presentation provides an overview of the current science of climate change, using examples of predicted and measured impacts in Ontario. It also identifies practical climate change related classroom projects or study themes.</p>
C3*	<p>Smarter Science - project-based inquiry science - Mike Newnham (Smarter Science – Youth Science Canada)</p>	<p>Smarter Science, an open-source educational framework with a focus on Inquiry and Project-based Science is being adopted by School Boards across Ontario.</p> <p>Learn how secondary science teachers are addressing the scientific inquiry and investigation expectations in the revised science courses. Course-specific experiences and strategies will be shared.</p>
C4*	<p>Bringing Nanoscience and Nanotechnology into the High School Classroom - Bonnie Lasby (University of Guelph)</p>	<p>How do we introduce nanoscience/nanotechnology to high school students? You'll see demos and experiments for biology, chemistry or physics classrooms that will help explain nanoscience in a fun and interesting way.</p>
C5	<p>Integrating Communications Technology in the Science classroom - Bruce Summers (OCDSB)</p>	<p>Teachers have a myriad of tools at their disposal to deviate from the standard textbook approach: Discovery Education Streaming, NASA, Celestia, Google Earth, Stellarium, Gizmos, document cameras are such examples.</p>
C6*	<p>Evolution – Chromosomes, Brussels Sprouts, and Walking Fish - Doug Fraser (Nelson Educational)</p>	<p>This workshop will feature practical and engaging hands-on activities to use in the classroom. Activities will focus on the process of natural selection, evidence of evolution, and the relevance and place of evolutionary biology in an STSE context. Participating teachers will receive a resource package.</p>
C7	<p>Development of Novel Cancer Therapeutics - Dr. John Bell (University of Ottawa)</p>	<p>Lecture Style with questions and answers</p>
C8*	<p>The New Science Curriculum - Christine Adam-Carr (Ottawa-Carleton Catholic School Board)</p>	
C9*	<p>Earth Sciences Education: Why kids need to know about how the earth works. - Beth Halfkenny (Carleton University)</p>	<p>This session will encourage the teaching of Earth and Space Sciences, as well as adding Earth Science activities to other Science courses throughout all levels of public school. We will provide ready to use exercises to introduce students to a wide variety of disciplines within Earth Sciences, and that can be used within the Math, Physics, Chemistry and Biology curriculum, as well as being adaptable to elementary science. A resource CD will be provided containing useful geological tools, exercises, photographs, field trip guides and related web links.</p>
C10*	<p>ExploreLearning - Gotta Get Gizmo! - Stephen Lipka (ExploreLearning)</p>	<p>Unleash the power of inquiry-based learning using the award-winning library of Math and Science Gizmos at ExploreLearning.com. Licensed by the Ministry, Gizmos help you take advantage of research-proven instructional strategies that let students of all ability levels develop conceptual understanding. Versatile, easy to use, and great for differentiating instruction, you've gotta get</p>

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C12*	You Asked for Them, Now They're Here: New E-Learning Science Courses and Resources! - Rose Burton Spohn (E-Learning Ontario)	E-Learning Ontario provides all provincially-funded district school boards and their teachers with free access to approximately 100 secondary e-learning courses, over 18,000 K-12 electronic resources, and several user-friendly technologies. Let us take you on a virtual tour of some of the newest science and technology courses and resources – many of them at the secondary level – that you can use with your students. Come learn how to access these materials to enhance your students' learning experiences; then learn how you can add to the province-wide collection!
C13	Technology in the Differentiated Science Classroom - Luciano Lista	Today's grades 9-12 students speak the language of technology. Increase student engagement by weaving new technologies into your teaching style creating interactive learning environments. Techies and newbies are invited to this hands-on session. Sample materials will be provided.
C14	Let's Talk Science Partnership Program Michelle Zenko* (Let's Talk Science Partnership Program Ottawa)	We will do a bit of a powerpoint presentation on the program and our services and will show off some of our hands-on science workshops that we can present in class
C15	Exhibits	

Registration Fees

Register Early – registration is \$10.00 for OSSTF District 25 members (FTE teachers) who register by 4:00 pm Friday, January 29th, 2010. The registration fee will be collected and sent by the department head at your school. If you do not register by the date given, your registration fee will be increased to \$20.00. We need the registration numbers in order to adequately plan for the PD day. Department heads, please have the list of names and a single cheque made out to "OSSTF District 25 Science Subject Council", in the board mail by **Friday, January 29th, 2010**. The cheque should be sent to Bell High School, attention Diana Hall, Science Subject Council.

Lunch and light snacks will be provided for all conference participants. In an effort to be more environmentally conscious **we will not be providing water bottles, nor disposable cups – please bring your own mugs!**

Registration Fee after 4:00 pm, Friday January 29th, 2010: \$20.00

Non-members of District 25, Occasional Teachers, non-OCDSB Teachers:

\$20.00

Student Teacher registration fee: \$5.00.

All late fees must be paid at the Registration Desk on February 12th, 2010.

Workshop Registration

Please select three choices for each of the three sessions. Sessions with less than 10 participants will be cancelled and second or third choices will be used.

Please use the on-line registration form to register for the workshops of your choice, at:

<http://spreadsheets.google.com/a/ocdsb.ca/viewform?hl=en&formkey=dExzcf9wSIljSi05cWhfOVFhTXVIZ1E6MA>

For sessions with limited enrolment, first come, first served.

Thank You!

Many thanks to the following partners in education and exhibitors for their financial support:



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Thank you to the following prize contributors:



Faculty of Engineering



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Deep River Science Academy



**McGraw-Hill
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A special thank you for providing us with "loot bags" for all conference participants goes to:

NELSON

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