



# SMEC 2012

Science and Mathematics  
Education Conference

## *Teaching at the heart of learning*

### *Conference Programme*

Dublin City University, Ireland

7<sup>th</sup> – 9<sup>th</sup> June 2012

Hosted by the Centre for the Advancement of Science and Mathematics Teaching and Learning

The following programme outlines the plenary, workshop, contributed, roundtable and poster sessions that will form the ESTABLISH & SMEC conference 2012. While every effort has been made to ensure accuracy, changes to this programme may occur, so please check the notice-board for updates.



ESTABLISH AND SMEC 2012: TEACHING AT THE HEART OF LEARNING, Dublin City University, Dublin Ireland

CONFERENCE PROGRAMME: THURSDAY 7 <sup>TH</sup> JUNE 2012						
12:00	<b>Registration - Lobby of Nursing Building, DCU</b> <b>Set-up of posters - Lobby of Nursing Building</b>					
13:30	<b>Welcome &amp; Opening address - HG20, Nursing Building</b> <b>Dr. Eilish McLoughlin</b> , Coordinator of ESTABLISH & Director of CASTeL with <b>Prof. Brian MacCraith</b> , President of Dublin City University					
14:00	<b>Plenary 1 - HG20, Nursing Building</b> <b>Professor William McComas</b> , University of Arkansas, USA <b>The Many Reasons We Teach Science and What Everyone Should Know about How it Works</b> <b>Chair – Dr. Eilish McLoughlin, CASTeL, Dublin City University</b>					
15:00	WORKSHOPS			<b>ORAL SESSION – HG 22</b> <b>Chair - Dr. Gunnar Friega, Leibniz University, Germany</b>	<b>ROUND TABLE – HG19</b> <b>Facilitators – E. McLoughlin, M. Rannikmaa &amp; J. Holbrook</b>	
	<b>WORKSHOP 1:</b>  <i>HG 18, Nursing Building</i>  <b>M. Linder et al</b>  Martin-Luther-University Halle-Wittenberg, Germany  <i>"Which Energy Source is the Best?" - Teaching on Renewable Energy</i>	<b>WORKSHOP 2:</b>  <i>NG25, Physics Building</i>  <b>P. Šmejkal et al</b>  Charles University, Czech Republic  <i>Polymers around us</i>	<b>WORKSHOP 3:</b>  <i>N201, Physics Building</i>  <b>E. Kedzierska et al</b>  Foundation CMA, Netherlands  <i>Integration of ICT in IBSE</i>	<b>A1: E. ní Fhloinn et al, CASTeL, Dublin City University, Ireland</b> Appropriate settings and supports for third-level diagnostic testing in mathematics  <b>A2: I. Schmidt et al, University of Kassel, Germany</b> Mathematical Modelling in Chemistry Lessons  <b>A3: M. Hourigan et al, Mary Immaculate College, Ireland</b> Primary Mathematics Teacher Education: Teaching at the Heart of Learning  <b>A4: P. Lynch, University of Adelaide, Australia</b> Out-of-field mathematics teachers: professional development as a response	<b>How do we recognise inquiry in the classroom?</b>	
	<b>Refreshments – Lobby of Nursing Building</b>					
	16:40	WORKSHOPS				<b>ORAL SESSION – HG 22</b> <b>Chair - Dr. Marian Kires, Safarik University Kosice, Slovakia</b>
<b>WORKSHOP 1R:</b>  <i>HG 18, Nursing Building</i>  <b>M. Linder et al</b>  Martin-Luther-University Halle-Wittenberg, Germany  <i>"Which Energy Source is the Best?" - Teaching on Renewable Energy</i>		<b>WORKSHOP 4:</b>  <i>XG14, Science Building</i>  <b>K. Baird et al</b>  Indiana University - Purdue University Columbus  <i>Supporting language acquisition and content-specific science access: Universal Design for Learning using Lego WeDos to teach simple machines</i>	<b>WORKSHOP 5:</b>  <i>HG 10, Nursing Building</i>  <b>P. Black</b>  King's College London, UK  <i>Classroom Dialogue</i>	<b>B1: J. Broggy et al, NCE-MSTL, University of Limerick, Ireland</b> Promoting Physics Understanding through the use of Creative and Teacher-Led Continuous Professional Development (CPD)  <b>B2: M. Ganajová et al, Safarik University Kosice, Slovakia</b> Inquiry-based activities for the topic Plastic and Plastic waste  <b>B3: L. Barron et al, CASTeL, Dublin City University, Ireland</b> The views of pre-service and in-service teachers towards IBSE		<b>What is the role of technology in the inquiry classroom?</b>
<b>Poster session &amp; reception - Lobby of Nursing Building</b>						
<b>Conference Dinner - 1838 Club, DCU</b>						

ESTABLISH AND SMEC 2012: TEACHING AT THE HEART OF LEARNING, Dublin City University, Dublin Ireland

CONFERENCE PROGRAMME: FRIDAY 8 <sup>th</sup> JUNE 2012						
09:00	<b>Plenary 2 – HG20, Nursing Building</b> <b>Professor Janet Ainley</b> , University of Leicester, Leicester, UK Describing expert classroom practice in inquiry-based mathematics and science Chair – Dr. Cliona Murphy, CASTeL, St. Patrick’s College Drumcondra					
10:00	WORKSHOPS			<b>ORAL SESSION – HG 22</b> Chair - Dr. Christina Ottendar, University of Umea, Sweden	<b>ROUND TABLE - HG19</b> Facilitators – P. Bernard, I. Maciejowska & M. Krzczkowska	
	<b>WORKSHOP 6:</b> HG 10, Nursing Building C. Harrison et al  King's College London, UK  Creating Space for Formative Assessment in Science Classrooms	<b>WORKSHOP 7:</b> N201, Physics Building Z. Ješková et al  Safarik University Kosice, Slovakia  Inquiry-based teaching and learning of direct current electricity	<b>WORKSHOP 8:</b> HG18, Nursing Building W. McComas  University of Arkansas, USA  Getting your Hands on Aspects of the Nature of Science	<b>C1: S. Simon</b> , University of London, UK Teaching of argumentation within the science curriculum  <b>C2: C. Murphy et al</b> , CASTeL, St. Patrick’s College Drumcondra Teaching about the Nature of Science: Impact of a continuing professional development programme on primary teachers participating in the Fibonacci project.  <b>C3: J. Oversby</b> , University of Reading, UK Mind the Gap  <b>C4: M. Delargey et al</b> , University College Cork, Ireland Mixed Messages concerning Science teaching; the contested feasibility of active learning	How do we recognise and assess inquiry skills?	
	11:20 Refreshments – Lobby of Nursing Building					
	11:40	WORKSHOPS				<b>ORAL SESSION – HG 22</b> Chair - Dr. Claudio Fazio, Palermo University, Italy
<b>WORKSHOP 9:</b> HG 10, Nursing Building A. Andreeva et al  Moscow State University Botanic Garden & University of Bremen  The INQUIRE Project and some ideas for activities relating to biodiversity		<b>WORKSHOP 10:</b> XG14, Nursing Building N. Valanides et al  University of Cyprus  IBSE: Theoretical and Practical Implications	<b>WORKSHOP 8R:</b> HG 18, Nursing Building W. McComas  University of Arkansas, USA  Getting your Hands on Aspects of the Nature of Science	<b>D1: A. Cullinane et al</b> , NCE-MSTL, University of Limerick, Ireland Discover Sensors Kildare VEC Project: an inquiry based science teaching and learning initiative  <b>D2: Z. Majerčáková et al</b> , Safarik University Kosice, Slovakia  Project We teach (learn) creative and active for life  <b>D3: A. Walshe et al</b> , National Council for Curriculum and Assessment, Ireland Assessment fit for purpose- supporting change in Irish science classrooms.  <b>D4: L. Doughty et al</b> , CASTeL, Dublin City University, Ireland Effective Evaluation of Physics Instruction		What are the difference between context-based learning and authentic learning experiences in inquiry?
13:00 Lunch – Student Restaurant						

CONFERENCE PROGRAMME: FRIDAY 8 <sup>th</sup> JUNE 2012					
	5 INDUSTRY VISITS FOR ESTABLISH TEACHERS (OFF SITE)				ORAL SESSION – HG 22 Chair - TBC
14:00-17:00	INDUSTRY VISIT 1:	INDUSTRY VISIT 2:	INDUSTRY VISIT 3:	14:00	<p><b>E1: S. Close et al,</b> <i>St. Patrick's College, Drumcondra</i> Developing Standardised Tests of Post-Primary Students Mathematical Knowledge in the Context of the Implementation of Project Maths</p> <p><b>E2: G. Walshe et al,</b> <i>CASTeL, St. Patrick's College Drumcondra</i> Modelling Science and Mathematics Integration at Second-Level: Prototyping and Proof of Concept of an Intervention.</p> <p><b>E3: B. Lynch et al,</b> <i>National Council for Curriculum and Assessment, Ireland</i> The challenge of change – experiences of Project Maths in the initial group of schools</p>
	INTEL IRELAND	CRANN, TCD	ORDANCE SURVEY IRELAND		
				15:00	Refreshments – Lobby of Nursing Building
14:00-17:00	INDUSTRY VISIT 4:		INDUSTRY VISIT 5:	15:30-17:00	SYMPOSIUM - HG22 Chair: Dr. Therese Dooley, CASTeL, St. Patrick's College, Drumcondra, Ireland
	EIRGRID		MATER HOSPITAL	ANALYSIS OF TEACHING	<p><b>S1: D. Corcoran et al,</b> <i>CASTeL, St. Patrick's College, Drumcondra</i> Analysis of mathematics teaching from the perspective of preservice primary teachers</p> <p><b>S2: P. Conway et al,</b> <i>University College Cork, Ireland</i> Learning to become a 'good' mathematics and science teacher at post-primary level: Insights from the learning to teach study (LETS)</p> <p><b>S3: C. Murphy et al,</b> <i>CASTeL, St. Patrick's College, Drumcondra</i> A snapshot of some of the issues surrounding science education in primary initial teacher education in Ireland.</p>
18:30	Pick-up for Dinner & Social in Dublin City Centre – Arlington Hotel, Quays				

**CONFERENCE PROGRAMME: SATURDAY 9<sup>th</sup> JUNE 2012**

09:00	<b>Plenary 3 – HG20, Nursing Building</b> <b>Professor Paul Black, King's College, London, UK</b> Assessment in Teaching and Learning Chair – Dr. Paul van Kampen, CASTeL, Dublin City University					
10:00	WORKSHOPS			ORAL SESSION – HG 22 Chair -TBC	ROUND TABLE - HG19 Facilitators – C. Fazio, M. Kires & Z. Jeskova	
	<b>WORKSHOP 11:</b> HG 10, Nursing Building C. Harrison <i>et al</i>  King's College London, UK  Fostering Feedback in Science Classrooms	<b>WORKSHOP 12:</b> XG14, Physics Building M. Ekborg <i>et al</i>  Malmo University & University of Umea  An example of ESTABLISH unit: Disability	<b>WORKSHOP 13:</b> HG18, Nursing Building A. Woods <i>et al</i>  Santa Sabina Dominican College, & CASTeL, Dublin City University  Starting with Inquiry	<b>F1: J. Johnston <i>et al</i>,</b> NCE-MSTL, University of Limerick, Ireland The revised senior cycle physics syllabus - making an impact  <b>F2: S. Freire <i>et al</i>,</b> University of Lisbon, Portugal  Wikis as a tool to promote scientific inquiry in pupils from middle school.  <b>F3: M. Boloudakis <i>et al</i>,</b> University of Piraeus, Greece Designing and enacting a inquiry based collaborative learning script using the CADMOS tool  <b>F4: D. Sheridan <i>et al</i>,</b> Dublin Institute of Technology, Ireland Start It Up – Introducing Independent Thinking and Project Skills for First Year Engineering Students	What is the role of inquiry in the curriculum?	
11:20	Refreshments – Lobby of Nursing Building					
11:40	WORKSHOPS			ORAL SESSION – HG 22 Chair - Prof. John Oversby, University of Reading, UK	ROUND TABLE - HG19 Facilitators – M. Ekborg & O. Finlayson	
	<b>WORKSHOP 14:</b> HG 10, Nursing Building C. Fazio <i>et al</i>  Palermo University, Italy  Managing the Inquiry classroom: issues and tentative solutions	<b>WORKSHOP 15:</b> NG22, Physics Building B. Schwarzenbacher  European Schoolnet  Scientix: From Online courses to hands-on experiments	<b>WORKSHOP 13R:</b> HG18, Nursing Building A. Woods <i>et al</i>  Santa Sabina Dominican College, & CASTeL, Dublin City University  Starting with Inquiry	<b>G1: M. McNamara <i>et al</i>,</b> NUI Galway, Ireland For Better or Worse? Teachers' Perspectives on the Changing Role of Standardised Assessment in Primary School Education in Ireland  <b>G2: G. Smith <i>et al</i>,</b> St. Patrick's College, Drumcondra The Western Seaboard Science Project: An Innovative Model of Professional Development to Enhance the Teaching and Learning of Primary Science  <b>G3: M. Sheehan <i>et al</i>,</b> NCE-MSTL, University of Limerick, Ireland The quality of an educational system cannot exceed the quality of its teachers  <b>G4: L. Snajder <i>et al</i>,</b> Safarik University Kosice, Slovakia Inquiry approach in learning selected computer science concepts	How do we generate constructive student arguments in the classroom?	
13:00	Lunch - Canteen					
14:00	<b>Plenary 4 – HG20, Nursing Building</b> <b>Professor Ton Ellermeijer, CMA Foundation, Amsterdam, the Netherlands</b> Implementation of Inquiry Based Science Education (IBSE): is supporting the teachers sufficient to be successful? Chair – Dr. Odilla Finlayson, CASTeL, Dublin City University					
15:00	Closing address - HG20, Nursing Building Dr. Odilla Finlayson – chair of Scientific Committee					