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Atlantic Conference 2010

On Science, Technology, Engineering & Maths Education



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Introduction

Atlantic Corridor works to develop cross-border and international links for a variety of business, education and development projects, between Ireland, Northern Ireland and partner regions in the USA and Canada. It is funded by Department of Foreign Affairs and focussed particularly on the development of mechanisms to share best practice from these partner regions.

The Irish Government's Plan for Economic Renewal published in November 2008 "The Smart Economy" is about building the Ideas Economy, making Ireland an innovation and commercialisation hub of Europe, a country that combines the features of an attractive home for innovative multi-nationals while also being a highly attractive incubation environment for the best entrepreneurs from Ireland and overseas.

Science, Technology, Engineering & Maths [STEM] fields are collectively considered core technological underpinnings of an advanced society and in many forums the strength of the STEM workforce is viewed as an indicator of a country's ability to sustain itself. It is obvious that greater and more meaningful participation in STEM subjects will be key to achieving the reality of a Smart Economy.

The Atlantic Conference 2010 is an Atlantic Corridor initiative, which has been developed by a steering committee whose members include representatives from Georgia Tech Ireland, Birr Castle - Ireland's Historic Science Centre, IDA Ireland, Athlone Institute of Technology, Atlantic Corridor and the education community.

Atlantic Corridor's main objective for this conference is to deliver a forum to share experiences of the issues relating to STEM education and also to encourage and facilitate any pilot actions that may develop as a result of the conference. This conference is a contribution not only to the debate surrounding STEM education but also to the growing development of the Irish Midlands region, as a quality location where STEM-based industries and research are set to play an increasing role in the region's development.

We acknowledge all sponsorship and support we have received from all our sponsors and partner agencies and look forward to working with them in the future to further the outcomes of this important conference.



John Flanagan, Chairperson, Atlantic Corridor.

Booking Form



The cost of the conference is €140. An early-bird booking fee of €120 is available for those who book their conference place by Dec 20th. Group rates are also available.

Please complete the registration form below and send this with your payment to:

Atlantic Corridor, McFadden House, Patrick St., Tullamore, Co. Offaly. Cheques made payable to Atlantic Corridor.

Limited places available - book early to avoid disappointment.

Title: (e.g. Dr/Mr/Mrs/Ms) First Name: Surname:

Organisation:

Address:

Additional comments or special requirements: (Dietary/Accessibility etc.)

Tel. No: Fax: E-mail:

Conference Details

Thursday 25th February 2010

- 9.00am **Registration.**
- 9.30am **Introduction to the conference** - Leo Enright, Conference Chairperson.
- 9.45am **Opening address** - An Taoiseach, Brian Cowen, TD.
- 10.00am **Igniting a passion for innovation: Lessons learned from the first two years of the Science Gallery** - Dr Michael John Gorman, Director, The Science Gallery, TCD.
- 10.20am **Engineers: Why the education system can't produce enough** - Padraig McManus, CEO, ESB.
- 10.40am **Ireland's wave energy opportunity** - Andrew Parish, CEO, Wavebob.
- 11.00am **Questions and answers** - brief discussions session facilitated by Conference Chairperson.
- 11.20am **Tea/coffee.**
- 11.40am **Benefiting the SMART economy by engaging with, and utilising fully, the diversity of scientific and technological talent in Ireland** - Dr Eucharía Meehan, Head of Research & Capital Programmes, the HEA.
- 12.00pm **Teaching, coaching and learning in the Digital Age** - Dr Chris Horn, President, Engineers Ireland.
- 12.20pm **Questions and answers** - facilitated by Conference Chairperson.
- 12.40pm **Lunch.**
- 2.00pm **Keynote address - The myth of ability - Nurturing mathematical ability in all children** - Dr John Mighton, Fields Institute for Research in Mathematical Sciences, University of Toronto, Canada.
- 2.45pm **Questions and answers** - facilitated by Conference Chairperson.
- 3.00pm **Tea/coffee.**
- 3.20pm **Technology enabled education in the 21st century - Learning beyond the bandwidth barrier** - Dr Jeff Evans, Deputy Director & Principal Research Engineer, Information Technology & Telecommunications Lab, Georgia Tech Research Institute, Atlanta, Georgia, USA.
- 3.40pm **Panel discussion to be moderated by Conference Chairperson - How can Ireland address the STEM skills deficit?** - Participants: Dr Michael John Gorman, The Science Gallery; Dr Chris Horn, Engineers Ireland; Peter Brabazon, Discover Science & Engineering and John Hennessy, LM Ericsson.
- 4.00pm **Conference conclusions and close.** Cheese and wine reception for conference delegates.

Official Opening

An Taoiseach, Brian Cowen, TD



Brian Cowen was first elected to Dáil Éireann in June 1984 in the Laois-Offaly bye-election caused by the death of his father, Bernard Cowen. He has been re-elected in every subsequent election. He was appointed Minister for Labour in February 1992 to January 1993. He was Minister for Transport, Energy and Communications from January 1993 to December 1994. He was Minister for Health and Children from June 1997 to January 2000. He became Minister for Foreign Affairs in January 2000 to September 2004. He was Minister for Finance from September 2004 to May 2008. After his re-election to the Dail in June 2007, he was appointed Tánaiste and re-appointed Minister for Finance. Brian Cowen was appointed Taoiseach on May 7th 2008.

Keynote Speaker

Dr John Mighton, University of Toronto, Toronto, Canada.

John Mighton is a mathematician, author, playwright, and the founder of JUMP [Junior Undiscovered Math Prodigies] Math, a charitable organisation that works to educate students in mathematics. Dr. Mighton completed a Ph.D. in mathematics at the University of Toronto and was awarded an NSERC fellowship for postdoctoral research in knot and graph theory. He is currently a Fellow of the Fields Institute for Research in Mathematical Sciences.

His belief that everyone has great mathematical potential led him invent a method of teaching mathematics that inspires measurable higher performance across the board, along with major improvements in students' self-esteem and attitude towards learning. His national best-selling book, "The Myth of Ability: Nurturing Mathematical Talent in Every Child", describes his successes with JUMP, and how anyone can learn and teach math. In May of 2007 John released a follow-up book to "The Myth of Ability" called "The End of Ignorance".

John is also a playwright: his plays have been performed across Canada, Europe, Japan, and the United States. He has won several national awards and his play Possible Worlds was made into a full-length feature film directed by Robert Lepage. He also advised Gus Van Sant, Matt Damon and Ben Affleck on the script for the movie "Good Will Hunting". The movie tells the story of a South Boston whiz kid who elects to clean the halls of learning rather than enter them, working his way through life as a janitor at MIT. But his natural ability to unravel complex equations attracts the attention of a professor who won't let him quit. John Mighton has a small role in the movie and one of his lines is a reference to his main idea in The Myth of Ability; "Most people never get to see how brilliant they can be. They don't find teachers who believe in them. They get convinced they're stupid."

As a mathematician and a playwright, John believes that there are more connections between the arts and the sciences than people generally think, and that scientists and mathematicians are often led by a sense of beauty or elegance, and describe their work in artistic terms. He has made the statement, "If the two worlds communicated more, we'd have much richer art and science as a result."



Conference and Panel Speakers

Leo Enright Conference Chairperson

Very few can speak as knowledgeably on science and space as Leo Enright and we doubt if anyone can do so more enthusiastically. Leo Enright is Ireland's leading broadcaster on Space Exploration and Science. He studied science in University College Dublin and as a Fellow of the World Press Institute studied American history, economics and culture at Macalester College, in St. Paul, Minnesota, USA. Leo Enright is a Science Writing Fellow of the Marine Biological Laboratory at Woods Hole, Ma, USA. Leo has broadcast live commentaries on every major space event since the first Moon landing. He is a member of the Board of Governors of the School of Cosmic Physics at the Dublin Institute for Advanced Studies.

Dr Michael John Gorman, Director, The Science Gallery, Trinity College Dublin.

Dr Michael John Gorman is the founding Director of Science Gallery, a world-first exhibition and inter-active space for science and ideas. He has extensive international experience in public engagement with science and technology, having created and developed public exhibitions and events in the United States, Europe and Ireland. He was a lecturer in Science, Technology and Society at Stanford University and has held fellowships at Harvard University and the Massachusetts Institute of Technology in the United States. Prior to joining Science Gallery, he was Senior Manager for the Discover Science & Engineering programme.

Padraig McManus, CEO, ESB.

Padraig McManus was appointed Chief Executive and Member of the Board of ESB in July 2002. He joined ESB in 1973 and spent fifteen years on the Company's international businesses and later became Managing Director ESB International and Commercial Director, ESB. He is a Board Member of the Irish Management Institute, Business in the community, the Association of Edison Illuminating Companies and the Advisory Board of Ireland Aid. Mr McManus is a member of the Health, Safety & Environment, Business Development & International & Market & Customer Committees of ESB.

Andrew Parish, CEO, Wavebob.

Andrew Parish is CEO of Wavebob, one of the world's leading wave energy technology companies. Andrew is a graduate of the National University of Ireland, the Irish Management Institute and Henley Management College, London. Prior to joining Wavebob, he was Irish Practice Leader for Pera International - a commercial R&D consultancy and previously held management positions in Sustainable Energy Ireland and GE Water and Process Technology. He is a member of the Chartered Institute of Management and the Institute of Engineering & Technology.

Dr Jeff Evans, Deputy Director, Information Technology & Telecommunications Lab, Georgia Tech Research Institute.

Jeff Evans has over 20 years experience in the area of advanced network technologies and applications within the telecommunications field, primarily with the Georgia Tech Research Institute. His current focus is emerging wireless technologies and last-mile access, particularly for rural, underserved communities and school systems. Dr. Evans is currently the Deputy Director for the Information Technology and Telecommunications Lab at Georgia Tech and a Principal Research Engineer at the world-renowned Georgia Tech Research Institute. He is currently working with Atlantic Corridor on an Irish pilot providing high-speed broadband access for a rural school and linking that school directly to the Georgia Tech Campus in Atlanta for science classes.





Dr. Eucharía Meehan, Head of Research & Capital Programmes, the HEA.

Eucharía is Head of Research Programmes and Capital Programmes at the Higher Education Authority (HEA). In that role she is the Director of the Programme for Research in Third Level Institutions (PRTL) which, since 1999, has invested €450m Exchequer funding and €200m private funding to enable higher education institutions to develop their research capabilities in the national interest. Eucharía is a member of numerous national policy, advisory and implementation committees. She also represents Ireland at international fora such as the European Strategy Forum for Research Infrastructure (ESFRI). Her background is in pharmacology and biochemistry, and she also has a number of business and finance qualifications. Prior to joining the HEA in December 2001, she worked for 11 years in the private sector, in Ireland and the US, in strategic planning for research, development and innovation. She is a former Chair of Women in Technology and Science (WITS), a voluntary association which works to promote the awareness of, and participation of, women in all areas of science, engineering and technology. Under her stewardship WITS produced a 'Talent Bank' of women with an SET background, who were qualified and willing to sit on State Boards, and a 'Role Model' initiative targeted at girls in secondary schools.



Dr Chris Horn, President, Engineers Ireland

Dr. Christopher J. Horn received his PhD in Computer Science in 1983. From 1984 until 1994, he was a lecturer in the Computer Science Department at Trinity College, Dublin, where he was involved in many pan-European IT research projects involving distributed computing. He was a co-founder of IONA Technologies in 1991. He was the initial developer of Orbix® and held the joint offices of IONA's president, chief executive officer and chairman of the board from IONA's inception until May 2000. He served as the chairman of the board of IONA from May 2000 to May 2003 when he re-assumed the CEO position, a post he held until his appointment to vice-chairman in April 2005. He is currently the non-executive chairman of China Crest Professionals, a Beijing based consultancy firm specialising in investment in China; the non-executive chairman of Cloudsmith, a US and Swedish based company offering novel services to the global software development community; and non-executive chairman of LeCayla, an Irish firm offering billing and metering services for software vendors offering pay-as-you-go and SaaS business models. He regularly contributes to debate on Ireland's hi-tech industry and is a member of the Irish government's Innovation Task Force.



John Hennessy, Managing Director & Country Manager, LM Ericsson.

John Hennessy joined Ericsson in October 1973 as an engineer and has held responsibilities in Technology, Marketing and Business Units, before being appointed Managing Director of Ericsson in Ireland in May 2003. John has also spend a number of years on overseas assignments, Sweden 1977-1980 and UK 2001 -2003. In addition to his role at Ericsson, John also serves as a board member of IBEC (Irish Business and Employer Confederation), Swedish/Irish Business Federation and LRC (Labour Relations Commission, Dept of Enterprise Trade and Employment).



Peter Brabazon, Programme Director of Discover Science & Engineering, Dublin, Ireland.

The overall objective of the Discover Science & Engineering Programme is to raise the level of the public's understanding of scientific and technological issues and to bring about a significant cultural shift in attitudes towards careers in science, engineering and technology. The programme is managed by Forfás on behalf of the Office of Science and Technology. Peter was responsible for leading the Industry and general Energy Awareness programmes with Sustainable Energy Ireland before joining Forfás in 2004. He is an electrical engineer and is from Dublin.



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