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## Promotion to Rank of Associate Professor



We would like to congratulate Rory O'Connor on his recent promotion to the rank of Associate Professor at Dublin City University. Rory has also recently been appointed to the role of Editor in Chief of the Computer Standards and Interfaces journal, published by Elsevier. Rory is currently serving as Head of the School of Computing in DCU and is a senior researcher in Lero. His research interests are centered on the processes whereby software intensive systems are designed, implemented and managed. Rory is an active member of the international standards community, where he represents Lero as Ireland's Head of Delegation to the ISO for Software & Systems Engineering. We wish him well in his new roles.



## Innovation Showcase

Lero was represented at the Innovation Showcase, held in the Convention Centre in Dublin on December 2nd. The Innovation Showcase promotes research in Ireland and gives companies an opportunity to learn more about collaborative research, development and innovation. The sold out event was attended by 2,000 participants. The event was organised by IDA, Enterprise Ireland and Science Foundation Ireland. Paul Clarke from DkIT and CTO of MDevSpice was one of 13 entrepreneurs selected to pitch to investors.

## WELCOME TO THE LATEST ISSUE OF THE LERO NEWSLETTER



In this issue you can read about a number of interesting events attended by Lero members. You can also read about the great work that Lero has been doing in terms of Education and Outreach, and in particular a recent Google RISE award. Lero has also been doing a lot in terms of gender equality (see articles on Athena SWAN and International Women's Day), building on the work that Clare has done with encouraging girls in computer programming.

This issue also has a number of "good-news" pieces, including awards, graduations and a promotion! Please continue to use Linx to submit items for future newsletters.

*Best wishes, Mike.*

## New Foundations 2015

Dr Klaas-Jan Stol received a New Foundations 2015 award from the Irish Research Council for his continued work on Inner Source, following support from a previous New Foundations award in 2014. The New Foundations programme, launched by Minister Jan O'Sullivan, aims at supporting researchers by providing travel funding. Dr Stol was awarded the maximum of 6,000 euro.

## St Patricks Day in Washington



Mike Hinchey and Brendan O'Malley attended an event organised by Science Foundation Ireland (SFI) to celebrate and build scientific collaboration between Ireland and the United States as part of the St Patrick's Day Festival. The event, held in Washington, was attended by An Taoiseach, Enda Kenny TD and by many Irish-Americans along with representatives from a wide range of companies. Representatives from all 12 SFI Research Centres travelled to the USA for this event.

# Lero wins Google Rise Award

LERO HAS BEEN NAMED BY GOOGLE AS ONE OF THE GLOBAL WINNERS OF THE 2015 RISE AWARDS



Clare McInerney



*As a society we must encourage more girls to take up computing... We aim to show girls that much of computing is about problem solving and collaborative thinking*



Google's RISE programme, which began in 2010, is designed to support organisations that encourage girls and under-represented students in extracurricular computer science programmes. This year Google will contribute \$1.5m to 37 organisations in 17 countries.

Lero will utilise its \$17,000 award to promote and organise computing summer camps at the University of Limerick aimed specifically at female secondary students from the age of 14 plus.

"As a society we must encourage more girls to take up computing," commented Clare McInerney, Education and Outreach Manager at Lero. "Many girls are put off computing from an early age because of its nerdy, geeky image. We aim to show girls that much of computing is about problem solving and collaborative thinking and that computing can be applied in diverse and varied domains."

She pointed out that the gender proportion in most IT undergraduate courses in Ireland is overwhelmingly male. "This is not in the interests of female careers or Ireland at a time there is huge demand for IT skills. We are very appreciative to Google for this award."

Lero, which is supported by Science Foundation Ireland, specialises in

collaborative software research with a strong industry focus across six universities and the Dundalk Institute of Technology. Lero has also played a key role in encouraging primary school kids to learn about computing through its Scratch programme.

Lero also led the development of a schools course in computing which is due to be introduced to the Junior Cycle curriculum.

Over the last six years \$4.3m in RISE Awards has been granted to 205 organisations across 25+ countries reaching over 200,000 students.

Commenting on the awards Roxana Shirkhoda, Outreach Program Manager at Google said, "As a company started by two students with a curiosity for creating technology, we recognise the role Google can play in exposing youth to computer science. It is critical for students, particularly girls, underrepresented minorities and students of low economic background, to recognise they have the power not only to consume technology - but create it.

"We're invigorated by the work of the 2015 RISE Award winners and look forward to partnering with them to inspire the next generation of computer scientists around the world."

# Education & Outreach

## CONNECTED ASSISTED LIVING

Prof. Paolo Prinetto from Politecnico di Torino/CINI (Italy) visited Lero during December. His talk on "Connected Assisted Living 2.0" outlined the development of the AsTech National Laboratory of CINI and highlighted several projects where software, hardware, sensors, robots, and virtual characters cooperate to support deaf and deaf-blind users.



Prof. Paolo Prinetto, Prof Don Barry and Prof Tiziana Margaria

In his capacity as President of CINI, the Consortium of 39 Italian Universities who conducts research in Computer Science and Computer Engineering, he was introduced by Lero to SFI and discussed CINI's 25 years of experience in collaboration between universities.

UL President Prof. Don Barry and Prof Prinetto expressed their strong support for bilateral cooperation initiatives in research and education that might bring the two institutions closer, especially concerning partnerships in the context of Horizon 2020.

## Mini Scientist at Intel Shannon



Intel mini-scientist prize-winner Jack Haverty, 5th class, Ballycar NS, Co. Clare, is presented with his award for his project entitled "How to make Android Apps" by Clare McInerney from Lero.

Clare McInerney participated in the Intel Mini Scientist competition that was held in Intel Shannon on Friday 12<sup>th</sup> of December. There were 22 primary schools participating in the competition. The 4 winning projects from the Shannon Regional Event proceeded to the National Mini Scientist Final which took place in the Science Gallery in Dublin on January 23<sup>rd</sup> 2015.

## 2015 ECIS Doctoral Consortium

Trevor Clohessy has been selected by the 2015 ECIS doctoral consortium committee to attend this year's event which will be held from the 23<sup>rd</sup> May to the 25<sup>th</sup> May in Enschede, The Netherlands. Selection to the ECIS Doctoral Consortium was very competitive. The ECIS Doctoral Consortium aims to facilitate a collegial and affirmative environment where doctoral students currently working on dissertations can share their work and receive constructive feedback



## Limerick IT

The Limerick for IT event took place on Thursday March 5<sup>th</sup> in Dell Limerick. It was organised to allow people to; learn about the huge range of careers in Information Technology (IT) and Computing; to understand which college courses prepare you for these IT/Computing careers and finally to see some cool technology (Oculus Rift headsets, Blue tooth scanner, leap motion sensor etc.) It also enabled students, graduates, academics, and industry representatives to meet and discuss the opportunities and life experiences.

## Hour of Code

Clare McInerney visited Laurel Hill Coláiste Limerick to participate in the Hour of Code during Computer Science Education week on Wednesday December 10<sup>th</sup>. The Hour of Code is a global movement reaching tens of millions of students in 180+ countries. For more details see <http://hourofcode.com/ie>

## Transition Year Students @ Lero



TY students Jack Clarke and Hannah Perry with Prof John Murphy of Lero@UCD

Over the last month several transition year students have spent time in Lero. There were 5 students in Lero @ UL and 2 in Lero @ UCD. Jack Clarke and Hannah Perry learned about Python and C programming while at UCD and performed some timing synchronisation experiments with Raspberry Pis. They also made some Internet traffic profile measurements.

# Invited Speakers & Talks



Brian Fitzgerald delivered a keynote, 'Two's Company, Three's a Crowd: A Case Study of Crowdsourcing Software Development', at the SOFSEM 2015 Conference, in the Czech Republic, 25 Jan 2015

Dr Ita Richardson presented her research in University of Limerick Hospital on Wednesday and Friday of last week. Her talk to Interns from the Graduate Entry Medical School focused on Software Quality Requirements in Healthcare. At the ULH Grand Rounds, she presented on 'Challenges for Healthcare – Leveraging Software and Technology'.

Lorraine Morgan gave a keynote talk entitled 'Factors Affecting the Adoption of Cloud Computing' at the Data, Digital Business Models, Cloud Computing and Organisational Design Conference held at the Université Paris –Sud in November 2014.

'Cloud Detours: A Non-Intrusive Approach for Automatically Adapting Legacy Applications to the Cloud' was the title of the talk given by Prof Nabor Mendonça, University of Fortaleza, Brazil in DCU on 23rd February. In this talk Prof Mendonca presented his on- going work towards supporting automatic software adaptation to the cloud. The work follows a non-intrusive code transformation approach that enables one to seamlessly cloudify an existing legacy application by automatically replacing some of its required (local) services (such as a file or database service) by similar services in the cloud.



## 1st International Workshop on Smart City Clouds

Trevor Clohessy presented a paper at the 1st International Workshop on Smart City Clouds: Technologies, Systems and Applications. The event was part of the 7th IEEE/ACM International Conference on Utility and Cloud Computing (UCC2014) in London. The paper by Clohessy, T., Acton, T., Morgan, L. was entitled 'Smart City as a Service (SCaaS) - A Future Roadmap for E-Government Smart City Cloud Computing Initiatives'.

## ROYAL IRISH ACADEMY AWARD FOR KLAAS



Dr Klaas-Jan Stol was awarded a Charlemont Award of 2,000 euro by the Royal Irish Academy ([www.ria.ie](http://www.ria.ie)). The grant was awarded for work on adapting agile software development methods to regulated and critical domains such as medical, aerospace and automotive

## Let's do Design

Dr Ita Richardson, in conjunction with her Industry Fellowship, is giving a series of outreach talks in Rockchapel Primary School. Her first two talks were titled: 'How does the Internet work?' and 'Software Engineering - Let's do Design'.

# Events

## Software Process in Florida

Lero was represented at the Health Software Process Improvement Conference in Orlando, Florida by Marti Lotter, UL Hospital and her PhD supervisors Dr Louise Reid, UL Hospital and Dr Ita Richardson Lero@UL. They presented two posters, the first, 'RQAP: Quality Performance Measurement for Radiology' and 'Medical Software Quality: Ensuring Correctness in the Clinical Environment'. Ita also made a presentation about Medical Software Quality. Their research was well received and they attended many interesting talks which were of relevance to the Healthcare research within Lero.



Ita, Marti and Louise@ Kennedy Space Centre

## Fighting Software Architecture Entropy, through Increased Awareness and Repair

This industry-event took place at the IDA in Dublin and was hosted by Jim Buckley and Sebastian Herold, Lero @ UL. The invited speaker was Chris Chedgy and it included presentations from software architecture researchers and practitioners, including a panel discussion (led by issues from the industry participants). It also provided an opportunity to network and discuss particular architecture issues offline with other practitioners, academic researchers and Structure101 co-founder Chris Chedgy.

## INNER SOURCE FROM THE TRENCHES

Lorraine Morgan and Klaas-Jan Stol hosted an industry workshop entitled "Inner Source from the Trenches" in Galway on 19th February 2015. The workshop featured four expert speakers: Dr Vijay K Gurbani from Alcatel-Lucent / Bell Laboratories, who spoke about the Inner Source initiative at Bell Labs; Prof. dr. Dirk Riehle, who spoke about the Inner Source initiative that he set up at SAP, and Dermot Hughes and John Landy, who presented the Inner Source initiative at Ericsson in Athlone. This was followed by a panel discussion. The workshop attracted 25 participants.

## BEST PAPER AWARD @ 2015 INTERNATIONAL CONFERENCE ON NATURE OF COMPUTATION AND COMMUNICATION



The paper "Modeling Swarm Robotics With KnowLang", by Emil Vassev and Mike Hinchey (presenter), got the "Best Paper Award" at the 2014 International Conference on Nature of Computation and Communication in Ho Chi Minh City, Vietnam in November 2014.

## Best Paper of Session Award @ 33<sup>rd</sup> Digital Avionics Systems Conference

The paper "Autonomic Control Architecture for Avionics Software of Unmanned Space Vehicles", by Carlos C. Insaurralde and Emil Vassev, got the "Best Paper of Session Award" at the 33<sup>rd</sup> Digital Avionics Systems Conference, Colorado Springs, Colorado, USA, October 2014.

# Athena SWAN is Launched

The Athena SWAN Charter in Ireland will award academic institutions and departments for cultural and systemic changes to address gender inequality, particularly in STEM and medicine.

It was a packed house at the event in the Department of Education and Skills in Dublin to officially launch the **Athena SWAN** Charter for the higher education sector in Ireland.

Seven universities, 14 institutes of technology and the Royal College of Surgeons have now signed up to the charter, thereby committing them to advance women's careers in science, technology, engineering, mathematics and medicine (STEMM) employment in academia.

Dr Ita Richardson attended the National Athena SWAN launch by Minister of Education and Science, Jan O'Sullivan. Ita is a member of the National Athena SWAN Steering Committee, the University of Limerick Athena SWAN steering committee, and the Faculty of Science and Engineering Athena SWAN committee.



Mr Tommy Foy, HR Director, Ms Bernie Quilligan, Science & Engineering Faculty Manager, Dr Ita Richardson, Lero and UL Athena SWAN Champion, Ms Ruth Gillian, ECU Athena SWAN, Prof Don Barry, President, Ms Marie Connolly, HR Manager, Ms Clare O'Hagan, Research Fellow, FESTA.



Ms Marie Connolly, HR Manager, Mr Tommy Foy, HR Director, Ms Jan O'Sullivan, Minister for Education & Science, Dr Ita Richardson, Lero and UL Athena SWAN Champion.

## GRADUATIONS

REBECCA YATES & JACEK ROSIK BOTH GRADUATED FROM THE UNIVERSITY OF LIMERICK IN JANUARY 2015. CONGRATULATIONS AND WELL DONE TO BOTH OF THEM!

Dr Jim Buckley and Jacek Rosik



Dr Jim Buckley, Dr Rebecca Yates and Dr Norah Power

# THINK TANK IN MEXICO



IFIP Working Group 2.9 on Software Requirements Engineering met in Cozumel, Mexico, between in February 2015. The group is an established research think tank of the world's leading researchers in requirements engineering, and holds an invitation only meeting annually to discuss the latest research results and promising research directions. This year's meeting featured a very strong presence from Lero researchers, including Dr Liliana Pasquale and Prof Brian Fitzgerald, past group Chair Prof Bashar Nuseibeh, and current Chair and former Lero Director, Professor Kevin Ryan.

## The Best of the RESG

Liliana Pasquale gave a talk titled "Engineering Topology Aware Adaptive Security: Preventing Requirements Violations at Runtime" at the Best of RESG research 2014. The event was held at the British Computer Society in London on December 4 and was aimed to celebrate the outstanding research published by the requirements engineering specialist group members during 2014. More info can be found here: <http://www.resg.org.uk/best-of-resg-research-2014/>

## More from NUIG!

Lero in NUI Galway hosted a seminar by Dr. Nattakarn Phaphoom, Free University of Bozen-Bolzano, Italy on the Benefits, Barriers and Implementation Strategies of Enterprise Cloud Adoption.

## Viva

Congratulations to Michael Dever (Lero@DCU) who successfully defended his PhD thesis entitled "AutoPar: Automating the Parallelization of Functional Programs" on Friday 13th March. His supervisor was Geoff Hamilton, external examiner Hans-Wolfgang Loidl (Heriot Watt University) and internal examiner Kevin Casey.



## Best Paper of Session Award @ 33<sup>rd</sup> Digital Avionics Systems Conference

The paper "Autonomic Control Architecture for Avionics Software of Unmanned Space Vehicles", by Carlos C. Insaurralde and Emil Vassev, got the "Best Paper of Session Award" at the 33<sup>rd</sup> Digital Avionics Systems Conference, Colorado Springs, Colorado, USA, October 2014.

## INTERNATIONAL WOMEN'S DAY

The University of Limerick celebrated International Women's Day with the launch of the UL bid for an Athena SWAN Award, which recognises and celebrates good practice in recruiting, retaining and promoting women in STEMM (science, technology, engineering, mathematics and medicine) in higher education. At a UL conference to mark International Women's Day chaired by RTE's Claire Byrne, UL President Professor Don Barry reiterated the institution's commitment to gender equality at all levels in UL. The focus of this year's conference was the value of gender diversity in Science, Technology, Engineering, Mathematics and Medicine (STEMM).



**Marie Connolly, Ita Richardson Lero @ UL, Edwina Currie**

# Publications

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