

**General Framework and Plenary Keynote Speakers of the Collocated Conferences**  
**The 9th International Multi-Conference on Complexity, Informatics and Cybernetics: IMCIC 2018**  
**The 9th International Conference on Society and Information Technologies: ICSIT 2018**  
**The 8<sup>th</sup> Ibero-American Conference on Complexity, Informatics and Cybernetics**  
*Octava Conferencia Iberoamericana de Complejidad, Informática y Cibernética: CICIC 2018*

**Orlando, Florida USA – March 13 - 16, 2018**

**Tuesday, March 13<sup>th</sup>, 2018**

9:00 AM – 12:00 PM and 1:00 PM – 5:00 PM      *Registration*

10:00 AM – 12:00 PM: **Participatory Workshop**

Speaker: **Professor T. Grandon Gill**, University of South Florida, USA,  
*“Developing and Using Cybersecurity Discussion Case Studies”*, NSF-  
SaTC Funded Workshop

12:00 PM – 1:00 PM      Lunch (on your own)

1:00 PM – 1:45 PM      **Participatory Workshop:**

Speaker: **Professor T. Grandon Gill**, University of South Florida, USA,  
*“Developing and Using Cybersecurity Discussion Case Studies”*, NSF-  
SaTC Funded Workshop

1:45 PM - 3:00 PM      **Participatory Workshop:**

Speaker: **Dr. Ira Blatstein**, John Hopkins University, USA,  
*“Strategic Planning for the Second Half of Your Life”*

3:00 PM – 4:00 PM      **Conversational Session**

Speakers: **Dr. Nanda van der Stap**, University of Applied Sciences,  
Utrecht, Netherlands and **Dr. Risa Blair**, Kaplan University, USA,  
*“The Educational Features of Peer Review”*

4:00 PM - 4:30 PM      Coffee Break

4:30 PM – 5:30 PM      **Conversational Panel:**

Panelists: **Professor T. Grandon Gill**, University of South Florida, USA,  
**Dr. Suzanne Lunsford**, Wright State University, USA, and **Dr. Nagib  
Callaos**, International Institute of Informatics and Systemics (IIS), USA,  
*“Integrating Research, Education, and Real Life Problem Solving:*

*Transforming R&D into Innovation and Relating Research and Consulting” Being a conversational panel, each attendee may have the role of a panelist.*

5:30 PM – 6:30 PM    **Participative Panel:**

Panelists: **Professor T. Grandon Gill**, University of South Florida, USA, and **Dr. Nagib Callaos**, International Institute of Informatics and Systemics (IIS), USA, “*Explicitly Relating Episteme and Doxa: Academic Publishing Issues*” **Being a conversational session, each attendee may have the role of a panelist.**

*\* Participants in conversational participative sessions or participatory panels will have the opportunity to write position or reflection papers related to the topics discussed in the respective session. These papers might be published in the post-conference proceedings, with no additional charge, as invited papers, after going through internal editorial review. The deadline for these papers will be 21 days after the conference is over. One of the objectives of these conversational sessions is to provide a learning process through the sharing of ideas, experiences, opinions, and knowledge, via inter-disciplinary communication. This learning might generate, in turn, position or reflection papers that should be, in our opinion, included in the proceedings of the conference, because a) they are part of its consequences and the information and knowledge that was shared through it, and b) they might, in turn, generate more inter-disciplinary communication.*

*Conference participants who attend the whole workshop and/or tutorial will receive an attendance certificate signed by its speaker and/or facilitator.*

## **Wednesday, 14<sup>th</sup>, 2018**

8:00 AM – 12:00 PM and 1:00 PM – 6:00 PM                      **Registration**

7:45 AM – 10:00 AM    **Plenary Session** of all Collocated Events (with complimentary plated breakfast for the plenary session’s attendees)  
Session Co-chairs: **Professor T. Grandon Gill**, University of South Florida, USA and **Dr. Suzanne Lunsford**, Wright State University, USA

7:45 AM – 8:00 AM    Short Announcements.

8:00 AM – 8:35 AM    Keynote Speaker: **Professor T. Grandon Gill**, University of South Florida, USA, “*Closing the Loop: Incorporating Student-Developed Content into the Curriculum*”

- 8:35AM – 9:10 AM Keynote Speakers: **Professors Suzanne Lunsford** and **William Slattery**, Wright State University, USA, “*On-Line E-Portfolios in Higher Education - A Multidisciplinary Approach*”
- 9:10 AM – 9:45 AM Keynote Speaker: **Professor John Coffey**, University of West Florida, USA, “*On Social Engineering Attacks and Unintended Data Disclosures: Two Major Categories of End-User Cybersecurity Error*”
- 9:45 AM - 10:00 AM Q&A
- 10:00 AM – 12:00 PM Breakout Sessions
- 12:00 PM – 1:00 PM Lunch (on your own)
- 1:00 PM – 3:35 PM **Plenary Session** of all Collocated Events  
Session Co-chairs: **Professor John Coffey**, University of West Florida, USA, and **Dr. Lila Rajabion**, University of South Florida, Sarasota-Manatee, USA
- 1:00 PM – 1:35 PM Keynote Speaker: **Dr. Lila Rajabion**, University of South Florida, Sarasota-Manatee, USA, “*Generation Z Students: Will They Change Our Classrooms?*”
- 1:35 PM – 2:10 PM Keynote Speaker: **Professor Donald Ropes**, Inholland University of Applied Sciences, Netherlands, “*Design Science Research: Bridging Rigor and Relevance*”
- 2:10 PM – 2:45 PM Keynote Speaker: **Professor Magda Huisman**, North-West University, South Africa, “*Mobile Application Development: Should We Bother with Systems Development Methodologies?*”
- 2:45 PM – 3:20 PM Keynote Speaker: **Professor Anastassis Kozanitis**, University of Quebec in Montreal, Canada, “*Can Less Teaching Bring more Learning? Leveraging Learning through Feedback.*”
- 3:20 PM – 3:35 PM Q&A
- 3:35 PM – 4:00 PM Coffee Break
- 4:00 PM – 6:30 PM Breakout Sessions
- 7:00 PM – 8:30 PM **Welcome Reception: Buffet Dinner.**

## **Thursday, March 15<sup>th</sup>, 2018**

8:00 AM – 12:00 PM and 1:00 PM – 6:00 PM

**Registration**

7:40 AM – 10:00 AM **Plenary Session** of all Collocated Events (with complementary plated breakfast for the attendees to this plenary session)  
Session Co-Chairs: **Professor T. Grandon Gill**, University of South Florida, USA, and **Professor Detlev Doherr**, University of Applied Sciences, Germany

8:00 AM – 8:35 AM Keynote Speaker: **Dr. Maureen Lucy Schafer**, Georgetown University, USA; *“The Power of Effective Collaboration between Industry and Academia.”*

8:35 AM – 9:10 AM Keynote Speaker: **Dr. Ira Blatstein**, Johns Hopkins University, USA, *“Strategic Planning for The Second Half of Your Life”*

9:10 AM – 9:45 AM Keynote Speaker: **Professor Detlev Doherr**, University of Applied Sciences, Germany, *“Humboldt’s Vision of a Smart(er) World”*

9:45 AM – 10:00 AM Q&A

10:00 AM – 12:00 PM Breakout Sessions for IMCIC 2018 and ICSIT 2018

10:00 AM – 12:00 PM Plenary Session for CICIC 2018 (In Spanish/Portuguese)

Moderadores: **Dra. Fátima Consuelo Dolz De Moreno**, Universidad Mayor de San Andrés, La Paz, Bolivia y **Dr. Jesús Salvador Vivanco Florido**, Universidad Autónoma de Aguascalientes, México,

10:00 AM – 10:30 AM Ponencia Plenaria: **Dr. Jesús Salvador Vivanco Florido**, Universidad Autónoma de Aguascalientes, México, *“Adquisición de Conocimientos a través de las Herramientas TIC para la Sustentabilidad de las PYMES”*

10:30 AM – 11:00 AM Ponencia Plenaria: **Dra. Fátima Consuelo Dolz De Moreno**, Universidad Mayor de San Andrés, La Paz, Bolivia, *“Inclusión con TIC: Usabilidad de Colores para Pueblos Indígenas”*

11:00 AM – 11:30 AM Ponencia Plenaria: **Dra. Ana María Miralles Castellano**, Universidad Pontificia Bolivariana, Colombia, *“Posibilidades y Retos de Investigar desde la Síntesis: Relato de una Experiencia Investigativa”*

- 11:30 AM – 12:00 PM Ponencia Plenaria: **Dr. Nagib Callaos**, Universidad Simón Bolívar, Venezuela; International Institute of Informatics and Systemics, USA, “*Integración Implícita y Explícita entre Episteme (Conocimiento) y Doxa (Opinión) en Publicaciones Académicas.*”
- 12:00 PM – 1:00 PM Lunch (on your own)
- 1:00 PM – 3:35 PM **Plenary Session** of all Collocated Events  
Session Co-Chairs: **Dr. Risa Blair**, Kaplan University, USA and **Dr. Nanda van der Stap**, University of Applied Sciences, Utrecht, Netherlands
- 1:00 PM – 1:35 PM Keynote Speaker: **Professor Ronda C. Sturgill**, University of Tampa, USA, “*Implementing Hybrid Education: Short-Term and Long-Term Considerations*”
- 1:35 PM – 2:10 PM Keynote Speaker: **Professor. Herwig Mayr**, University of Applied Sciences Upper Austria, Hagenberg, Austria, “*Teaching (Software) Project Management Using LEGO Bricks*”.
- 2:10 PM – 2:45 PM Keynote Speaker: **Dr. Paweł Poszytek**, Ministry of National Education of the Republic of Poland, Poland, “*How to Measure the Unmeasurable – The Nature of Composite Indices and Their Application in Educational Research*”
- 2:45 PM – 3:20 PM Keynote Speaker: **Professor T. Grandon Gill**, University of South Florida, USA, “*Designing a Doctoral Program to Bridge the Gap between the Academy and Industry*”
- 3:20 PM – 3:35 PM Q&A
- 3:35 PM – 4:00 PM Coffee Break
- 4:00 PM – 6:30 PM Breakout Sessions

### **Friday, March 16<sup>th</sup>, 2018**

- 8:00 AM – 12:00 PM **Registration**
- 7:45 AM – 10:00 AM **Plenary Session** of all Collocated Events (with complementary plated breakfast for the attendees to this plenary session)

Session Co-Chairs: **Professors Madelyn Flammia and Houman A. Sadri**, University of Central Florida, USA

- 8:00 AM – 8:35 AM Keynote Speaker: **Professor Mohammad Ilyas**, Florida Atlantic University, USA, “*Globalization and Higher Education*”
- 8:35 AM – 9:10 AM Keynote Speakers: **Professors Madelyn Flammia and Houman A. Sadri**, University of Central Florida, USA, “*The Role of Interdisciplinary Collaboration in Academic Globalization*”
- 9:10 AM – 9:45 AM Keynote Speaker: **Professor Paul Nugent**, Western Connecticut State University, USA, “*An Exploration of Intrinsic and Extrinsic Properties and Implications for Practice*”
- 9:45 AM – 10:00 AM Q&A
- 10:00 AM – 12:00 PM Breakout Sessions
- 12:00 PM – 1:00 PM Lunch (on your own)
- 1:00 PM – 3:35 PM **Plenary Session** of all Collocated Events  
Session Co-Chairs: **Dr. Risa Blair**, Kaplan University, USA and **Dr. Nanda van der Stap**, University of Applied Sciences, Utrecht, Netherlands
- 1:00 PM – 1:35 PM Keynote Speaker: **Dr. Benjamin Apelojg**, University of Potsdam, Germany, “*Management of Learning - Implications from Needs and Emotions*”
- 1:35 PM – 2:10 PM Keynote Speaker: **Dr. Habil. Erzsebet Dani**, University of Debrecen, Hungary, ” *'Publish or Perish' Can Become 'Publish AND Perish' in the Age of Objective Assessment of Scientific Quality*”
- 2:10 PM – 2:45 PM Keynote Speakers: **Dr. Lorayne Robertson**. University of Ontario Institute of Technology (UOIT), Canada and **Ms. Laurie Corrigan**, Peterborough Victoria Northumberland and Clarington District School Board, Canada; “*Building Collaboration and Partnerships between Research and Practice*”
- 2:45 PM – 3:20 PM Keynote Speaker: **Professor Suzanne Lunsford**, Wright State University, USA; “*Real World Experience: Developing Novel Sensors - An Interdisciplinary Approach*”

3:20 PM – 3:35 PM Q&A

3:35 PM – 4:00 PM Coffee Break

4:00 PM – 6:30 PM Breakout Sessions

7:00 PM – 8:30 PM **Awards Ceremony and Toast**

***Award Certificates will only be delivered at the Awards Ceremony. No exceptions will be made under any circumstances.***

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***Participatory Workshop – Tuesday March 13<sup>th</sup>, 2018, 10:00 - 12:00 AM and 1:00 - 1:45 PM***



**Professor T. Grandon Gill**

University of South Florida, USA  
Academic Director of the Doctorate in Business Administration  
Editor-in-Chief of *Informing Science*  
Editor of the *Journal of IT Education*  
Founding Editor of *Journal of Information Technology Education*  
*Participatory Workshop*  
*“Developing and Using Cybersecurity Discussion Case Studies”*  
NSF-SaTC Funded Workshop

***Intended Participants:*** Conference participants, specifically 1) faculty and doctoral students interested in using the case method, developing discussion and research cases, and employing cybersecurity discussion cases in the classroom and online and 2) executives and managers who have an interest in participating in case development or in using case discussions in cybersecurity training.

***The Case Method:*** The case method is an interactive teaching method that involves using a detailed description of a real world decision situation to stimulate an in-depth classroom discussion, typically lasting 75 to 90 minutes. The principal pedagogical objective of the approach, which was originally developed and refined at *Harvard Business School*, is to help students improve their *judgment under conditions of considerable uncertainty and ambiguity*. As such, the case studies developed to support these discussions rarely have a “right” answer and the actual outcome associated with a particular decision tends to be less important than the process through which the decision was reached.

***Workshop Objectives:*** The workshop is intended to provide participants with an introductory look at the case method, with a particular emphasis on its application to cybersecurity situations. Topics to be covered will include:

- *Types of case studies and their application:* The term “case study” means many things to different people. A framework for understanding the various types of case studies and their appropriate uses will be introduced.
- *Facilitating case discussions:* Using cases as an instructional medium. Participants will be given the opportunity to engage in a discussion of an abbreviated case.

- *Developing discussion cases:* The steps in the process of developing a discussion case will be examined, both from the case writer's and organization's perspective.
- *Publishing discussion cases:* Outlets for publication of peer-reviewed discussion cases will be examined, as well as other outlets through which cases can be distributed. The existing collection of cybersecurity cases will be reviewed.

**Acknowledgement:** The materials developed for the workshop are being funded as part of a 2-year project that was funded by the *Secure and Trustworthy Computing* (SaTC) program of the U.S. *National Science Foundation* (NSF Award #1418711, "EDU: Developing Open Authentic Case Studies for a MS in Cybersecurity Capstone Course") specifically intended to develop case studies for use in a cybersecurity curriculum. Any opinions, findings, and conclusions or recommendations expressed in this material provided or presented in the workshop are those of the facilitator(s) and do not necessarily reflect the views of the National Science Foundation.

### Short Bio

**Dr. Grandon Gill** holds an AB (cum laude) from *Harvard College* and an MBA (high distinction) and DBA from *Harvard Business School*. He teaches introductory and intermediate courses in programming for undergraduates and also teaches case method capstone courses in the MIS undergraduate, MS-MIS and Executive MBA programs. He has also taught a variety of IT courses during his tenure at USF, from computer systems concepts to doctoral case methods. He received USF's Excellence in Undergraduate Teaching Award in 2007 and 2013.

Dr. Gill has published or edited more than 40 case studies, most recently for the *Journal of IT Education: Discussion Cases*. His recent book, *Informing with the Case Method*, has been the basis of workshops in the U.S. and around the globe. Thus far in 2013, venues have included the *NSF TUES PI Conference* in Washington D.C., *RMIT: Vietnam* in Ho Chi Minh City, the *United Nations Staff College* in Turin, Italy, and at the *3rd International Symposium on Integrating Research, Education, and Problem Solving (Special Track on Case Methodologies)*, Orlando Florida.

Dr. Gill is passionate about using technology as a teaching tool and has studied distance learning, strategy, and practice, alternative course designs, and tools for course development and delivery, all under the general heading of informing science. His research in this area has been published in many journals, including *Informing Science*, *Decision Sciences Journal of Innovative Education*, the *Journal of Information Systems Education*, *eLearn*, and the *Journal of IT Education*. He has also published multiple times in *MIS Quarterly*, the MIS discipline's leading journal—his most recent article considering the MIS fields from an informing science perspective. His academic service includes stints on the editorial boards of six journals. He is currently Editor-in-Chief of *Informing Science: the International Journal of the Emerging Transdiscipline* and the *Journal of IT Education: Discussion Cases*. He serves as a Governor and Fellow of the Informing Science Institute.

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***Participatory Workshop – Tuesday March 13<sup>th</sup>, 2018, 1:45 PM – 3:00 PM***



**Dr. Ira Blatstein,**  
**John Hopkins University. USA**  
**Division of Public Safety Leadership, School of Education**  
**Initially: Applied Physics Laboratory;**  
**later: Director of Strategic Planning.**

**USA Presidential Rank Distinguished Award, and**  
**USA Presidential Rank Meritorious Award**

***Participatory Workshop***  
***"Strategic Planning for the Second Half of Your Life"***

### **Short Abstract**

Increased life expectancy has led to increased opportunities for multiple careers, hobbies, and interests over a person's lifetime. In this workshop, individuals will engage in a very brief version of a strategic planning process for developing a long-range perspective on their future.

### **Short Bio:**

Dr. Ira Blatstein teaches courses in strategic planning, change management, and leadership; as well as consulting on strategic planning and national security issues relating to his DoD (Department of Defense) experience. He is the recipient of several awards, including two SES (USA Government's Senior Executive Service) awards, the USA's Presidential Rank Meritorious Award, and the Presidential Rank Distinguished Award.

Dr. Blatstein joined The Johns Hopkins University Applied Physics Laboratory in 1999 and later became Director of Strategic Planning. In November, 2009, Dr. Blatstein accepted a full time position as assistant professor in the Division of Public Safety Leadership. Previously, Dr. Blatstein was selected as the first Technical Director of USA 's Naval Surface Warfare Center (NSWC). Before, he was Head of the Engineering Department NSWC, then Deputy Technical Director of NSWC, and Head, Research and Technology Department of the NSWC. Before these Senior Executive Service assignments, Dr. Blatstein performed and led research in underwater explosion effects and explosion acoustics at the USA's Naval Ordnance Laboratory (NOL). He began his management career as Head of the Explosion Effects Branch, and became Head of the Radiation Division, managing research and technology in solid state physics, electromagnetics, electro-optics, mathematics and radiation effects

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***Conversational Session*** – Tuesday March 13<sup>th</sup>, 2018, 3:00 PM – 4:00 PM



**Dr. Risa Blair**

**Kaplan University, USA**  
**eLearning Instructional Designer**  
**Education Management**  
**Instructional Associates,**  
**Director of HR and Operations**



**Drs. Nanda van der Stap**

**University of Applied Sciences,**  
**Utrecht, Netherlands**  
**Blended Laboratory**  
**Blended Learning Methodologies**

**Conversational Session**

***"The Educational Features of Peer Review"***

**Short Abstract**

Peer Review presents itself as a win/win for teachers and students, alike - whether at the undergraduate or graduate level - or does it? Do students really learn from peer review? Is it an "easy" path for a professor to take to avoid developing strong lectures or provide solid assessments? Some may argue this point. This conversational session will address these points, as well as the benefits of peer review to students, as well as the professor. We attack the concept of peer review from all sides. Be prepared to actively participate in the conversation! This topic might be taken as an example of the a following invited session regarding the importance of explicitly relating Episteme with Doxa, knowledge with opinion, justified with not justified believes, explicit with implicit knowledge.

**Shorts Bios**

**Dr Risa Blair** is Passionate leader and trainer with extensive experience in higher education and corporate settings, including project management, curriculum development and delivery for face-to-face and online settings. Exceptional skills in facilitating content delivery to meet the needs of the client. She is a Strong proponent of utilizing real world experience and technology to promote and reinforce learning, as well as to meet required outcomes. Easily able to deliver technical content to non-technical audiences. Quality Matters trained online course reviewer.

**Drs. Nanda van der Stap** teaches at the University of Applied Sciences Utrecht, Netherlands. She has an MA in Ed, an MA in English Language & Culture, and an MA in Philosophy. Her area of expertise is blended learning and she is currently doing a PhD research in stimulating learning processes in a digital learning environment

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**Conversational Panel** – **Tuesday March 13<sup>th</sup>, 2018, 4:30 PM – 5:30 PM**



**Professor T. Grandon Gill**

University of South Florida, USA  
 Academic Director of the  
 Doctorate of Business  
 Administration  
 Editor-in-Chief of *Informing  
 Science*  
 Editor of the *Journal of IT  
 Education*  
 Founding Editor of Journal of  
 Information Technology Education



**Dr. Suzanne Lunsford**

Wright State University, USA  
 Professor of Chemistry  
 An electrochemist and an  
 internationally established chemical  
 educator.  
 Author and Director of Several project  
 of Integrating Research, Education,  
 and Real Life Problem solving in the  
 Area of Chemistry



**Dr. Nagib Callaos**

President of the International  
 Institute of Informatics and  
 Systemic, USA  
 Former Dean of Research and  
 Development of the University  
 Simon Bolivar, Venezuela  
 Founding Editor in Chief of the  
 Journal of Systemics, Cybernetics  
 and Informatics

**Conversational Panel**

***Integrating Research, Education, and Real Life Problem Solving***

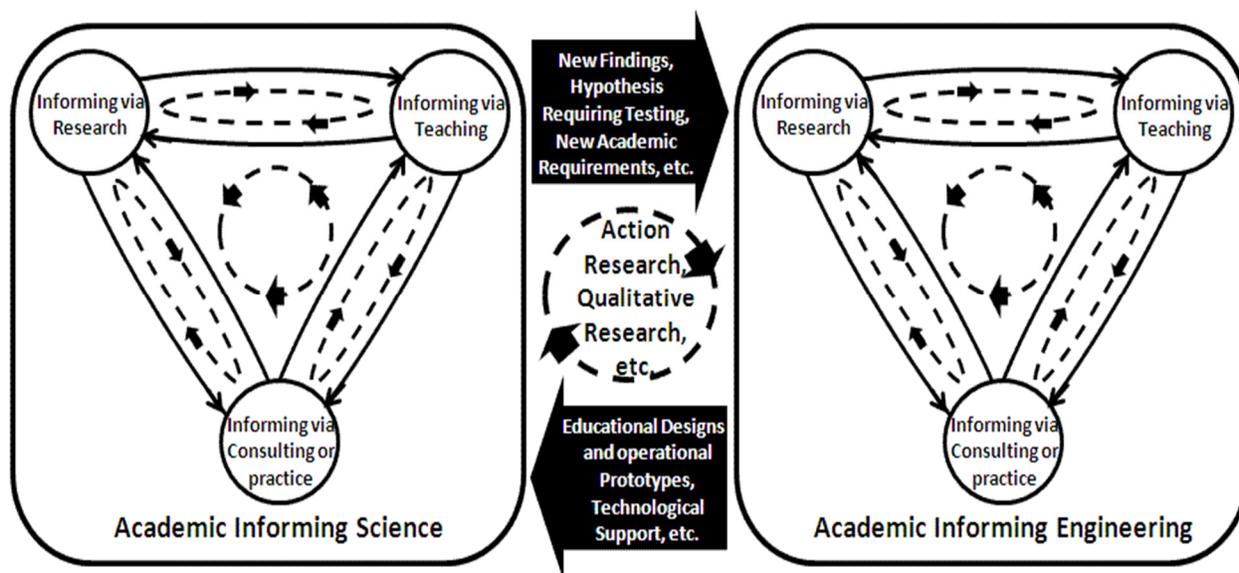
**Purpose**

There is a growing academic and societal need for the integration of academic activities among themselves and with the Society, including private and public sectors. An increasing number of academics have noticed the importance of integrating Research, Education, and Problem Solving among themselves and with societal and corporate real life problems. Information and Communications Technologies enabled different ways of supporting these kinds of integration processes. Informing Science is at the heart of academic activities (research, education, and consulting).

An increasing number of **specific** projects showed to be effective in achieving this kind of integration. What it is probably lacking is a **general** methodology that can support the conception, design, and effective implementation of this kind of projects. The pupose of this conversational panel is 1) to make a comprehensive presentation with regards to this issue, 2) to

provide the different kind of relationships on which attendees might participate with questions, comments, potential contribution, 3) to offer the different ways in which any of *the attendees might write an invited paper for the post-conference edition of the proceedings with no additional cost*, 4) to estimate the feasibility of a special issue of the journal with regards to this important matter.

Comprehensive perspective regarding “*Integrating Research, Education, and Real Life Problem Solving*”



### Short Bios of the Co-Chairs and Facilitators

**T. Grandon Gill** is given above

**Dr. Suzanne Lunsford** is professor at Wright State University and is an electrochemist and an internationally established chemical educator. She has been working with colleagues from *international* universities on how to integrate interdisciplinary science labs to meet the needs of the 21<sup>st</sup> century. Her research work for over two decades has been developing novel sensor electrodes (modified electrochemically) to detect common neurotransmitters to detecting common heavy metals Lead, Cadmium, Mercury and toxic metal Indium at low concentrations utilizing electrochemistry techniques such as cyclic voltammetry, square wave anodic stripping voltammetry, and differential pulse voltammetry. The electrochemical techniques and modified electrodes are examined further by such techniques as Scanning Electron Microscopy, Atomic Force Microscopy, Fourier Transform Infrared Spectroscopy and Raman Spectroscopy to confirm the electrode surface interactions and stability analysis of the sensor(s) developed to assist our students with a variety of analytical instrumentation techniques. She has received over 1 million dollars in external funding for her international and local educational inquiry-based science research programs at Wright State University.

**Dr. Nagib Callaos** is the founding president of the IIIS and the founding president of the Journal of Systemics, Cybernetics, and Informatics (JSCI). He is former Dean of Research and Development of the University Simon Bolivar and was the founding president of several organizations on research, development, and technological innovation, e.g. The Foundation of Research and Development of the University Simon Bolivar, the founding president of the Venezuelan Fund for Technological Innovations (created by presidential decree), The founding president of the Venezuelan Association of Executives in Patents and Copyrights, etc. His main research and professional activities were in the area of Systemic Methodologies of Information System Development, Group Decision Support Systems, and Action-Research mainly via Operations Research. He tutored more than 100 undergraduate and graduate theses and produced more than 100 research papers and reflection articles.

Related to the topic of this conversational session he has been continuously designing and redesigning (for about 35 years), via research and consulting, more effective methodologies for information/informing system development, which effectiveness depends on including ethos, pathos, and logos to the in the context of a combination of systemic and traditional systematic analysis, design, and development methodologies. A synthesis of what he has achieved in this methodological area can be found at <http://www.iiis.org/nagib-callaos/Toward-Systemic-Notion-of-Methodology-Practical-Consequences.pdf>. With regards to the cybernetic relationships implicitly or explicitly should exist between episteme and techne, science and engineering, in the context of their industrial and societal insertion can be found at <http://www.iiis.org/nagib-callaos/engineering-and-meta-engineering/engineering-and-metaengineering.pdf>. This kind of insertion is necessary for integrating research and consulting as well as for the Ethos, Pathos and Logos of both episteme and techne, research and consulting, theory and practice, the integration of Science and Engineering/Technology. This, in turn, has strong consequences in the Ethos, Pathos and Logos in Higher Education.

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**Participative Panel – Tuesday March 14<sup>th</sup>, 2018, 5:30 PM – 6:30 PM**



**Professor T. Grandon Gill**

University of South Florida, USA  
 Academic Director of the Doctorate of Business  
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 Editor-in-Chief of *Informing Science*  
 Editor of the *Journal of IT Education*  
 Founding Editor of Journal of Information  
 Technology Education



**Dr. Nagib Callaos**

President of the International Institute of  
 Informatics and Systemic, USA  
 Former Dean of Research and Development of the  
 University Simon Bolivar, Venezuela  
 Founding Editor in Chief of the Journal of  
 Systemics, Cybernetics and Informatics

**Conversational Session**

***Explicitly Relating Episteme and Doxa: Academic Publishing Issues.***

**Motivation:**

If knowledge (Episteme) is conceived as “justified belief” and opinion (Doxa) as a non-justified belief, they are species of the genus “belief”. They have in *common* what characterize the genus of belief. The moth notions are *communicated* via belief. They are also implicitly related because there is no knowledge not based in and explicit or implicit belief and all beliefs are based on explicit or implicit knowledge. Can we, then, conceive potential cybernetic relationships between Episteme and Doxa, knowledge and opinions., justified and non-justified beliefs?

Let us take an example of the relationships between knowledge and opinion. What is called Academic Publishing relates, *implicitly*, Episteme and Doxa, knowledge and opinion, Justified and non-justified beliefs, knowledge and beliefs, etc. Indeed, most academic activities (if not all) *implicitly* relate Episteme and Doxa. Is there anything wrong with explicitly relating them in research, education, and communication, as it is the case of Academic Publishing. When a publication is titled as a peer reviewed one, isn’t implicitly recognizing that the opinion, the Doxa of the reviewers are part of the decision process? When an editor asks for the removal of a paragraph, isn’t s/he, implicitly, using her/his Doxa or opinion regarding what might or might not be interesting to the potential readers? Is her/his editorial decision based on knowledge or on an opinion (Doxa) which is, in turn, based on personal experience and/or marketing/financial requirements of the publisher. Isn’t, at the end of the process, the opinion of the reader the most

important ingredient to make the academic publication viable both financially and academically. When academic department chairs and promotional committees base their respective decision on the quantity of paper published in given journals and proceeding, aren't they basing their decision on their opinion and interpretations on the associated numbers their opinion (Doxa) regarding the reliability and reputation of the publisher, which in turn, is based on interpretations and opinion of people unknown to them and with deserved or undeserved credibility? So what is wrong with explicitly publishing knowledge and opinion, research and experience-based reflections, as long as the reader is made aware about what are research results, research results interpretations, as well as related reflections and opinion? What is wrong with explicitly relating Episteme and Doxa in the same academic publication, especially if we take into account that there is no Episteme without implicit Doxa, and not Doxa which is not explicitly or implicitly based on Episteme.

**Short Bios** are given above.

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*Octava Conferencia Iberoamericana de Complejidad, Informática y Cibernética: CICIC 2018*

***Plenary Session*** – *Wednesday, March 14<sup>th</sup>, 2018, 8:00 AM - 8:35 AM*



**Professor T. Grandon Gill**

**University of South Florida, USA**  
**Academic Director of the Doctorate in Business Administration**  
**Editor-in-Chief of *Informing Science***  
**Editor of the *Journal of IT Education***  
**Founding Editor of *Journal of Information Technology Education***

***Plenary Keynote Address***

***Closing the Loop:***  
***Incorporating Student-Developed Content into the Curriculum***

**Abstract**

How many thousand hours of effort are lost as the student-developed content vanishes into oblivion at the end of each semester? Admittedly, much of the content we see as instructors likely deserves not to see the light of day. Unfortunately, both students and instructors are aware of this. And, being pressed for time, we calibrate our expectations accordingly. But what would happen if we were to design our assignments with the specific goal of having the work created in one class become part of the curriculum of the next?

The focus of this presentation is our experiences in developing assignments that are intended for use in subsequent classes. Two examples are presented. The first is a debate activity. Master's students were assigned to create chapters in a book that was built around ten debate resolutions such as:

Within 50 years, we can expect to see information technologies produce systems that are capable of the same type of flexible, common sense reasoning that humans alone are capable of today.

This book of student work was subsequently published and has been used for several years in the capstone course for the Business Analytics and Information Systems master's program at the University of South Florida.

The second example involves the student development of discussion case studies of local organizations. At the moment, courses in three different programs (the MBA, EMBA, and DBA) all require students to develop case studies suitable for eventual publication and use in the classroom. A substantial fraction of these cases has either been published or are in the publication pipeline. Moreover, at least one course is using these cases as its principal source of content.

Having students develop work at a level of quality suitable for subsequent reuse is not without its challenges. As part of the presentation, a number of challenges that we have encountered will be identified. How we have tried to address these challenges, including approaches to break down the process into manageable chunks, incorporating peer-review into the editorial process, identifying—and, if necessary, creating—suitable outlets for the work, and motivating students, will also be discussed. Finally, the potential learning outcome benefits of this process will be considered, and some evidence of effectiveness will be presented. (**Short Bio** is given above)

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***Plenary Session – Wednesday, March 14<sup>th</sup>, 2018, 8:35 AM – 9:10 AM***



**Professor Suzanne Lunsford**  
Wright State University, USA  
Professor of Chemistry  
Author and Director of Several  
project of Integrating Research,  
Education, and Real Life Problem  
Solving in the Area of Chemistry



**Professor William Slattery**  
Wright State University, USA  
The College of Science and  
Mathematics  
Earth and Environmental Sciences  
Department and Teacher in  
Education

***Plenary Keynote Address***

***On-line E-portfolios in Higher Education -A Multidisciplinary Approach***

**Short Abstract**

Professional development programs for in-service teachers is a three-phase long-term event designed to increase the integrated science content, pedagogical, and technological knowledge of teams of K-12 teachers in high need Local Education Agency (LEA). The main schools selected are high need areas with an overall average from school districts serving a population of 63% students who are economically disadvantaged. The teachers participating serve as catalysts and mentors to other teachers, and will drive curriculum change in the district with the production of E-portfolios. The multidisciplinary approach of this program is composed of three phases; Phase I -field experiences/lab experiences, Phase II -on-line internet experiences where the E-portfolios are developed and implemented and Phase III -web conferences to continue the development of the E-portfolios and assess students learning gains in content. Teachers participating in these programs will be agents of change, leading their districts' efforts to produce scientifically literate students now and a citizenry well versed in the skills that will be needed to ensure Ohio's economic future.

## Short Bios

William Slattery earned his Bachelor of Science in Geoscience/ Geology from Jersey City State College in 1986, his Master of Arts in Teaching degree from St. Peters College, Jersey City, New Jersey in 1988 and his Doctor of Philosophy degree from the Earth and Environmental Science Department of The City University of New York in May 1993. His dissertation focused on the stratigraphic architecture and sequence stratigraphy of the upper Devonian rocks of Pennsylvania and New York. While pursuing his Master's and Ph.D. degrees he taught K-12 science at DePaul High School in Wayne, New Jersey. In 1994 he was hired as a joint appointment in the departments of the (then) Geological Sciences and Teacher Education at Wright State University. Since his appointment at Wright State University he has pursued a dual research track in science education and geological research. His geologic research interests include the interpretation of the sequence stratigraphy of the Appalachian foreland basin and Atlantic Coastal Plain and stable isotope geochronology. His science education research focuses on developing Earth system science curriculum for K-12 teachers and students with an emphasis on building logical thinking skills and scientific literacy.

**Dr. Suzanne Lunsford** is professor at Wright State University and is an electrochemist and an internationally established chemical educator. She has been working with colleagues from *international* universities on how to integrate interdisciplinary science labs to meet the needs of the 21<sup>st</sup> century. Her research work for over two decades has been developing novel sensor electrodes (modified electrochemically) to detect common neurotransmitters to detecting common heavy metals Lead, Cadmium, Mercury and toxic metal Indium at low concentrations utilizing electrochemistry techniques such as cyclic voltammetry, square wave anodic stripping voltammetry, and differential pulse voltammetry. The electrochemical techniques and modified electrodes are examined further by such techniques as Scanning Electron Microscopy, Atomic Force Microscopy, Fourier Transform Infrared Spectroscopy and Raman Spectroscopy to confirm the electrode surface interactions and stability analysis of the sensor(s) developed to assist our students with a variety of analytical instrumentation techniques. She has received over 1 million dollars in external funding for her international and local educational inquiry-based science research programs at Wright State University.

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***Plenary Session*** – Wednesday, March 14<sup>th</sup>, 2018, 9:10 AM – 9:45 AM



**Professor John Coffey**

University of West Florida, USA  
Computer Science Department  
Research Scientist at  
Florida Institute for Human and Machine Cognition

***Plenary Keynote Address***

***“On Social Engineering Attacks and Unintended Data Disclosures:  
Two Major Categories of End-User Cybersecurity Error”***

**Abstract**

End user error continues to be a significant root cause of cybersecurity breaches. Despite widespread progress in the establishment of training for end users and a slight downward trend in end user error-mediated compromises as a percentage of total successful attacks and data breaches, the absolute number of successful attacks continues to trend upward. This talk will provide details regarding two major categories of end user error: failure to detect social engineering attacks and unintended data disclosures not resulting from social engineering attacks.

Modern social engineering attacks are sophisticated occurrences that bear little resemblance to early, primitive phishing exploits. This talk will address the evolution of social engineering attacks, modern forms, and attributes of susceptible users, including the important role of social media in helping attackers create highly targeted attacks.

Significant amounts of sensitive data continue to be exposed by unintended data disclosures not precipitated by social engineering attacks. While organizations are awash in broad guidelines for the implementation of training programs, most guidelines do not provide details on the most common and most damaging types of breaches. A detailed analysis of the Privacy Rights Clearinghouse database of data breaches reveals patterns of errors that end users make that can inform highly targeted training programs. Summarization of detailed data in service of more focused end-user training is one goal of this proposed talk.

**Notes** (not part of the abstract)

- 1 Psychological aspects of people who are susceptible to phishing attacks
2. Root causes of unintentional data disclosures by organization type
3. Substantial variation regarding how well or how poorly different categories of organizations understand how their unintended data disclosures occur.

4. Highly variable state requirements for data breach reporting and the negative impacts this lack of standardization has on our ability to understand how these breaches occur.

A good portion of this work is the result of a detailed analysis of data in the Privacy Rights Clearinghouse database of more than 5500 data breaches that have occurred since 2005.

There are many guidelines for security training but none of them really provide detailed guidance on specific causes of end-user error in specific environments. Summarization of detailed data in service of more focused end-user training is the goal of this proposed talk.

### **Short Bio**

Dr. John W. Coffey holds a B.S. in Psychology from the College of William and Mary (1971), a B.S. in Systems Science (1989), an M.S. in Computer Science/Software Engineering (1992), and an Ed.D. with an emphasis in Computer Science (2000) from the University of West Florida (UWF). He was one of the first members of the Institute for Human and Machine Cognition (IHMC) and he has worked with that organization for many years. He has been in the Department of Computer Science at the University of West Florida since 1992, starting as a Lecturer and working his way up to his current rank of Professor. He has published a total of more than 100 refereed journal articles, book chapters, technical reports, and conference proceedings. His research interests include knowledge elicitation and representation, web services, and Service Oriented Architecture, advanced technology for education, and computer science education.

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***Plenary Session*** – *Wednesday, March 14<sup>th</sup>, 2018, 1:00 PM - 1:35 PM*



**Dr. Lila Rajabion**

**University of South Florida, Sarasota-Manatee, USA**  
**College of Business**  
**Information Technology**  
**Co-founder of ITC4BIZ and providing IT consulting services to world wide customers.**

***Plenary Keynote Address***

***"Generation Z Students: Will They Change Our Classrooms?"***

**Abstract**

A new generation of students (Generation Z) born after 1995 are arriving on our college campuses. The Generation Z students have been termed as the "screensters," "internet generation" and the "digital natives." They are first generation of students to be born in an environment that is extremely internet-connected and tech-savvy. What makes them unique? What are the best ways to motivate them?, what are the implications for computer science and IT educators? What are the appropriate learning strategies to use to motivate Generation Z students. Key Words: Generation Z, Computer Science and IT students, Computer Science and IT educators, Generation values

**Short Bio:**

Dr. Lila Rajabion is faculty member in the college of business and teaching courses in Information technology at the University of South Florida Sarasota-Manatee. She received her Doctoral degree in Management of Information Technology from Lawrence Technological University. Dr. Rajabion also holds MS in Computer Information systems from University of Detroit Mercy. She holds two undergraduate degrees in Computer Science and Psychology from University of Windsor, Canada.

Dr. Rajabion has over 15 years of professional experience in various dimensions of Information Technology combined in the academia, and the private sectors. She also has a significant work experience in providing leadership in the areas of systems analysis & design, cyber security, enterprise software application development, and IT project management for local and "global" projects. She has conducted various need-based training programs in industry. She was also a consultant for the US Department of Veterans' Affairs helped develop training program for diversity and inclusion for managers and supervisors. She is also a co-founder of ITC4BIZ and providing IT consulting services to worldwide customers

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***Plenary Session*** – Wednesday, March 14<sup>th</sup>, 2018, 1:35 PM – 2:10 PM



**Professor Donald Ropes**

**Inholland University of Applied Sciences, Netherlands  
Business Research Centre  
Research line: Learning and Development in Organisations**

*Plenary Keynote Address*

***“Design Science Research: Bridging Rigor and Relevance”***

**Short Abstract**

The point of this talk is to explain the Design Science Research approach as a way to bridge the rigor-relevance gap present in much of scientific work. In the presentation I discuss how explanatory sciences such as Sociology or Physics are mono-disciplinary in nature and aim to produce outcomes that contribute to the body of knowledge specific to that discipline. In these fields methodological rigor is crucial in order to support the knowledge claims generated. However, this means limiting the research to perhaps just one variable while eliminating any influence of the research context. Thus, assuring rigor generally means sacrificing practical relevance. Design Science Research, on the other hand, is a multidisciplinary approach aimed at generating actionable knowledge - that which is both rigorous and relevant for practice.

**Short Bio**

Donald Ropes is Professor of Learning and Development in Organisations at Inholland University of Applied Sciences. His research is on learning in complex environments, specifically how we can help people and organisations to become responsive: able to absorb shocks, adapt and thrive in new situations and look for challenges that can be turned into opportunities. For more than ten years, Professor Ropes has been working on advancing Design Science Research as a way to contribute to organisations’ development while at the same time expanding organisational learning theory.

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***Plenary Session*** – Wednesday, March 14<sup>th</sup>, 2018, 2:10 PM – 2:45 PM



**Professor Magda Huisman**

**North-West University (Potchefstroom Campus), South Africa**  
**Faculty of Natural Sciences**  
**School of Computer, Statistical**  
**and Mathematical Sciences**  
**Computer Sciences and Information Systems**  
*Plenary Keynote Address*

***“Mobile Application Development: Should We Bother with Systems Development Methodologies?”***

**Short Abstract**

With the increase in the adoption of mobile devices, the demand for mobile applications also increases. While some mobile applications are very successful, others fail. In this paper we will try to answer the question: “What factors influence the success of mobile applications, and is the use of systems development methodologies one of these factors?” To answer this question, we will focus on the user acceptance of mobile applications and the development process of mobile applications. The factors (positive and negative) that influence user acceptance of mobile applications will be presented, as well as the results of a study on the use and effectiveness of systems development methodologies during mobile application development.

**Short Bio**

**Magda Huisman** is the Research Director of the Unit for Business Mathematics and Informatics at the North-West University in South Africa. She is a Professor of Computer Science and Information Systems and teaches software engineering, IT project management, management information systems, and decision support systems. She received her Ph.D degree in Computer Science and Information Systems in 2001. Prof. Huisman is actively involved in research projects regarding systems development methodologies. She has published her research in journals such as *MISQ*, *Information & Management*, *IADIS International Journal on Computer Science and Information Systems*, *IJWEST*, and *Lecture Notes in Computer Science*. Her current research interests are in the use and effectiveness of systems development methodologies and the diffusion of information technologies.

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***Plenary Session*** – *Wednesday, March 14<sup>th</sup>, 2018, 2:45 PM - 3:20 PM*



**Professor Anastassis Kozanitis,**

**University of Quebec in Montreal. Canada  
Department of Didactics, University Pedagogy  
Pedagogical innovations.  
Motivation and school commitment**

*Plenary Keynote Address*

***“Can Less Teaching Bring more Learning?  
Leveraging Learning through Feedback.”***

### **Short Abstract**

In line with higher education’s shift from teaching to learning, we emphasise the reasons why instructors should design teaching and learning activities that provide students with opportunities to reflect on how and what they are learning. There are three main takeaways we wish to communicate: 1) learning is facilitated when the context and object of learning make sense to the learner; 2) innovation and technology should leverage pedagogy; 3) active learning pedagogies have proven more efficient.

### **Short bio**

Anastassis Kozanitis holds a doctorate in education from the University of Montréal, where he specialized in university teaching and pedagogy. He has a master's degree in the same area from Université Laval, Quebec City and a degree in psychology. His areas of interest are student motivation and engagement, affective dimensions in learning, classroom management and teaching innovations in university context. Currently he is a faculty member in the department of didactics at the Université du Québec à Montréal, Canada. For more than 10 years he has worked as faculty development in the Center for teaching and learning at Polytechnique Montreal. He is also an international consultant helping university programs to develop competency-based curricula, mainly in Latin American countries.

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***Plenary Session – Thursday, March 15<sup>th</sup>, 2018, 8:00 AM – 8:35 AM***



**Dr. Maureen Lucy Schafer**

**Georgetown University, USA**

*Clinical Informatics SME: Reviewed and wrote the DoD  
Common Military Training curriculum.*

*Defense Health Agency / Research and Development.*

*27-years US Army Veteran*

***Plenary Keynote Address***

***“The Power of Effective Collaboration between Industry and Academia.”***

### **Short Abstract**

Many healthcare systems that provide the interweaving framework of people, physical structures and electronic systems to support the application mandate of best practices seemingly changes from one organization to the next. Ultimately, it creates a lack of standardization, cumbersome processes, user frustration, and unreliable outcome metrics. The reliance in developing new systems is then based on thought leadership at that point in time rather than applying science to guide the system innovation or practice. The challenge is to move us collectively from thought leadership to project implementation framed and acted upon via evidenced based science. Inherent in this change is to specialize the blending the best of both industry and academia’s priority variables. Merging the domains of industry and academia as collaborative coauthors in new system development supports project management threaded with validated and evidence-based practices.

### **Short Bio**

Maureen Lucy Schafer received her Ph.D in Health Care Systems and Informatics from the University of Arizona. An enterprise level clinical informaticist, Family Nurse Practitioner and military veteran, Dr. Schafer possesses a comprehensive background in advanced clinical care, health care systems, teaching and expert application of the Systems Life Cycle model. This training and accountability is derived from 27 years of experience in the United States Army, consulting, teaching and informatics work within and across academia and multiple health care organizations around the world. Presently, she is a full-time consultant for the Department of Defense, Defense Health Agency as an Informatics Subject Matter Expert with application to enterprise level projects and review and drafting of multiple healthcare policy documents for government leadership. Dr. Schafer is passionate about sharing knowledge, and is an adjunct professor teaching across the curriculum in the Health Systems Administration Department at Georgetown University, Washington D.C.

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***Plenary Session*** – Thursday, March 15<sup>th</sup>, 2018, 8:35 AM – 9:10 AM



**Dr. Ira Blatstein**

**Johns Hopkins University**  
**Initially in Applied Physics Laboratory and later**  
**Director of Strategic Planning.**  
**USA Presidential Rank Distinguished Award, and**  
**USA Presidential Rank Meritorious Award**

*Plenary Keynote Address*

*“Strategic Planning for The Second Half of Your Life”*

### **Short Abstract**

In a previous article, the author discussed strategic planning and its application to a variety of organizations. This article extends the application of these strategic planning principles to an individual’s life. Increased life expectancy is leading to the desire/requirement to plan well beyond the end of an individual’s traditional first career. The paper delves into application of strategic planning to plan the second half of an individual’s life.

It also discusses the incorporation of these ideas into strategic planning classes. Finally the article reports on the results of a survey that has been used to assess the impact that this planning has on students’ perspectives on their future and on strategic planning. Key conclusions of the paper are: 1) Doing this type of planning makes individuals feel positive about the future. They are more likely, I believe, to respond to opportunities as they arise. 2) After doing the planning, a larger number of respondents expect to involve other people in the development of their plans. 3) Many of the respondents did not have any personal strategic plan prepared before they did the one in this class. 4) A large majority of the respondents were impacted by the planning process. They either changed their plans, took specific actions, or changed their approach to planning overall. 5) The course and plan development altered many individuals view of their plan and planning.

### **Short Bio**

Dr. Ira Blatstein teaches courses in strategic planning, change management, and leadership; as well as consulting on strategic planning and national security issues relating to his DoD (Department of Defense) experience. He is the recipient of several awards, including two SES (USA Government’s Senior Executive Service) awards, the USA’s Presidential Rank Meritorious Award, and the Presidential Rank Distinguished Award.

Dr. Blatstein joined The Johns Hopkins University Applied Physics Laboratory in 1999 and later became Director of Strategic Planning. In November, 2009, Dr. Blatstein accepted a full time position as assistant professor in the Division of Public Safety Leadership. Previously, Dr. Blatstein was selected as the first Technical Director of USA 's Naval Surface Warfare Center (NSWC). Before, he was Head of the Engineering Department NSWC, then Deputy Technical Director of NSWC, and Head, Research and Technology Department of the NSWC. Before these Senior Executive Service assignments, Dr. Blatstein performed and led research in underwater explosion effects and explosion acoustics at the USA's Naval Ordnance Laboratory (NOL). He began his management career as Head of the Explosion Effects Branch, and became Head of the Radiation Division, managing research and technology in solid state physics, electromagnetics, electro-optics, mathematics and radiation effects

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***Plenary Session – Thursday, March 15<sup>th</sup>, 2018, 9:10 AM – 9:45 AM***



**Professor Detlev Doherr**

**University of Applied Sciences, Germany  
Dean of the Bachelor Degree Programs  
Head of the Institute of Continuing Academic Education  
Director of the Steinbeis Transfer Center of Information Technologies,  
Offenburg**

**Plenary Keynote Address**

***“Humboldt's Vision of a Smart(er) World”***

### **Short Abstract**

In the 19th century Alexander von Humboldt explored nature and was conceived a new vision of natural world that still influences our understanding of the nature itself. Since then the technical world has developed dramatically and influences our relationship to nature and our handling of the complexity and diversity of nature.

This presentation describes aspects of Humboldt’s vision of the natural world and consequences for a smarter world, which we likely are implementing by super computers under the risk of a technical colonialism by high developed computer intelligence in conflict with humanity.

### **Short Bio**

Dr. Detlev Doherr is Professor in Informatics and Geoinformatics of the University of Applied Sciences Offenburg, Germany, since 1990. He received the degrees of diploma and Dr. rer. nat. from the University of Göttingen, Germany in 1983. After an employment at the German Rock salt and Potash industry, where he developed a Geographical Information System for mining and exploration together with IBM, he serves as Professor in Offenburg beginning in 1990. In 1992 he founded the Steinbeis-Transfer Center of Information Technology in Offenburg, which is part of the German Steinbeis- Stiftung. Since 2001 he is working in the fields of digital libraries, Internet portals and virtual environments. He has more than 20 years experiences in developing of Internet based information systems combined with knowledge bases and artificial intelligence. His current interests include knowledge based computing, information technology, and history of natural sciences.

## **CICIC 2018 Plenary Session (In Spanish)**

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***Sesión Plenaria – Jueves 15 de marzo, 2018, 10:00 AM – 10:30 AM***



**Dr. Jesús Salvador Vivanco Florido**

**Universidad A. de Aguascalientes, México**

**Miembro del Cuerpo Académico Consolidado “Gestión de la Pequeña y Mediana Empresa”**

**Miembro del Sistema Nacional de Investigadores, Nivel I**

**Ponencia Plenaria**

***“Adquisición de Conocimientos a través de las Herramientas TIC para la Sustentabilidad de las PYMES”***

### **Brece Resumen**

El objetivo de la presente investigación es analizar el impacto del uso de conocimientos a través de herramientas TIC, en el desempeño, desarrollo y sostenibilidad de las PYMES, y se considera que se puede utilizar la informática financiera colocada en la nube pública e incorporar la perspectiva de las pequeñas y medianas empresas PYME en el alcance de las redes sociales como un sistema de distribución de contenido de medios de comunicación y marketing; en esta investigación se demuestra a través del análisis de la evidencia empírica estudiada, que el uso de herramientas TIC, en la administración y operación de las PYMES mejora el desempeño, el desarrollo y la sostenibilidad de las PYMES.

### **Breve CV**

**Jesús Salvador Vivanco Florido.**- Doctor en administración del programa DIA Sede: San Luis Potosí (Doctorado Interinstitucional en Administración). Profesor de tiempo completo en la Universidad A. de Aguascalientes de 1999 a la fecha, miembro del Cuerpo Académico Consolidado “Gestión de la Pequeña y Mediana Empresa”, Miembro del SNI Nivel I, desde 2014, cuento con el perfil PROMEP de 2007 a la fecha, Mis líneas de investigación, son Cultura Organizacional y Pymes con enfoque en finanzas; Cuento con tres libros publicados 2 en España y 1 en México, sobre mis líneas de investigación; Pymes y Cultura Organizacional; actualmente dirijo 2 tesis de doctorado y 4 de maestría sobre mis líneas de investigación; He publicado artículos en Inglés, Francés y Español en diversas revistas indexadas, en España, Francia, Estados Unidos y México, sobre los temas de mis líneas de investigación.

## **CICIC 2018 Plenary Session (In Spanish)**

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*Octava Conferencia Iberoamericana de Complejidad, Informática y Cibernética: CICIC 2018*  
***Sesión Plenaria – Jueves 15 de marzo, 2018, 10:30 AM – 11:00 AM***



### **Dra. Fátima Dolz De Moreno**

**Universidad Mayor de San Andrés, Bolivia**  
**Decana Facultad de Ciencias Puras y Naturales**  
**Directora del Instituto de Investigaciones en Informática**  
**Fundadora de Unidad de Postgrado de la Carrera de Informática**

#### **Ponencia Plenaria**

***“Inclusión con TIC : Usabilidad de Colores para Pueblos Indígenas”***

#### **Breve Resumen**

**Esta presentación está basada en un trabajo conjunto de Dra. Fátima Consuelo Dolz y la Lic. Elva Guaman Huallpa.** En el mismo se plantea la incorporación de un modelo de uso de colores que sean utilizados en el diseño de interfaces de programas educativos para usuarios de áreas rurales indígenas, dentro de la etapa de Diseño Comunicacional de la Ingeniería de Software Educativo, tomando como base el diseño enfocado al usuario. Para llevar a cabo el propósito de la investigación se ha considerado: i) el uso del significado ancestral y la representación propia del color para las poblaciones indígenas, y ii) las preferencias o gustos del color de estas poblaciones. Para obtener esta información, se llevó a cabo una serie de encuestas a diferentes poblaciones del departamento de La Paz, Bolivia. El modelo se ha denominado Kurmi.

#### **Breve CV**

La Dra. Fátima Dolz De Moreno es Docente Emérito, Dra. En Informática, y Mg. en Educación Virtual y en Ciencias de la Computación. Ha tenido las siguientes ***contribuciones al desarrollo científico y/o Puestos Docencia***

- Modelo de educación virtual para comunidades indígenas de Bolivia
- Garantía de calidad en educación virtual para pueblos indígenas
- Capacitación en TIC's en población de tumupasa (proy. idh)
- Validación de modelo de aseguramiento de calidad para educación virtual en comunidades indígenas
- Tutora de 135 trabajos de investigación (55 tesis de grado y 80 proyectos de grado)
- Fundadora de unidad de postgrado de la carrera de informática
- Rectora de la organización elecciones autoridades rectorales Universidad Mayor de San Andrés
- Decana facultad de ciencias puras y naturales
- Directora del instituto de investigaciones en informática
- Docente investigadora carrera de informática en la Universidad Mayor de San Andrés

## CICIC 2018 Plenary Session (In Spanish)

The 9<sup>th</sup> Ibero-American Conference on Complexity, Informatics and Cybernetics  
*Octava Conferencia Iberoamericana de Complejidad, Informática y Cibernética: CICIC 2018*  
***Sesión Plenaria – Jueves 15 de marzo, 2018, 11:00 AM – 11:30 AM***



**Dra. Ana María Miralles Castellanos**

**Universidad Pontificia Bolivariana, Colombia**

**Grupo de investigación Synthesis**

**Línea: Ciencias de la complejidad y sociedad**

**Ponencia Plenaria**

***“Posibilidades y Retos de Investigar desde la Síntesis:  
Relato de una Experiencia Investigativa ”***

### **Breve Resumen**

Esta conferencia muestra qué pasa cuando en un proceso de investigación se hace necesario un desplazamiento epistemológico que no plantea el avance a partir de rupturas sino que camina desde la síntesis del conocimiento, en este caso representado en la Ciencia Social Computacional. Para ello se mostrará cómo investigando un tema típico de Ciencias Sociales como lo público, al hacerlo en el escenario de Twitter hizo que el proceso de investigación se moviera de la construcción de un objeto de estudio disciplinario, luego como lugar de paso a uno interdisciplinario, para llegar finalmente a trabajarlo desde la síntesis del conocimiento.

### **Breve CV**

Doctora en Ciencias Sociales de la Universidad Pontificia Bolivariana de Medellín, Colombia. Profesora Titular de la misma Universidad, a cargo de los cursos de Ciencia Política en la Escuela de Ciencias Sociales. Miembro del grupo de Investigación en Gestión de la Tecnología y la Innovación de la Escuela de Ingenierías de la UPB. Fue consultora de la Unesco durante 15 años, en temas de comunicación y ciudad, autora de cinco libros y creadora del proyecto Voces Ciudadanas sobre asuntos de interés público.

Fue periodista y actualmente es profesora-investigadora de la Universidad Pontificia Bolivariana, en Colombia. Estudió la licenciatura en Comunicación Social y Periodismo en esa misma institución, donde se ha especializado en **Periodismo Urbano** e imparte cursos de Opinión Pública. Estudio el posgrado en Ciencias de la Información en la Universidad de Navarra, España. **Es consultora** de la Unesco para América Latina **en temas de comunicación y democracia** desde 1997. También fue consultora de la Fundación Nuevo Periodismo Iberoamericano (2004- 2011). Es autora de los libros: *Voces Ciudadanas, una idea de periodismo público* (2000); *Comunicación para el desarrollo urbano* (2003); *Periodismo, opinión pública y agenda ciudadana*, (2007); *Periodismo público en la gestión del riesgo* (2009); y *El miedo al disenso* (2011).

## CICIC 2018 Plenary Session (In Spanish)

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***Sesión Plenaria – Jueves 15 de marzo, 2018, 11:30 AM – 12:00 M***



### Dr. Nagib Callaos

Universidad Simón Bolívar, Venezuela  
International Institute of Informatics and Systemics, USA

#### Ponencia Plenaria

*“Integración Implícita y Explícita entre Episteme  
(Conocimiento) y Doxa (Opinión) en Publicaciones  
Académicas.”*

#### Breve Resumen

Desde los griegos se ha venido diferenciando entre Episteme (conocimiento, creencia justificada) y Doxa (opinión, creencia no justificada). Son conceptos muy diferentes pero difícilmente existe el uno sin el otro. Tienen en **común** “creencia”. A través de la cual se **comunican**. Ambas son especies del género “creencia”. Todo conocimiento es creencia pero no toda creencia es conocimiento.

Por otro lado, el proceso de la generación y comunicación del conocimiento está siempre apoyada en ambas nociones. ¿Qué es la revisión de pares si no la opinión de otros académicos en base a los conocimientos que tienen y a sus **valores epistemológicos**? ¿Están justificados esos valores? ¿O son creencias asumidas sin justificación? Si en la realidad académica no es posible separar Episteme de Doxa y más bien se requieren necesariamente la una a la otra ¿no debería aceptarse también en el contenido de los artículos a ser publicados? ¿Se puede negar esa posibilidad (incluso deseabilidad) sin estar apoyándose en una interpretación subjetiva u opinión? De ser así, ¿no sería una contradicción in terminis y/o incoherencia en el pensamiento que produce esa conclusión? ¿Estamos seguros que no hay relación cibernética entre Episteme Doxa y esa relación no podría producir sinergias? ¿No habría también sinergias entre investigación y reflexión? ¿Entre conocimiento explícito e implícito? ¿Entre conocimiento y experiencia? ¿Entre investigación y consultoría? ¿Porqué no implementar explícita e intencionalmente relaciones cibernéticas entre investigación y reflexión para formar un todo mayor que la suma de sus partes y con potenciales propiedades emergente de las que beneficiarían tanto la Episteme como la Doxa? *Al fin y al cabo necesitamos de las dos en el contexto de una vida humana.*

#### Breve Bio

El Dr. Callaos es profesor Jubilado de la Universidad Simón Bolívar, donde fue decano de Investigaciones, fundador y primer presidente de su Fundación de Investigación y Desarrollo cuya función ha sido durante más de 30 años relacionar la Universidad con la Industria y el País. Es fundador y presidente de la empresa consultora (en sistemas de Información) Callaos y Asociados, fundada hace 33 años. Es así mismo fundador y presidente del International Institute of Informatics and Systemics y fundador de sus revistas en inglés y en español, así como su editor en jefe.

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***Plenary Session*** – Thursday, March 15<sup>th</sup>, 2018, 1:00 PM – 1:35 PM



**Professor Ronda C. Sturgill**

**University of Tampa, USA  
College of Natural and Health Sciences  
Health Sciences and Human Performance  
Director of the Exercise and Nutrition Science Program**

**Plenary Keynote Address**  
***“Implementing Hybrid Education:  
Short-Term and Long-Term Considerations”***

### **Short Abstract**

Implementation of a graduate program is a timely process. Hybrid education provides another layer of complexity when starting a program. Both short-term and long-term considerations are critical during the implementation phase. This presentation will discuss the short-term considerations including faculty, communication, and resource availability. Long-term considerations presented include adaptability, continued communication, and continued allocation of resources. Challenges, lessons learned, and future recommendations of implementing a hybrid delivered graduate program will be discussed.

### **Short Bio:**

Ronda Sturgill is an associate professor at The University of Tampa in the Health Sciences and Human Performance Department. Previously, she served as an assistant professor at Marshall University. She is active in the scholarly and research area while presenting at numerous international, national, regional, state and local conferences. Her research interests focus on hybrid and online teaching in addition to health education program evaluation. She is also active in many allied health organizations at the local and state level and is currently a member of several allied health organizations.

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***Plenary Session – Thursday, March 15<sup>th</sup>, 2018, 1:35 PM – 2:10 PM***



**Professor. Herwig Mayr**

**University of Applied Sciences Upper Austria, Hagenberg, Austria  
Head of the Department of Project Engineering  
Program Coordinator, of the FH Master and  
Program Biomedical Computer Science**

**Plenary Keynote Address**

*“Teaching (Software) Project Management Using LEGO Bricks”.*

### **Short Abstract**

We illustrate how Action Learning concepts can be integrated into project management courses using LEGO bricks, varying from LEGO Mindstorms sets, over LEGO 4 Scrum and LEGO Creationary, to LEGO Serious Play. Thus, LEGO can both be used for teaching product and process aspects in various lectures at bachelor and master level. We give specific examples and report on our findings and feedback from teachers and students as well.

### **Short Bio**

Dr. Herwig Mayr holds a professorship in Software Engineering at the Upper Austria University of Applied Sciences, Hagenberg, for more than twenty years. He teaches project management, software development processes, and quality and risk management. He integrates LEGO into his teaching concepts ever since the very first LEGO Mindstorms sets appeared at the end of the Nineties, which allowed autonomous LEGO devices to be built and programmed.

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***Plenary Session – Thursday, March 15<sup>th</sup>, 2018, 2:10 PM – 2:45 PM***



**Dr. Paweł Poszytek**

**Ministry of National Education of the Republic of Poland  
General director and president of the board of the Foundation  
for the Development of the Education System.**

**Plenary Keynote Address**

***“How to Measure the Unmeasurable – The Nature of Composite  
Indices and Their Application in Educational Research”***

**Short Abstract**

The present world is flooded by various kinds of indices. They aim at describing the reality, however rarely do we discuss about the limitations they pose. On the one hand, composite indicators by their nature:

- can summarise complex or multi-dimensional issues in view of supporting decision-makers
- are easier to interpret than trying to find a trend in many separate indicators
- facilitate the task of ranking countries on complex issues in a benchmarking exercise
- can assess progress of countries over time on complex issues
- reduce the size of a set of indicators or include more information within the existing size limit
- place issues of country performance and progress at the centre of the policy arena
- facilitate communication with general public (i.e. citizens, media, etc.) and promote accountability.

On the other hand, they can lead to creating misleading policy messages and simplistic policy conclusions, disguising serious failings and leading to inappropriate policies, misuse, and political influence. How to avoid these threats? The author will give two examples of educational research projects where these obstacles have been encountered and surmounted.

**Short Bio**

Paweł Poszytek, PhD, Director General of the Polish National Agency of Erasmus+ Programme. Member of several working groups by the European Commission and the Ministry of National Education of the Republic of Poland, coordinator of the Country profile Project implemented by the Council of Europe. Reviewer of the national core curriculum in foreign language teaching in 2008 and co-author of 2016/2017 curriculum update. Former member of the executive board of the European Association of Language Teaching and Assessment. Former coordinator of Lingua, European Language Label and eTwinning programmes in Poland and member of the board of the Polish National Agency of Lifelong Learning Programme. Mr. Paweł Poszytek presented the Higher Education-Business Engagement Index on several international conferences, i.e. during UIIN conference in Adelaide in February 2017.

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***Plenary Session – Thursday, March 15<sup>th</sup>, 2018, 2:45 PM – 3:20 PM***



**Professor T. Grandon Gill**

University of South Florida, USA  
College of Business

Director of the Doctorate in Business Administration  
Editor-in-Chief of Informing Science  
Editor of the Journal of IT Education

**Plenary Keynote Address**

***“Designing a Doctoral Program to Bridge the Gap between  
the Academy and Industry”***

### **Short Abstract**

A Doctoral program was designed and implemented at the University of South Florida, USA, with the explicit objective of relating and bridging the gap between academy and industry.

In this presentation the principal features of the design of this doctorate will be presented. These are mainly.

- Admissions requirements
- Creating a practice-focused curriculum
- Breaking down departmental silos
- Building flexibility into the design
- Encouraging/Requiring integrative activities
- Maintaining the relationship after graduation

At the end of the presentation, findings from the first three years of its implementation will be summarized.

### **Short Bio**

**See above:** The Plenary Workshop: *“Developing and Using Cybersecurity Discussion Case Studies. NSF-SaTC Funded Workshop”* delivered also by Professor Grandon Gill

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***Plenary Session*** – Friday, March 16<sup>th</sup>, 2018, 8:00 AM – 8:35 AM



**Professor Mohammad Ilyas**

**Florida Atlantic University, USA**

**Department of Computer and Electrical Engineering and  
Computer Science**

**Former Dean of the College of Engineering and Computer  
Science; Member of Global Engineering Deans Council**

**Plenary Keynote Address**

***“Globalization and Higher Education”***

### **Short Abstract**

Globalization is an evolving phenomenon pushing for greater integration among nations in terms of trade, culture, economics, politics, and more. Higher education is not only influenced by the forces of globalization, it is also influences the globalization phenomenon. In this presentation, we will briefly discuss the following aspects:

- Globalization – its brief history, nature, and many faces
- Impact of globalization on higher education
- Emerging needs for global competencies
- Measuring globalization in academic institutions
- Challenges and opportunities for Universities in addressing globalization

### **Short Bio**

**Dr. Mohammad Ilyas** has been with FAU’s College of Engineering and Computer Science since 1983. He has served there in various academic and administrative capacities including Dean of the College from 2010 to 2017.

He has earned four academic degrees from four different countries; BSc in Electrical Engineering from Pakistan, MS in Electrical Engineering from Iran, PhD in Electrical Engineering from Canada, and PhD in Educational Leadership from USA.

Dr. Ilyas has over 210 publications, including one book, 26 handbooks, and over 180 research articles. He is senior member of IEEE, member of Global Engineering Deans Council, and is Fulbright Specialist.

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**Plenary Session— Friday, March 16<sup>th</sup>, 2018, 8:35 AM - 9:10 AM**



**Dr. Houman A. Sadri**

**University of Central Florida, USA**  
**Political Science Department**  
**Founder and President of the**  
**Information & Policy Analysis**  
**Center (IPAC)**



**Dr. Madelyn Flammia**

**University of Central Florida, USA**  
**Professor in International Technical**  
**Communications**  
**Vice President, International Policy**  
**and Analysis Center (IPAC)**

**Plenary Keynote Address**

***“The Role of Interdisciplinary Collaboration in Academic Globalization”***

**Short Abstract**

The presenters will discuss strategies for forming interdisciplinary collaborations among faculty members for the purpose of internationalizing the curriculum in institutions of higher education. While most administrators and faculty agree that globalization is an important goal for colleges and universities, many still find it challenging to develop the means to internationalize the curriculum and to enhance students’ global competency.

The presenters will begin by describing their own experiences collaborating across disciplines. Then they will offer concrete suggestions for establishing interdisciplinary and international collaborations among faculty members. They will cover the challenges associated with such collaborations, including:

- Identifying colleagues with whom to collaborate
- Developing collaborative projects that fit into existing courses
- Establishing methods for meeting course objectives in diverse disciplines
- Developing new interdisciplinary courses

- Helping students think beyond disciplinary boundaries
- Identifying international partners
- Coordinating schedules and working across time zones
- Fostering students' ability to think globally and act locally

The presenters will then offer strategies for addressing these challenges by drawing on their own collaborations, on the work of their colleagues, and on case studies and other research reporting on such collaborations.

### **Short Bios**

**Madelyn Flammia** is a Professor of English at the University of Central Florida in Orlando, Florida. Her research interests include international technical communication, global citizenship, and virtual teams. Madelyn is the co-author of *Virtual Teams in Higher Education: A Handbook for Students and Teachers* and the co-editor of *Teaching and Training for Global Engineering: Perspectives on Culture and Professional Communication Practices*. Email: Madelyn.Flammia@ucf.edu

**Dr. Houman A. Sadri** is a professor of international relations at UCF and the Coordinator of the UCF Model U.N. Program. He is a prolific author and serves as a consultant for U.S. government agencies, including the State Department and the Department of Defense. He is frequently interviewed by both national and international media. Email: Houman.Sadri@ucf.edu

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***Plenary Session*** – Friday, March 16<sup>th</sup>, 2018, 9:10 AM - 9:45 AM



**Professor Paul Nugent**

Western Connecticut State University, USA  
Management Information Systems  
International Association for Computer Information Systems  
Member of the Editorial Review Board

**Plenary Keynote Address**

*“An Exploration of Intrinsic and Extrinsic Properties and Implications for Practice”*

**Short Abstract**

This talk considers the qualitative differences between extrinsic and intrinsic properties and argues that there is a strong bias in science and engineering toward extrinsic properties. This imbalance can lead to excessive reductionism and a constrained view of objects as functions that can lead to problems in system modeling and design. The restoration of balance through an acknowledgment of intrinsic properties is explored.

**Short Bio:**

The author has over 25 years of experience in the defense contracting world as a systems engineer working on Navy programs such as the Trident II Fire Control Systems and Guidance Systems. He is now an Associate Professor of Management Information Systems at Western Connecticut State University and his research interests include organization theory, trust, labor studies, philosophy of technology, and information security.

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***Plenary Session – Friday, March 16<sup>th</sup>, 2018, 1:00 PM - 1:35 PM***



**Dr. Benjamin Apelojg**

**University of Potsdam, Germany  
Lernereinheit für Wirtschaft- Arbeit-Technik  
Process-oriented didactics  
Emotions and learning**

**Plenary Keynote Address**

***Management of Learning - Implications from Needs and Emotions for Learning Processes in a Digital Future"***

**Short Abstract**

The fast technical development of digitization leads to changed learning environments. The future of learning will be more and more digital and virtual. These changes call for new didactic concepts and models that meet the requirements of a “digital learning world”. The presentation initially raises the thesis that learning environments are becoming increasingly complex and dynamic. Self-regulated and collaborative learning will increase. In the presentation examples for digital learning environments and their advantages and disadvantages are given. In progress of the lecture will be shown that next to organizational and content issues needs and emotions play an important role in digital learning environments. Negative emotions and missing needs can interrupt and disturb learning processes. Positive Emotions and fulfilled needs can be helpful for the learning process. The management of learning in a digital age should focus on one side on the process of learning ([https://www.unipotsdam.de/fileadmin01/projects/meprooek/Kompetenzmodell\\_der\\_ökonomisc hen\\_Bildung/Process-orientedDidactics\\_online.pdf](https://www.unipotsdam.de/fileadmin01/projects/meprooek/Kompetenzmodell_der_ökonomischen_Bildung/Process-orientedDidactics_online.pdf) Process-orientated-didactics Apelojg 2015) to deal with complexity and dynamics of future learning and on the other side integrate emerging needs and emotions into the process of learning. At the end of the lecture future demands on teachers will be discussed.

**Short Bio**

Dr. Benjamin Apelojg is working as a scientific employee at the department for economic and technical education at the University of Potsdam. His dissertation treated the topic of emotions in personnel selection processes. In Magdeburg and Chemnitz he was as a visiting professor responsible for the economic education. *Emotions* and *Needs* in different learning environments and the management of learning are his main research topics. He developed the Felix-App which helps in digital and non-digital learning environments to create a good and productive learning atmosphere.

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***Plenary Session – Friday, March 16<sup>th</sup>, 2018, 1:35 PM – 2:10 PM***

**Dr. Habil. Erzsebet Dani**



**University of Debrecen, Hungary**  
**Faculty of Informatics and Computer Science**  
**Department of Library Science and Informatics**

**Plenary Keynote Address**

***“ ‘Publish or Perish’ Can Become ‘Publish AND Perish’  
in the Age of Objective Assessment of Scientific Quality”***

### **Short Abstract**

Many have called and keep calling attention to the rigid and uniform application of the numerical approach, arguing that it is doing injustice to certain areas of science. My study is intended to serve two purposes: I wish to call attention to how extremely harmful the present scientometric practice may be for many scholars and scientists; I propose to demonstrate how the crucial contradiction in question at the core of the present practice follows from the myths generated by scientometry itself.

### **Short Bio**

Erzsebet Dani earned is a Summa Cum Laude PhD Literature and Library Science Literature and Library Science, in Eötvös Loránd University Doctoral Program. She is an Associate professor in Eötvös József College, Faculty of Education and Faculty of Teacher Training and Knowledge Technology in Eszterházy Károly College. She is also an Assigned lecturer in the Faculty of Humanities of the Eötvös Loránd University

Her general research interest are

- Digitalisation, digital literacy, reading and learning research, dissemination of scientific researches – open access repositories
- Education, culture and information sources in the European Union
- Multiculturalism, intercultural communication, Hungarian national and cultural identity

She published 42 studies, 2 books are awaiting for publication, and participated in 26 conferences (18 conference presentations and twice chair)

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***Plenary Session – Friday, March 16<sup>th</sup>, 2018, 2:10 PM -2:45 PM***



**Dr. Lorayne Robertson**

**University of Ontario Institute of  
Technology (UOIT), Canada  
Former Assistant Dean in the  
Faculty of Education  
Former Director of the Graduate  
Programs in Education**



**Ms. Laurie Corrigan**

**Peterborough Victoria  
Northumberland and Clarington  
District School Board, Canada  
Superintendent of Learning and  
Innovation Technologies**

**Plenary Keynote Address**

***“Building Collaboration and Partnerships between Research and Practice: The  
Case of Designing a District Technology Plan”***

**Short Abstract**

As online technologies become ubiquitous in students’ lives outside of school, the academy becomes engaged in assessing the impact of emergent pedagogies on student learning. School districts design policies and programs to develop students’ 21<sup>st</sup> century skills in safe learning environments. Multiple practical, theoretical, and policy considerations underlie the formulation of a school district’s technology plan. Optimal outcomes of planning can be realized through productive research-practice partnerships to share knowledge and broker stakeholder input into this collective and significant enterprise. In this keynote presentation, we describe the steps undertaken in one school district to create collaborative professional learning team in a school district. Employing an evidence-based approach, we analyzed the outcomes of the district’s previous technology plan and planned forward for technology-enabled learning for the district. Practical elements included allocations of personnel and resources. Theoretical elements were wide-ranging and included theoretical considerations of equity, capacity-building, innovative pedagogies, and connected learning.

## **Short Bios**

**Dr. Lorayne Robertson** is an Associate Professor in the Faculty of Education at the University of Ontario Institute of Technology. Her research interests include the implementation of BYOD policies in schools, and critical media health studies. As a former school district superintendent and education officer, her research includes investigations into the use of digital technologies in applied settings such as schools, colleges and universities.

**Laurie Corrigan** is a Superintendent of Learning/Innovation Technologies with the Peterborough Victoria Northumberland and Clarington Catholic District School Board in Ontario, Canada. Her leadership has included developing innovative teaching and learning initiatives in blended learning and establishing technology led-environments to support student success and well-being. Laurie's research undertakings include digital citizenship in schools and supporting teacher awareness of the importance of digital privacy in the context of student achievement and well being.

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*Octava Conferencia Iberoamericana de Complejidad, Informática y Cibernética: CICIC 2018*

***Plenary Session*** – Friday, March 16<sup>th</sup>, 2018, 2:45 PM – 3:20 PM



**Dr. Suzanne Lunsford**

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**Professor of Chemistry**

**Author and Director of Several projects on Integrating Research,  
Education, and Real Life Problem solving  
in the Areas of Chemistry and Electrochemistry**

**Keynote Address**

***"Real World Experience: Developing Novel Sensors –  
An Interdisciplinary Approach"***

### ***Short Abstract***

The development of environmental sensors to detect harmful heavy metals and phenols in water have been an increased concern in the last few years. Our interdisciplinary approach to an inquiry -based lab experiences with the development of modified electrode sensors to detect heavy metals and phenols simultaneously without the need for prior separation has built a stronger tie to real world issues. The problem-based approach of how to develop an electrochemical sensor for heavy metal detection has gained momentum due to increased exposure to Lead (Pb) and Cadmium (Cd). Pb and Cd are neurotoxins in children with chronic exposure and there is a need for a reliable method to analyze heavy metals (Lead and Cadmium) in environmental and biological samples. Thus electrochemical techniques were integrated with the development of Carbon Nanotubes with selective polymers modified on to electrode surfaces with nanoparticles to enhance the detection of phenols and heavy metals will be discussed with real-world applications integrated with industry. The students have shown an enhancement in content knowledge gains with the problem-based real-world analysis of sensor development compared to the lecture based format of teaching. Also, students' collaboration among different universities/departments and industrial settings to learn novel instrumentation such as Scanning Electron Microscopy (SEM) have built upon their interdisciplinary approach as well.

### **Short Bio**

See above at the Plenary Keynote Address, shared with Professor William Slattery and entitled "*Plenary Keynote Address On-line E-portfolios in Higher Education -A Multidisciplinary Approach*".