

General Framework and Plenary Keynote Speakers of the Collocated Conferences

The 19th World Multi-Conference on Systemics, Cybernetics and Informatics: WMSCI 2015

The 9th International Multi-Conference on Society, Cybernetics and Informatics: IMSCI 2015

The 14th Ibero-American Conference on Systems, Cybernetics and Informatics: CИСCI 2015

Décima Cuarta Conferencia Iberoamericana en Sistemas, Cibernética e Informática: CИСCI 2015

Orlando, Florida USA – July 12- 15, 2015

Sunday, July 12th, 2015

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

1:00 PM – 2:00 PM: ***Conversational Participative Session****

Co-Chairs and Co-Facilitators: **Dr. Jeremy Horne**, President-emeritus, Southwest Area Division, American Association for the Advancement of Science (AAAS), USA, and **Dr. Nagib Callaos**, Founding President of the IIS, “*Disciplinary Research is a Necessary Condition for Science Advancement but it is not a Sufficient Condition for Real Life Problem Solving and Technological Innovations, because in these cases Interdisciplinary Research and Communication are also Necessary*” Is this affirmation correct? Why?

2:00 PM – 3:00 PM: ***Plenary Conversational Workshop** (Part 1 of 2)***

Professor Emeritus Stuart Umpleby, The George Washington University, USA, “*Academic Globalization*”

3:00 PM – 3:30 PM: Coffee Break

3:30 PM – 4:30 PM ***Plenary Workshop (Part 2 of 2)***

Professor Emeritus Stuart Umpleby, The George Washington University, USA, “*Academic Globalization*”

4:30 PM – 5:30 PM: ***Conversational Participative Session****

Conversational Panel

Panelists: **Professor Emeritus Stuart A. Umpleby**, The George Washington University, USA, **Dr. Leonid Perlovsky**, Northeastern University, previously visiting scholar at Harvard University, USA, **Dr. Jeremy Horne**, President-emeritus, Southwest Area Division, American Association for the

Advancement of Science (AAAS), USA and **Dr. Nagib Callaos**, IIS, USA, “*Higher Education or Higher Instruction?*”

Being a conversational session, each attendee may have the role of a panelist.

5:30 PM – 6:30 PM: **Conversational Participative Session***

Co-Chairs and Co-Facilitators: **Professor Emeritus Stuart Umpleby**, The George Washington University, USA, **Dr. Leonid Perlovsky**, Northeastern University, previously visiting scholar at Harvard University, USA, and **Dr. Nagib Callaos**, Founding President of the IIS, “*Toward integral, Integrative and Integrated Academic Activities.*” Is this important? Is it necessary? Is it a Cybernetic-Systemic perspective of Academic Activities?

** Participants in conversational participative sessions 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 25 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 reflections 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 (its two parts) will receive an attendance certificate signed by its speaker and/or facilitator.*

Monday, July 13th, 2015

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 plated breakfast)

Co-Chairs: **Professor Emeritus Stuart Umpleby**, The George Washington University, USA, and **Dr. Karl H. Müller**, The Steinbeis Transfer Center New Cybernetics, Vienna, Austria

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

8:00 AM – 8:35 AM Keynote Speaker: **Professor Shigehiro Hashimoto**, Kogakuin University, Japan, “*How to Learn Multidisciplinary Ideas*”

8:35 AM – 9:10 AM Keynote Speaker: **Professor Emeritus Stuart Umpleby**, The George Washington University, USA, “*A Global Strategy for Human Development as an Example of Second Order Science.*”

9:10 AM – 9:45 AM Keynote Speaker: **Dr. Leonid I. Perlovsky**, Northeastern University, USA, “*Aesthetic Emotions and Informatics*”

9:45 AM – 10:00 AM Q&A

10:00 AM – 12:20 PM Breakout Sessions

12:20 PM – 1:30 PM Lunch (on your own)

1:30 PM – 3:30 PM **Plenary Session** of all Collocated Events

Co-Chairs: **Professor Emeritus Stuart Umpleby**, The George Washington University, USA and **Dr. Karl H. Müller**, The Steinbeis Transfer Center New Cybernetics, Vienna, Austria

1:30 PM – 2:05 PM Keynote Speaker: **Dr. Karl H. Müller**, The Steinbeis Transfer Center New Cybernetics, Vienna, Austria, “*De profundis. Ranulph Glanville’s Approach to Second-Order Cybernetics*”

2:05 PM – 2:40 PM Keynote Speaker: **Dr. Mario Lamanna**, Evoelectronics, Italy and Selex-SI, USA, “*A Multidisciplinary Approach to Homeland Protection Systems*”

2:40 PM – 3:15 PM Keynote Speaker: **Dr. Tilia Stingl De Vasconcelos**, University of Applied Sciences, Austria, “*Building Solution-Focused Knowledge: A Systemic Approach for Structuring reality.*”

3:15 PM – 3:30 PM Q&A

3:30 PM – 4:00 PM Coffee Break

4:00 PM – 6:30 PM Breakout Sessions

7:00 PM – 8:30 PM **Welcome Reception: Buffet Dinner.**

Tuesday, July 14th, 2015

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 plated breakfast)

Co-Chairs: **Dr. Robert Cherinka**, MITRE Corporation, USA and **Professor Ronald A. Styron, Jr.**, University of South Alabama, USA.

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

8:00 AM – 8:35 AM Keynote Speakers: **Dr. Robert Cherinka and Mr. Joseph Prezzama**, MITRE Corporation, USA, *“Innovative Approaches to Building Comprehensive Talent Pipelines: Helping to Grow a Strong and Diverse Professional Workforce.”*

8:35 AM – 9:10 AM Keynote Speaker: **Mr. Tom Hull**, Florida Polytechnic University, USA, *“The Global Impacts of 3D Printing on Innovation: A View from Florida Polytechnic University”*

9:10 AM – 9:45 AM Keynote Speakers: **Dr. Houman A. Sadri and Dr. Madelyn Flammia**, University of Central Florida, USA, *“Practical Approaches to Developing Global Competency across the Disciplines.”*

9:45 AM – 10:00 AM Q&A

10:00 AM – 12:20 PM Breakout Sessions for WMSCI 2015, IMSCI 2015 and their collocated events

10:00 AM – 12:20 PM Plenary session for CISCI and SIECI 2015 (*In Spanish*)

Moderadores: **Profesores Andrés Tremante**, Florida International University y **Nagib Callaos**, IIS y Universidad Simón Bolívar, Venezuela.

10:00 AM – 10:30 AM Ponentes: **Profesores Gabriela Vilanova y Jorge Varas**, Universidad Nacional de la Patagonia Austral, Argentina, *“Diseño de Acciones Formativas en Ambientes Virtuales de Aprendizaje”*

10:30 AM – 11:00 AM Ponente: **Profesor José Ignacio Peláez Sanchez**, Universidad de Málaga, España, *“Desde los Datos hasta el Valor: Procesos de Agregación de Información basados en el Concepto de Mayoría”*

11:00 AM – 11:30 AM Ponente: **Profesor Álvaro Turriago-Hoyos**, Universidad de la Sabana, Colombia, *“Fuentes Internas y Externas de la Innovación – de producto, procesos, mercado y organizacional – en el sector de Servicios y en el sector Industrial en Colombia”*

11:30 AM – 12:00 PM Ponentes: **Profesores Andrés Tremante**, Florida International University y **Nagib Callaos**, IIS y Universidad Simón Bolívar,

Venezuela, *“Investigación y Consultoría: Investigación a través de la Consultoría y Consultoría a través de la Investigación”*

12:00 PM – 12:20 PM PyR

12:20 PM – 1:30 PM Lunch (on your own)

1:30 PM – 3:30 PM **Plenary Session** of all Collocated Events

Co-Chairs: **Professor Russell Jay Hendel**, Towson University, USA
and **Dr. Leonid I. Perlovsky**, Northeastern University, USA

1:30 PM – 2:05 PM Keynote Speaker: **Professor Russell Jay Hendel**, Towson University, USA, *“Towards A New Cybernetic Interdisciplinary Approach To Pedagogic Challenge.”*

2: 05 PM – 2:40 PM Keynote Speaker: **Professor Wolfgang G. Stock**, University of Düsseldorf, Germany, *“Informational Urbanism. An Interdisciplinary View on ICT-driven ‘Smart’ City Development”*

2:40 PM – 3:15 PM Keynote Speakers: **Professor Osmo Kivinen** and **Lecturer Juha Hedma**, University of Turku, Finland, *“Productivity of University Research in Six Main Fields in Selected US States and EU Countries.”*

3: 15 PM – 3:30 PM Q&A

3:30 PM – 4:00 PM Coffee Break

4:00 PM – 6:30 PM Breakout Sessions

Wednesday, July 15th, 2015

8:00 AM – 12:00 PM **Registration**

7:45 AM – 10:00 AM **Plenary Session** of all Collocated Events (with plated breakfast)

Co-Chairs: **Professor Thomas Marlowe**, Seton Hall University and
Dr. Marta Szabo White, Georgia State University, USA

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

8:00 AM – 8:35 AM Keynote Speakers: **Professor Ronald A. Styron, Jr.** and **Dr. Jennifer Styron**, University of South Alabama. USA, *“Fostering Innovation in Higher Education through Entrepreneurial Leadership.”*

8:35 AM – 9:10 AM **Professor Thomas Marlowe**, Seton Hall University, USA, “*Man is the Measure of All Things. Metrics: The Good, the Bad and the Ugly.*”

9:10 AM – 9:45 AM Keynote Speaker: **Dr. Karl H. Müller**, The Steinbeis Transfer Center New Cybernetics, Vienna, Austria, “*Second-Order Science and New Cybernetics: A Revolution in Scientific Structures.*”

9:45 AM – 10:00 AM Q&A

10:00 AM – 12:20 PM Breakout Sessions

12:20 PM – 1:30 PM Lunch (on your own)

1:30 PM – 3:30 PM **Plenary Session** of all Collocated Events

Co-Chairs: **Dr. Marta Szabo White**, Georgia State University, USA and **Dr. Leonid I. Perlovsky**, Northeastern University, USA

1:30 PM – 2:05 PM Keynote Speaker: **Professor Ya-Huei Wang**, Chung Shan Medical University, Taiwan, “*The Use of Narrative Medicine Literature for Interdisciplinary Communication through the Internet Learning System.*”

2:05 PM – 2:40 PM Keynote Speaker: **Dr. Marta Szabo White**, Georgia State University, USA, “*Academic Ethos, Pathos, and Logos Intersect with Innovation and Entrepreneurship.*”

2:40 PM – 3:15 PM Keynote Speaker: **Professor Ulrich Schmitt**, University of Stellenbosch, South Africa, “*Knowledge Management Systems as an Interdisciplinary Communication and Personalized General-Purpose Technology*”

3:15 PM – 3:30 PM Q&A

3:30 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.

Joint Event of the Collocated Conferences

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Conversational Participative Session – Sunday, July 12th, 2015, 1:00 PM - 2:00 PM

“Disciplinary Research is a Necessary Condition for Science Advancement but it is not a Sufficient Condition for Real Life Problem Solving and Technological Innovations, because in these cases Interdisciplinary Research and Communication are also Necessary” Is this affirmation correct? Why?

Panelists and Facilitators



Dr. Jeremy Horne

**President-emeritus,
Southwest Area Division,
American Association for the
Advancement of Science (AAAS), USA**



Dr. Nagib Callaos

**President of the International Institute
of Informatics and Systemic, USA
Former Dean of Research and
Development of the University Simon
Bolívar, Venezuela**

Abstract

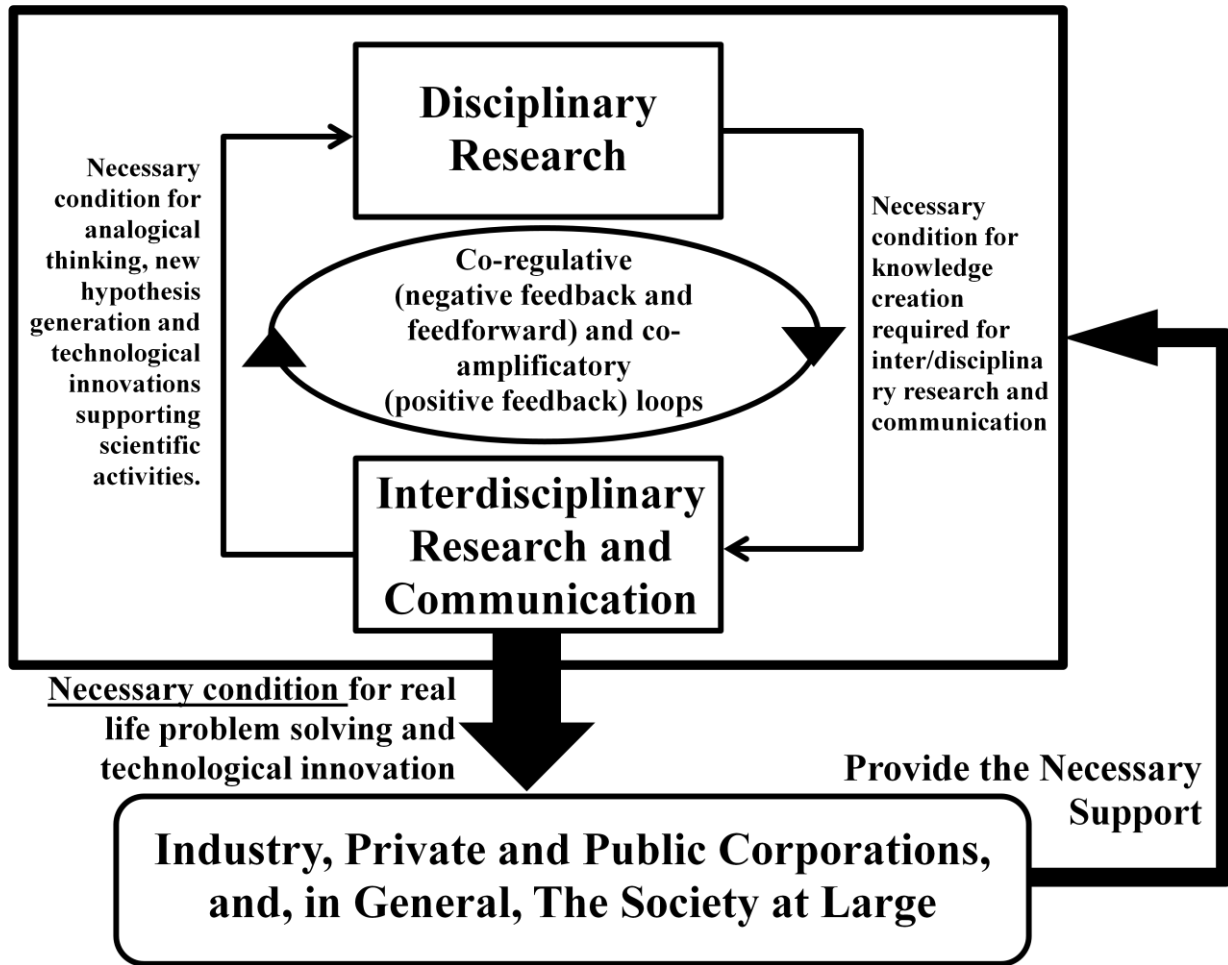
The main purpose of this Conversational Participative Session is to support an open forum with regards to the Systemic-Cybernetic relationships between disciplinary research and inter-disciplinary communications and/research. The inputs to this conversational session are some questions related to the following affirmation:

“Disciplinary Research is a Necessary Condition for Science Advancement but it is not a Sufficient Condition for Real Life Problem Solving and Technological Innovations, because in these cases Interdisciplinary Research and Communication are also Necessary”

Examples of the associated questions are the following (other questions might be raised by the audience):

- Is this affirmation right?
- If not, Why?

- If yes, Why?
- What are the implicit and/or explicit relationships between Science and Engineering, real life problem solving, and technological innovations?
- Do the following systemic-cybernetic relationships make any sense to you? If not why?
- Is there any association between Academic Ethos, Pathos, and Logos and relating explicitly disciplinary research and interdisciplinary communication and research?



Information, knowledge (epiteme) and opinion (doxa) sharing would provide input to the attendees of this session so they feel enabled to write reflection-based or practice-based position “invited papers”, which will be included in the post-conference edition of the conference proceedings with no additional costs for the respective authors. The best of these papers will also be published in the Journal with no additional cost for the respective author. These papers will be distinguished as “invited papers” or “position papers”.

Short Bios

Dr Jeremy Horne is President-emeritus of the Southwest Area Division of the American Association for the Advancement of Science: AAAS. He currently the Chief Executive Officer of the Inventors Assistance League, a non-profit organization dedicated to helping independent inventors bring their

creations to fruition. He is doing research and writing in the areas of Logic as the language of innate order in the universe, which is an ongoing 40 year project.

Dr Horne taught many courses in political science and technology, delivered many presentations on the philosophy of scientific methods for the American Association for the Advancement of Science (AAAS) and Quantum Mind conferences, has been reviewer for various journals about the structure and process in binary space, consciousness studies, systems, theory, and philosophy of science, and Documentation Systems Developer, for White Sands Missile Range in New Mexico. His most recent publication consists of two chapters on the philosophy of binary logic and artificial minds in *Research and Applications in Global Supercomputing*, released by IGI Global Press March 2015.

Dr. Horne is member of several professional organizations such as The American Association for the Advancement of Science, (AAAS, the World's largest general scientific society) where he was President of its Southwest Area Division; Bioelectromagnetics Society; Institute of Electrical and Electronics Engineers where he is a voting member of Fiber Optic Technical Advisory Group.

Dr. Jeremy Horne earned his Ph. D. in Philosophy at University of Florida, Gainesville; His Master of Science in Political Science at New Haven, CT, and his Bachelor in Art in International Relation at Johns Hopkins University, Baltimore, He has been a member of the Phi Kappa Phi, National Academic Honor Society, and his name was included in several Who's Who directories.

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 presidents of several organization 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) 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 the Ethos, Pathos and Logos of both episteme and techne as well as of both Science and Engineering/technology. This has strong consequences in the Ethos, Pathos and Logos, especially in Higher education.

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Conversational Participative Wokshop – Sunday, July 12th, 2015, 2:00 PM - 4:30 PM



Professor Emeritus Stuart A. Umpleby

The George Washington University, USA
Director of the Research Program in Social and Organizational Learning
Former President of The American Society of Cybernetics

Keynote Address

“Academic Globalization”

Abstract

In this two hour conversation we shall review where we are in the process of creating a worldwide, networked university system. Several factors are driving the rapid growth and improvement of the Global University System – the internet, big data, data analytics, and an expansion of philosophy of science.

We shall use a conversational method called Appreciative Inquiry. Each participant will answer a question using note cards. The cards will be placed on a board, clustered and discussed. Then participants will answer a second question. This method gives everyone an opportunity to participate. The questions we shall address, if time permits, are: What is working now? Why is it working? What is our vision of the future? What actions would be helpful?

For results of an earlier discussion using a similar method, see

http://www.gwu.edu/~umpleby/papers/2007_WMSCI_PSP_academic_globalization_6-1.doc.

Short Bio

Stuart Umpleby is a professor emeritus in the Department of Management and Director of the Research Program in Social and Organizational Learning in the School of Business at The George Washington University. He received degrees in engineering, political science, and communications from the University of Illinois in Urbana-Champaign. From 1975 to the present he has been a professor at The George Washington University. From 1994 to 1997 he was the faculty facilitator of the Quality and

Innovation Initiative in the GW School of Business and Public Management. From 1997 to 2000 he worked on the Year 2000 Computer Crisis, viewing it as an opportunity to test social science theories using a before and after research design. He teaches courses in the philosophy of science, cross-cultural management, organizational behavior, cybernetics, and systems science. Other interests include process improvement methods, group facilitation methods, and the use of computer networks.

Umpleby has published articles in *Science, Policy Sciences, Population and Environment, Science Communication, The Futurist, Futures, World Futures, The Journal of Aesthetic Education, Simulation and Games, Business and Society Review, Journal of International Business and Economics, Review of Business Research, Telecommunications Policy, Journal of the Washington Academy of Sciences, Reflexive Control, Systems Practice, Kybernetes, Cybernetics and Human Knowing, Cybernetics and Systems* and several foreign language journals. He is a past president of the American Society for Cybernetics. He is Associate Editor of the journal Cybernetics and Systems.

Umpleby has received research grants from the National Science Foundation, the Charles F. Kettering Foundation, the Charles Stewart Mott Foundation, the Nathan Cummings Foundation, the U.S. Department of State's Bureau of Educational and Cultural Affairs and the Central Asia Research Initiative. He has consulted with the World Bank, with government agencies in the U.S. and Canada and with corporations in the U.S., Europe, Japan, and China. He has advised on the creation of a PhD program in management and business in Almaty, Kazakhstan. In May 2008 he conducted a video conference on "How to do Research" with Uzbek scholars at the U.S. Embassy in Tashkent.

In connection with his work in systems theory and management, he has been a guest scholar at the Wharton School of the University of Pennsylvania, the International Institute for Applied Systems Analysis in Laxenburg, Austria, the University of Vienna, the Institute for Advanced Studies in Vienna, Austria, and the University of St. Gallen in St. Gallen, Switzerland. He is a member of the Principia Cybernetica Project at the Free University of Brussels. In spring 2004 he was a Fulbright Scholar in the School of Economics and Business, University of Sarajevo, Sarajevo, Bosnia-Herzegovina.

Between 1981 and 1988 Umpleby was the American coordinator of a series of meetings between American and Russian scientists to discuss the foundations of cybernetics and systems theory. These meetings were supported by the Russian Academy of Sciences and the International Research and Exchanges Board of the American Council of Learned Societies. His interest in the transitions in the post-communist countries has resulted in his presenting lectures at various institutes of the Academies of Science of Russia, Ukraine, Poland, Hungary, and Bulgaria. He is a member of the American Association for the Advancement of Science, the American Society for Cybernetics, the Austrian Society for Cybernetic Studies, the Society for the Advancement of Socio-Economics, and the International Society for the Systems Sciences.

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Conversational Participative Session – Sunday, July 12th, 2015, 4:30 PM - 5:30 PM

Conversational Panel

Panelists: **Professor Emeritus Stuart A. Umpleby**, The George Washington University, USA, **Dr. Leonid Perlovsky**, Northeastern University, previously visiting scholar at Harvard University, USA, **Dr. Jeremy Horne**, President-emeritus, Southwest Area Division, American Association for the Advancement of Science (AAAS), USA and **Dr. Nagib Callaos**, IIS, USA.

Being a conversational session, each attendee may have the role of a panelist.

Topic: *Higher Education or Higher Instruction?*

Abstract

“Education is that which remains, if one has forgotten everything he learned in school.” Albert Einstein¹

“But education, in the true sense, is not mere instruction...It is unfolding the whole human nature. It is growing up in all things to our highest possibility” J. F. Clarke²

“By education I mean an all-round drawing out of the best in child and man-body, mind and spirit. Literacy is not the end of education or even the beginning.” Mahatma Gandhi³

The purpose of conversational is to differentiate between the notions of Education and Instruction, especially in the context of Higher Education, and to identify the kind of relationships that would make more effective the implementation of both of them.

¹ Several authors can be cited reiterating in similar words this quote (e.g. **B. F. Skinner**, E. D. Battle, **Edouard Herriot**, **C. F. Thwing**, **Ralph Waldo Emerson**, **Agnes F. Perkins**, **James Bryant Conant**, Evan Esar, **E. F. L. Wood**, **George Savile**, **Lord Halifax**, Alan Bennett, etc) Albert Einstein attribute to an unidentified “wit”. The complete citation from Einstein is the following: “If a young man has trained his muscles and physical endurance by gymnastics and walking, he will later be fitted for every physical work. This is also analogous to the training of the mind and the exercising of the mental and manual skill. Thus **the wit** was not wrong who defined education in this way: *“Education is that which remains, if one has forgotten everything he learned in school.”* Albert Einstein, 1936, 1956, p. 36 in the 1984 edition.

² Clarke, J. F. (1810-1888), 2013 edition, p. 36

³ Mahatma Mohan Karamchand Gandhi, Harijan: July 31, 1937,

To confuse the meanings of these terms or what concepts and uses are involved in their respective notions might be the source of intellectual confusion, unintentional misleading, and, hence, of pragmatic ineffectiveness, especially with regards to educational processes. Our hope is to continue reflecting and researching on this issue and, potentially, generate reflections and research from teachers and professors specifically regarding what is (and/or what should be) the meaning of *Higher Education*, and its differences with what we might call *Higher Instruction*. An increasing number of scholars (consciously or unconsciously) perceive or conceive some universities as institutions of Higher Instruction rather than Higher Education.

In the opinion of some of the panelist, there is an increasing confusion among the terms of “education” and “instruction” and sometimes they are used almost as synonyms. Both terms are much related, but they do not mean the same ideas or concepts. Let us the metaphor of “color” and “surface”, we know that both are completely different concepts though very related to each other. There is no color that is not seen on a surface and no empirical surface with no color on it, but to confuse the notions of “color” and “surface” might take us to a non-sense confusion between “Optics” with Geometry”. “Color” and “surface” should be differentiated as concepts or notions in order to understand the reality in which both of them co-exist together.⁴

To do so, we will not try to conceptually define “education” and “instruction.” This is not the place to do it, nor is it our intention. Furthermore, from a systemic perspective, as well as from a post-modernist stand, definition of education should be done in the context of a culture and/or value system. Consequently, the definition should be done by the users of specific educational systems and processes. This is why we worked out in another article a meta-definition of “Education,” i.e. we defined a way of producing a definition of education by means of the corresponding users (students, parents, teachers, etc). *Our purpose in this conversational session is 1) to share and collect important denotations and connotations of the notions of “Education” and “Instruction” with the objective to differentiate them in order to effectively relate them; and 2) to provide the attendees with the option to write, after the conference is over, an invited position of reflection paper* which, if accepted, will be included in the post-conference volume of the conference proceedings with no additional cost for the respective author(s). Best papers will be selected for their publication in the journal with no additional cost either for their author(s).

⁴ It has been reported that this metaphor (color, surface) was used by Aristotle in order to present the same reasoning we are providing with it, but we could not find in Aristotle any use of this metaphor to refer to the necessity of analytical thinking in order to understand the respective reality. We are not meaning that it is not an Aristotelian metaphor, but that we cannot make any reference regarding this use of the relationship between color and surface.. But, Aristotle did treat at length the relationships between “color” and “surface.” He explicitly affirms that “it is a property of a surface to be the primary thing that is coloured, has used in addition something perceptible, being coloured, but *something which evidently always belongs*, and the property of a surface will in this respect have been correctly rendered.” 131b33-7; Oxford Translation, 1993, p. 222 (italics and emphasis added).

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Plenary Session – Monday, July 13th, 2015, 7:45 AM - 10 AM



Professor Shigehiro Hashimoto

Kogakuin University, Japan
Associate to the President and Dean of Admissions Center
Doctor of Engineering and
Doctor of Medicine Biomedical Engineering

Keynote Address

"How to Learn Multidisciplinary Idea"

Abstract

The way how to learn multidisciplinary idea will be discussed.

Biomedical engineering is exemplified for multidisciplinary field. “Biomedical Engineering” makes multidisciplinary research area, which includes biology, medicine, engineering and others. The cross-cultural student seminars on biomedical engineering have been exemplified as the case studies. In the group fieldwork, students divided into the small group. Each group visited the university hospital to find research topics related to biomedical engineering as the fieldwork by the cross cultural group. Students pointed out several topics related to multidisciplinary field, which includes mechanics, informatics, and systemics. They have learned how to communicate with people, who has variety of cultural backgrounds. Through the training, students realized another way of thinking, which stands on another base of idea. The process is effective to master multidisciplinary idea.

The World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI) gives good opportunity to learn multidisciplinary idea, because it welcomes not only variety of special fields of study, but also variety of researchers from variety of cultural backgrounds. Many academic conferences are concentrated into special field so that the number of participating countries is limited. Although the specialized group is convenient for peer review, it is not almighty for the global society. The global society consists of variety of elements. The single discipline is not enough for the application to the global society. Multidisciplinary idea breaks through the global problem, and creates innovation.

Short Bio

Professor Shigehiro Hashimoto is Doctor of Medicine from Kitasato University in 1987, and Doctor of Engineering from Tokyo Institute of Technology in 1990. He is the current Associate to the President and Dean of Admissions Center of the Kogakuin University (Japan).

Professor Hashimoto was Research. Associate at the School of Medicine, Kitasato University, (1981-1989), Asst. Prof. in the School of Medicine, Kitasato University (1989-1994), Assoc. Prof. Osaka Institute of Technology (1994-2001), and Professor at Osaka Institute of Technology (2001-2011). He also was professor and Chair of the Department of Biomedical Engineering at Osaka Institute of Technology (2005) and Director of its Medical Engineering Research Center (2005-2011)

Professor Hashimoto held internship in Research Center for Artificial Heart in Free University in Berlin, Germany in 1977.

He is Doctor of Medicine from Kitasato University, Japan, in 1987, and Doctor of Engineering from Tokyo Institute of Technology, Japan, in 1990.

He was Assistant Professor, in Bioengineering, in the School of Medicine, Kitasato University, Japan, 1989-1994.

He was Professor in the Department of Electronics, Osaka Institute of Technology, Japan, 2001-2004

Professor Hashimoto was the Department Creator of Biomedical Engineering, Osaka Institute of Technology, Japan, 2005; and Director of Medical Engineering Research Center, Osaka Institute of Technology, Japan, 2005-2011.

Professor Hashimoto is in the present:

- Professor of the Department of Mechanical Engineering, Kogakuin University, Japan, 2011-.
- Associate to the President, Kogakuin University, Japan, 2012-.
- Dean of Admissions Center, Kogakuin University, Japan, 2012

Joint Event of the Collocated Conferences

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Décima Cuarta Conferencia Iberoamericana en Sistemas, Cibernética e Informática: CISCI 2015

Plenary Session – Monday, July 13th, 2015, 7:45 AM – 10 AM



Professor Emeritus Stuart A. Umpleby

The George Washington University, USA
Director of the Research Program in Social and Organizational Learning
Former President of The American Society of Cybernetics

Keynote Address

***“A Global Strategy for Human Development as an Example of
Second Order Science”***

Abstract

In the 1960s the Institute of Cultural Affairs, based in Chicago, Illinois, started working with poor communities, helping people come together to work for positive change. They developed some very useful methods for facilitating group conversations. They used these in poor communities around the world. They would come together each summer to discuss what worked and what did not. They would modify their methods, plan the next year's activities, implement the activities, then come together the following summer to discuss what worked, etc. Academics do something similar with annual conferences, but they are more focused on publishing academic articles than on improving the lives of real people in real communities. For examples of such conversational exercises, see www.gwu.edu/~umpleby/ptp.html

Part of the motivation for defining and creating second order science is to recognize and increase innovative, problem-solving oriented social actions, often conducted by Non-Governmental Organizations. Currently universities have large numbers of students and faculty members seeking to advance knowledge in the social sciences, using a conception of social science taken from the physical sciences. But social systems are composed of purposeful, thinking participants, not inanimate objects. Perhaps in addition to searching for reliable cause and effect relationships part of what is called social science could be devoted to developing conversational methods that aid joint action toward shared goals. If this goal were be accepted within the social sciences in universities there would be a great increase in the number of people working to improve social systems and developing more effective conversational methods.

Short Bio

Stuart Umpleby is a professor emeritus in the Department of Management and Director of the Research Program in Social and Organizational Learning in the School of Business at The George Washington University. He received degrees in engineering, political science, and communications from the University of Illinois in Urbana-Champaign. From 1975 to the present he has been a professor at The George Washington University. From 1994 to 1997 he was the faculty facilitator of the Quality and Innovation Initiative in the GW School of Business and Public Management. From 1997 to 2000 he worked on the Year 2000 Computer Crisis, viewing it as an opportunity to test social science theories using a before and after research design. He teaches courses in the philosophy of science, cross-cultural management, organizational behavior, cybernetics, and systems science. Other interests include process improvement methods, group facilitation methods, and the use of computer networks.

Umpleby has published articles in *Science, Policy Sciences, Population and Environment, Science Communication, The Futurist, Futures, World Futures, The Journal of Aesthetic Education, Simulation and Games, Business and Society Review, Journal of International Business and Economics, Review of Business Research, Telecommunications Policy, Journal of the Washington Academy of Sciences, Reflexive Control, Systems Practice, Kybernetes, Cybernetics and Human Knowing, Cybernetics and Systems* and several foreign language journals. He is a past president of the American Society for Cybernetics. He is Associate Editor of the journal Cybernetics and Systems.

Umpleby has received research grants from the National Science Foundation, the Charles F. Kettering Foundation, the Charles Stewart Mott Foundation, the Nathan Cummings Foundation, the U.S. Department of State's Bureau of Educational and Cultural Affairs and the Central Asia Research Initiative. He has consulted with the World Bank, with government agencies in the U.S. and Canada and with corporations in the U.S., Europe, Japan, and China. He has advised on the creation of a PhD program in management and business in Almaty, Kazakhstan. In May 2008 he conducted a video conference on "How to do Research" with Uzbek scholars at the U.S. Embassy in Tashkent.

In connection with his work in systems theory and management, he has been a guest scholar at the Wharton School of the University of Pennsylvania, the International Institute for Applied Systems Analysis in Laxenburg, Austria, the University of Vienna, the Institute for Advanced Studies in Vienna, Austria, and the University of St. Gallen in St. Gallen, Switzerland. He is a member of the Principia Cybernetica Project at the Free University of Brussels. In spring 2004 he was a Fulbright Scholar in the School of Economics and Business, University of Sarajevo, Sarajevo, Bosnia-Herzegovina.

Between 1981 and 1988 Umpleby was the American coordinator of a series of meetings between American and Russian scientists to discuss the foundations of cybernetics and systems theory. These meetings were supported by the Russian Academy of Sciences and the International Research and Exchanges Board of the American Council of Learned Societies. His interest in the transitions in the post-communist countries has resulted in his presenting lectures at various institutes of the Academies of Science of Russia, Ukraine, Poland, Hungary, and Bulgaria. He is a member of the American Association for the Advancement of Science, the American Society for Cybernetics, the Austrian Society for Cybernetic Studies, the Society for the Advancement of Socio-Economics, and the International Society for the Systems Sciences.

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Plenary Session – Monday, July 13th, 2015, 7:45 AM - 10 AM



Dr. Leonid Perlovsky

Northeastern University, USA
Previously Visiting Scholar at Harvard University, USA and
Principal Research Scientist at
The Air Force Research Laboratory, USA

Keynote Address

“Aesthetic Emotions and Informatics”

Abstract

Among fundamental principles of cognition are instincts, concepts, and emotions. Whereas concepts are mental models of reality, emotions evaluate concepts for instinct satisfaction. Cognitive principles governing informatics include the instinct for knowledge driving acquisition of better concepts. Emotions related to this instinct are aesthetic emotions. Informatics and communication require integration of conceptual and emotional mechanisms.

Concepts and aesthetic emotions are organized into the hierarchy. At lower levels of perception, concepts are neural models of objects, and aesthetic emotions are mostly below the level of consciousness. At higher levels of abstract concepts aesthetic emotions are accessible to consciousness. Cognitive concepts at every level of the hierarchy unify lower-level concepts into more general and abstract concepts. Near the "top" of the hierarchy concepts attempt to unify the entire life experience. These concepts attempting to understand the entire life in its unity we perceive as the meaning of life. The KI strives to improve these concepts, and aesthetic emotions corresponding to these improvements are emotions of the beautiful. The KI also strives to make the beautiful a part of our life, in other words the KI improves concepts of behavior unifying the life's meaning. Aesthetic emotions corresponding to improvement of these "highest" concepts of behavior are emotions of the sublime, the foundations of all religions.

Discussions of these concepts near the top of the hierarchy are complicated due to the fact that contents of these concepts are not accessible to consciousness. We can discuss these concepts in language, which is accessible to consciousness at all hierarchical levels. Language is accessible to consciousness because language concepts (words, phrases) exist "ready-made" in the surrounding culture and language. But cognitive concepts do not exist "ready-made" in the world. The fundamental difference between language and cognitive concepts is that language concepts only concern facts of language, but they do not concern

facts of the world, whereas cognitive concepts model the world. For this reason children can speak and understand language without fully understanding the cognitive meanings of the world. The difference between children and adults in understanding language is that adults also understand cognitive concepts and can relate words to the world. Children's ability to relate words to the world is limited. The mental hierarchy is really the dual hierarchy of cognition and language. The ability for the cognitive hierarchy is due to language, which become conscious at an early age. During growing up language supports development of cognition, which connects human understanding to the world.

Thinking moves smoothly between language and cognition, and these transitions are not noticed by consciousness. Abstract concepts at higher levels of the mental hierarchy usually are understood due to language, people can discuss their contents in words, whereas the real meanings of abstract concepts, the corresponding processes in the world and mind may not be accessible to consciousness. Connecting knowledge to entities in the world requires unifying concepts and emotions. This integration of knowledge and aesthetic emotions is accomplished with the help of music and prosodial emotions of speech.

Thus informatics understood as communicating knowledge in its interaction with the world requires integrating knowledge with aesthetic emotions, including the beautiful, prosodial emotions in language, and music.

Short Bio

Dr. Leonid Perlovsky is Professor of Psychology at Northeastern University and CEO LP Information Technology. In the past, Visiting Scholar at Harvard University, School of Engineering and Applied Sciences and Medical School Athinoula Martinos Brain Imaging Center, Technical Advisor and Principal Research Scientist at the AF Research Lab. He created a new area of cognitive mathematical engineering, dynamic logic, which solved a number of problems unsolvable for decades. He leads research projects on mathematical models of the mind mechanisms including higher cognitive functions, language, emotions of the beautiful, music, cognitive algorithms for various applications. In leading brain imaging labs around the world his models have been proven experimentally to explain the mind mechanisms not understood previously. As Chief Scientist at Nichols Research, a \$500mm high-tech DOD contractor, he led the corporate research in intelligent systems. He served as professor at Novosibirsk University and New York University; as a principal in commercial startups developing tools for biotechnology, text understanding, and financial predictions. He is invited as a keynote plenary speaker and tutorial lecturer worldwide, including most prestigious venues such as the Nobel Forum at Karolinska Institutet Stockholm; published more than 500 papers, 17 book chapters, and 5 books including "Neural Networks and Intellect," Oxford University Press, 2001 (currently in the 3rd printing) and "Emotional, Cognitive, Neural Algorithms with Engineering Applications," Springer 2011; awarded 2 patents. Dr. Perlovsky participates in organizing conferences on Computational Intelligence, Chair for the IEEE Task Force on The Mind and Brain, on the International Neural Network Society (INNS) Board of Governors, past Chair for the IEEE Boston Computational Intelligence Chapter, Chair of The INNS Award Committee. He has founded and serves as Editor-in-Chief for "Physics of Life Reviews," the IF=9.5, ranked #4 in the world by Thomson Reuters. He received National and International awards including The Best Paper Award at Russian most prestigious magazine, Zvezda; the Gabor Award, the top engineering award from the INNS; and the John McLucas Award, the highest US Air Force Award for basic research.

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Plenary Session – Monday, July 13th, 2015, 1:30 PM – 3:30 PM



Dr. Karl H. Müller

**Director of The Steinbeis Transfer Center
New Cybernetics, Vienna, Austria
Professor at the University of Ljubljana, Slovenia**

Memorial Lecture

***“De profundis. Ranulph Glanville’s Approach to
Second-Order Cybernetics”***

Abstract

Ranulph Glanville (June 13, 1946 – December 20, 2014) was a prolific writer, a magic designer, an avant-garde musician, a cybernetician of the first- and of the second-order, a philosopher in disguise, to name only a few roles. His contributions to second-order cybernetics and to areas like design, philosophy, conversation theory, methodology or games, with the tools and perspectives of his version of second-order cybernetics were unique and have been published recently under the title “The Black Box” in three volumes in edition echoraum (Glanville, 2009, 2012, 2014).

In this short memorial lecture I will undertake a systematic attempt to make his work more easily accessible for others, including myself, and to provide a special location for Ranulph Glanville within the research program of second-order cybernetics in particular and within the research tradition of radical constructivism in general. It will become my central thesis in this lecture that Ranulph Glanville’s special role and function was to provide a meta-approach to all the available research programs in radical constructivism. This framework was transcendental in nature and focused on the conditions of the possibility for observation, for communication, for language, for knowledge or for learning to emerge at all. Thus, Ranulph Glanville reserved a unique place for himself that, at the same time, turned out to be magic for his explorations and very difficult to grasp for his intellectual environment.

Literature:

- Glanville, R. (2009), *The Black Box*, vol. III: *39 Steps*. Wien:edition echoraum
Glanville, R. (2012), *The Black Box*, vol. I: *Cybernetic Circles*. Wien:edition echoraum
Glanville, R. (2014), *The Black Box*, vol. II: *Living in Cybernetic Circles*. Wien:edition echoraum

Short Bio

Karl H. Müller (1953) was head of the Departments of Political Science and Sociology at the Institute for Advanced Studies (IHS) in Vienna (1997 – 2001) of the Wiener Institute for Social Science Documentation and Methodology (WISDOM), Austria's centre for research infrastructures in the social sciences and of the Heinz von Foerster Society (2000 – 2015). Currently he is Director of the Steinbeis Transfer Centre New Cybernetics and senior researcher at the Faculty of Social Sciences of the University of Ljubljana. His main research interests range from problems of complex modeling and from the potential of complex data visualization in the social sciences to the frontiers of second order cybernetics, of radical constructivism and of contemporary RISC-societies.

His recent publications reflect these various interests, namely, (with Lučka Kajfež-Bogataj, Ivan Svetlik, Niko Toš (eds.)), *Modern RISC-Societies: Towards a New Paradigm of Societal Evolution* (Wien:edition echoraum, 2010), *The New Science of Cybernetics. Towards the Evolution of Living Research Designs. Vol. II. Theory* (Wien:edition echoraum, 2011), *The New Science of Cybernetics. The Evolution of Living Research Designs, vol. III: Research and Design Rules* (Wien:edition echoraum, 2012), (together with Niko Toš). *Towards a New Kind of Social Science. Social Research in the Context of Science II and RISC-Societies* (Wien:edition echoraum, 2012), *New Cybernetics. The Structure of a Scientific Revolution* (Wien:edition echoraum, 2015, to be published); (with Brina Malnar), *Surveys and Self-Reflexivity. A Second-Order Study of the European Social Survey (ESS)* (Wien:edition echoraum, 2015, to be published)

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Plenary Session – Monday, July 13th, 2015, 1:30 PM – 3:30 PM



Dr. Mario Lamanna

**Evoelectronics, Italy
and**

**Selex-SI, USA
Senior Scientist**

Keynote Address

“A Multidisciplinary Approach to Homeland Protection Systems”

Abstract

Homeland Protection Systems cover a large set of critical topics (e.g. secure communications, cyber security, border control, critical infrastructure protection, transport protection, territory protection), which are vital for ensuring healthy and stable society, promoting economic growth and protecting individual and collective liberty. Addressing Homeland Protection challenges requires to analyze, understand and predict the behavior of a set of different complex systems (e.g. communication networks, transportation systems, energy grids, etc.). Countering threats to the above complex systems require a comprehensive multidisciplinary and multilayered approach. The basic ideas of this approach are presented and analyzed, with the goal to identify the solutions offered by the new technology advances.

Short Bio

Dr. Mario LaManna received the degree in Electronic Engineering from the University S. Anna College in Pisa (Italy). He has spent most of his professional career working with Selex ES Finmeccanica SpA, (Italy) and as a Teaching Professor with the University of Pisa. He has been working as Program Manager of a number of international cooperative projects in the fields of Military, Aerospace and Security, in Pisa, Rome, Europe and US. He is presently working with Evoelectronics SRL in Rome, Italy. He has participated in more than 100 international conferences as paper author, session chairman and invited speaker. He is a Member of IEEE and IIS and an Expert Member of EDA and EU.

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Plenary Session – Monday, July 13th, 2015, 1:30 PM - 3:30 PM



Dr. Tilia Stingl De Vasconcelos

Academia Nova, Austria

University of Applied Sciences Austria

Information Management

Cross Cultural Communication

Keynote Address

***“Building Solution-Focused Knowledge:
A Systemic Approach for Structuring Reality”***

Abstract

The main purpose of this keynote is to support an open forum focused on solutions and/or ideas to contribute to a knowledge-driven society.

Searching for solutions is a profoundly human characteristic. For many of us, a problem or an obstacle is a challenge rather than an impediment. This desire to overcome barriers has brought us to where we are now: to a world full of solutions and technologies for diverse problems, but also a world which is getting more and more complex, a world in which new problems emerge daily, and in which we often lack the time needed to analyze difficult situations. In addition, social networks gave social events a lot of power. Today, almost every innovation can be judged and eventually accepted or rejected by the public before even the developers have completely understood their own inventions. Thus it seems to be crucial for every scientific field to understand how systems dynamics and social interaction work.

When new inventions make their way into the public, innumerable financial, economic, social and political problems emerge. In those cases, the great challenge we face is to find ways to communicate clearly among different research fields. Cybernetics and (social) systems theory offer us new ideas, new means to comprehend social complexity and understand interdisciplinary communication. Novel systemic approaches are showing remarkable results in breaking communicational boundaries among different disciplines and in dissipating conflicts. I highlight specific examples of their use in business

contexts and provide an estimate of applicability, benefits and challenges for their implementation in organizations.

Short Bio

Dr. Tilia Stingl de Vasconcelos Guedes is currently lecturer at University of Applied Sciences in Austria (academia nova GmbH) in the area of Business Administration as well as Soft Skills. She is also active as autonomous Business Consultant. Dr. Stingl de Vasconcelos has a bachelor and master degree in Computer Science and Business Administration at the Vienna University of Technology, is post-graduate on Magazine Journalism (University of Vienna) and earned her PhD (Doctor of Philosophy) in Communication Science at the University of Vienna working in the field of Knowledge Management and Organizational Communication. Dr. Stingl de Vasconcelos has also worked in the financial sector and later in management consulting. Today her research interests are in the field of organizational communication and systemic approaches.

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Plenary Session – Tuesday, July 14th, 2015, 7:45 AM - 10:00 AM



Dr. Robert Cherinka

**MITRE Corporation, USA
Senior Principal
Information Systems Engineer**



Eng. Joseph Prezzama

**MITRE Corporation, USA
Associate Department Head,
Tampa Operations**

Keynote Address

***“Innovative Approaches to Building Comprehensive Talent Pipelines:
Helping to Grow a Strong and Diverse Professional Workforce”***

Abstract

The world today is constantly changing requiring organizations to adapt quickly and seek expertise to help meet the demands on their business. There are many workforce challenges that organizations seek to overcome, and one of the hardest things to do in modern corporations is to keep the talent pool young and vibrant. Early career hires tend to bring new and exciting ideas into play that may not even be considered by their more seasoned peers. The challenge with early career hires, especially in the Science, Technology, Engineering & Math (STEM) career fields, is the extreme difficulty in finding candidates who, not only have book knowledge, but also have hands-on, real world experience. Statistics show that this is a real concern to professional workforce employers. In this presentation, we highlight a model aimed at adopting new approaches for seeking and evaluating high

quality candidates for on-boarding, conducting interviews and hiring to build a corporate talent pipeline. We discuss the model as it relates to recruiting, training, competition-based interviewing and providing hands-on work experience toward helping to build strong professionals in an organization. We conclude by highlighting several examples of successful approaches and their outcomes.

Short Bios

Dr. Robert Cherinka is a Senior Principal Information Systems Engineer for the MITRE Corporation, located in Tampa, FL. His expertise is in software and process engineering, with a focus toward XML-based web service and agile development technologies. Bob is currently a Department Head for Agile Engineering and Interoperability, leading a distributed team of IT professionals located at 7 MITRE locations in developing and applying emerging technologies that enable information services and interoperability across several major US Government domains. Dr. Cherinka earned a Ph.D. and M.S. in computer science from Old Dominion University, Norfolk, Virginia, leading research in static analysis and testing techniques for component-based systems. In addition, he earned a B.S. in computer science in 1987 from the University of Pittsburgh. After 6 years in the US Air Force, he joined MITRE in 1993.

Mr. Joseph Prezzama is currently the Associate Department Head for the MITRE Tampa Operations facility. Mr. Prezzama has supported the Department of Defense for over 20 years in the areas of tactical communications and strategic enterprise planning. In 1996, Mr. Prezzama earned a Masters of Science in Software Engineering from Monmouth University, Eatontown, New Jersey. Prior to that, he earned a Bachelor of Science in Electrical Engineering from Trenton State College, Ewing, New Jersey. He is a member of and has been published in AFCEA, and is a senior member of the IEEE, IEEE Communications Society.

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Plenary Session – Tuesday, July 14th, 2015, 7:45 AM – 10:00 AM



Mr. Tom Hull

**Florida Polytechnic University, USA
Vice President and Chief Information Officer**

Former: VP and CIO of Pace University; VP and CIO of Siena College; VP and CIO of Visions FCU; IBM Director

Keynote Address

"The Global Impacts of 3D Printing on Innovation: A View from Florida Polytechnic University"

Abstract

The vision of starting a new University in the State of Florida was to achieve an innovative, STEM focused and market driven educational institution that has impact on industry, research and the economy with a technology corridor and silicon-valley like affect. With that motivation we needed to demonstrate advanced and applied technology for innovation and entrepreneurship that is integrated with the University curriculum especially engineering and design courses. Our approach was to create innovation labs that included an innovation center in the form of a 3D Printing Lab that had latest hardware and software technology, prototype capability, scaled to serve groups of students and faculty and partnership with industry companies that were inventing the next generation of technology. The result was a 3D Printing Rapid Application Development (RAD) Makerspace that employed the concepts of rapid prototyping and generation of real objects designed in the Lab. The results are immediate high interest in the space and it's attraction of various people based on it's showcase and innovation capabilities.

Short Bio

Vice President and Chief Information Officer at Florida Polytechnic University

Tom Hull is the leader of Florida Polytechnic's Technology Services Department. Hull's role is to plan for and implement the technology systems at Florida Polytechnic to reflect and enhance the cutting-edge, 21st Century teaching, learning and research environments at the University.

The division he oversees provides technology and user services, leadership, consulting and innovative ideas and solutions to support the University and its mission.

Hull has served as CIO for several universities in this 30-year career. Most recently he was Vice President and Chief Information Officer at Pace University in New York City. He also was CIO at Virginia Commonwealth University and Siena College in the Albany, New York area. His background includes strategic technology planning for IBM, where he was Executive Director for IBM Global Services. He held a similar post at the U.S. Defense Department, where he worked on a Strategic Technology Plan for the Pentagon, and he performed a Lucent Bell-Labs divestiture to a new company, Viasystems in the U.S., Mexico and China.

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Plenary Session – Tuesday, July 14th, 2015, 7:45 AM – 10:00 AM



Dr. Houman A. Sadri

**University of Central Florida, USA
Political Science Department**



Dr. Madelyn Flammia

**University of Central Florida, USA
Department of English**

Keynote Address

***“Practical Approaches to Developing Global Competency
Across the Disciplines”***

Abstract

The keynote speakers will discuss a series of assignments they have created to help students develop their global competency. One important aspect of global competency is awareness of and sensitivity to cultural differences. The assignments are designed to be used either individually or as a sequence. The assignments can be used to develop several information fluency and global competency skills. The information fluency skills include the ability to:

- Conduct research on global issues
- Evaluate sources on global issues
- Access and evaluate non-US research sources
- Identify electronic sources that include intercultural content
- Evaluate the credibility of electronic sources and analyze their cultural biases
- Synthesize information from numerous sources
- Integrate new information with pre-existing knowledge
- Communicate knowledge effectively to various audiences

The assignments will also develop the skills and knowledge associated with global competency. These accomplishments include:

- An understanding of cultural differences
- Sensitivity to other cultures
- The ability to think critically about global issues
- Knowledge of world events and the ability to view them from an interdisciplinary perspective
- Mastery of communication technologies for collaboration
- The ability to collaborate with diverse others to manage knowledge and create shared understandings
- An understanding of how to take action locally to address a global issue
- A framework for global civic engagement

The keynote speakers will share their experience using these assignments and will also offer suggestions for how the assignments can be used in other disciplines.

Short Bios

Dr. Houman Sadri is an Associate Professor in the Department of Political Science at the University of Central Florida. His research interests include Middle East Politics, Terrorism, Globalization, American Foreign Policy, and International Relations & Organizations. Dr. Sadri is the Founder and Faculty Advisor of the UCF Model United Nations Program since 1995, and his students have won many awards in regional and national Model U.N. competition throughout the USA. He is the co-author of *Intercultural Communication: A New Approach to International Relations and Global Challenges*.

Dr. Madelyn Flammia is an Associate Professor in the Department of English at the University of Central Florida in Orlando, Florida. She teaches both graduate and undergraduate courses in Technical Communication. Her research interests include international technical communication, visual communication, and global virtual teams. Dr. Flammia has given presentations on intercultural communication at professional conferences and for corporate audiences. She is the co-author of *Intercultural Communication: A New Approach to International Relations and Global Challenges* and the editor of the Society for Technical Communication anthology, *Perspectives on the Profession of Technical Communication*.

CISCI/SIECI 2015 Plenary Session (In Spanish)

The 14th Ibero-American Conference on Systems, Cybernetics and Informatics: CISCI 2015
Décima Cuarta Conferencia Iberoamericana en Sistemas, Cibernética e Informática: CISCI 2015

Sesión Plenaria – Martes 14 de Julio, 2015, 10:00 AM - 12:20 PM



Profesora Gabriela Vilanova

**Universidad Nacional de la Patagonia
Austral, Argentina
Directora de Proyectos en Ingeniería
de Software**



Profesor Jorge Varas

**Universidad Nacional de la Patagonia
Austral, Argentina
Co-Director de Proyectos en Ergonomía
Organizacional**

Ponencia Plenaria

“Diseño de acciones formativas en Ambientes Virtuales de Aprendizaje”

Breve Resumen

Los procesos educativos se han modificado para adaptarse a las condiciones sociales actuales. A su vez, la introducción de la tecnología en el campo educativo ha dado lugar a nuevos escenarios basados en el uso de las TICs (Tecnologías de la Información y la Comunicación), que configuran diferentes itinerarios de aprendizaje para cada individuo. Es fundamental el rol de la universidad, convirtiéndose en la institución de la sociedad en red. En este sentido, las instituciones de educación superior deben responder a las demandas actuales de la sociedad y asegurar que los estudiantes adquieran las habilidades necesarias en el espacio de formación, y en los entornos de trabajo actuales y futuros.

La aplicación de las TIC a acciones de formación en Ambientes Virtuales de Aprendizaje posibilita diversos frentes de cambios a considerar, cambios en las concepciones de los procesos dinámicos, identidad del docente, cambios en las prácticas de profesores y de los alumnos, y de los recursos.

Diseñar acciones de formación supone participar de un conjunto de decisiones en forma de juego de equilibrio entre el modelo pedagógico, los usuarios, según el rol de profesores y alumnos, y las posibilidades de la tecnología.

Breve CV de la Profesora Gabriela Vilanova

Profesora Adjunta Área Sistemas, Ingeniería de Software. (Antigüedad en docencia universitaria, 24 años).

Directora de Proyectos de investigación en el área Ingeniería de Software. Modelado y diseño de software, enfoque arquitectural, en el ITA (Instituto de Tecnología Aplicada) y en el área Educación e innovación en práctica docente en el IEC (Instituto de Educación y ciudadanía) de la Universidad Nacional de la Patagonia Austral - Unidad Académica Caleta Olivia. Patagonia Argentina.

Áreas de interés: Sistemas de información, metodologías de desarrollo de software ágiles y arquitecturales. TICs aplicadas a la educación. Modelos de enseñanza en Entornos virtuales.

Tesista de Maestría en Educación en Entornos Virtuales /UNPA- Universidad de Islas Baleares
Doctoranda del posgrado en Matemática aplicada computacional e industrial (Universidad Nacional del Centro de la Provincia de Buenos Aires)

Participante como organizadora y expositora en eventos nacionales e internacionales, cuenta con publicaciones en eventos nacionales e internacionales.

Breve CV del Profesor Jorge Varas

Profesor Adjunto Área Ergonomía y Psicología del Trabajo (Antigüedad en docencia universitaria, 16 años).

Co-Director de Proyectos de investigación en el área Ergonomía Organizacional aplicada a las Pymes regionales, en el ITA (Instituto de Tecnología Aplicada) y participante como integrante en el área Educación e innovación en práctica docente en el IEC (Instituto de Educación y Ciudadanía) de la Universidad Nacional de la Patagonia Austral - Unidad Académica Caleta Olivia. Patagonia Argentina.

Áreas de interés: Ergonomía y Diseño de puestos de trabajo, Diseño de Ambientes virtuales de Aprendizaje en Organizaciones Laborales, TICs aplicadas a la educación, Modelos de enseñanza en Entornos virtuales de Aprendizaje.

Tesista de Maestría en Educación en Entornos Virtuales /UNPA- Universidad de Islas Baleares

Cuenta con publicaciones en eventos nacionales e internacionales.

CISCI/SIECI 2015 Plenary Session (In Spanish)

The 14th Ibero-American Conference on Systems, Cybernetics and Informatics: CISCI 2015
Décima Cuarta Conferencia Iberoamericana en Sistemas, Cibernética e Informática: CISCI 2015

Sesión Plenaria – Martes 14 de Julio, 2015, 10:00 AM – 12:20 PM



Profesor José I. Peláez

Universidad de Málaga, España
Director de la Cátedra de Métricas y Gestión de Intangibles
Premio Spinoff en Creación de Empresas de base tecnológica,
en el campo del marketing digital.

Ponencia Plenaria

“Desde los Datos hasta el Valor: Procesos de Agregación de Información basados en el Concepto de Mayoría”

Breve Resumen

Cada día en el mundo se generan exabytes de datos, una generación que no para de crecer cada día desde múltiples fuentes, videos, imágenes, redes sociales, comercio electrónico, dando lugar al denominado Big Data, un conjunto de datos con unas características de gran volumen y complejidad. Son estas características las que dificultan el proceso de manejar, almacenar y extraer información de valor a partir de ellos, y plantean a la comunidad científica diferentes desafíos que tienen que ser resueltos para poder avanzar: problemas de captura, transformación, almacenamiento, búsqueda, visualización y análisis de estos datos. Es en este último punto donde los procesos de agregación de información son de gran importancia, ya que son los encargados de obtener un resumen de los datos existentes para ser utilizados en los procesos de toma de decisión. Los procesos de agregación de información basados en el concepto de mayoría, tratan de obtener un valor que represente a la mayoría de los datos, teniendo en cuenta también aquellos datos que representan un minoría en el conjunto total. En esta conferencia, el objetivo es mostrar este tipo de procesos y su utilidad en diferentes campos de la investigación.

Breve CV

El Dr. José Ignacio Peláez Sánchez ha sido profesor en la Universidad de Jaén y actualmente es profesor titular en la Universidad de Málaga, España.

Ha realizado su investigación en dos áreas principalmente: Sistemas Inteligentes de Ayuda a la Decisión, y en el campo de la inteligencia Computacional. Estas líneas de investigación han permitido obtener más de 100 publicaciones indexadas en revistas y conferencias con índices de impacto de calidad JCR, Computer Sciences Conference Ranking y el Computing Research and

Education. Así mismo ha dirigido más de 20 proyectos de investigación competitivos y universidad-empresa, donde ha obtenido un total de 3 patentes.

En la campo de la docencia e investigación, tiene una experiencia de 20 años durante los cuales ha realizado actividades en las Universidades de Granada, Jaén, Cádiz, Oberta de Cataluña, Nordeste Argentino, Noroeste de Paraguay, Guayaquil de Ecuador, Joseph M. Katz Graduate School of Business (University of Pittsburgh) y por supuesto en la Universidad de Málaga. En total más de 100 tesis de grado, 20 de master, 7 de doctorales y 5 libros de docencia, además de diferentes proyectos de innovación educativa. Así mismo es revisor de prestigiosas revistas de investigación.

En actividades relacionadas con la innovación, ha sido responsable de la creación y puesta en funcionamiento del Área de Nuevas Tecnologías del Ayuntamiento de Málaga, donde ocupó el cargo de director técnico de la misma. Posteriormente ocupó el puesto de asesor de Innovación en el gabinete de presidencia del citado organismo.

Así mismo ha organizado y coordinado eventos de diferente índole, desde estrictamente de investigación organizando sesiones de trabajo en congresos; de carácter internacional y de innovación con la organización de la Primera Cumbre de Ciudades y Gobiernos Locales del Mediterraneo.” Una Financiación Innovadora para el Espacio Digital Mediterraneo”; de carácter empresarial como el “10º Congreso Brightpoint de las Telecomunicaciones”; la primera Exposición Tecnomobile organizada en España y el primer AVE de las telecomunicaciones.

En la actualidad trabaja en el campo del marketing digital, donde ha conseguido recientemente el premio spinoff de la Universidad de Málaga para la creación de empresas de base tecnológica, en el campo del marketing digital.

Así mismo, es director de la Cátedra de Métricas y Gestión de Intangibles de la Universidad de Málaga, la cual está patrocinada por la Fundación Corporate Excellence, Centre for Reputation Leadership.

CISCI/SIECI 2015 Plenary Session (In Spanish)

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Sesión Plenaria – Martes 14 de Julio, 2015, 10:00 AM – 12:20 PM



Dr. Alvaro Turriago Hoyos

Universidad de la Sabana, Colombia

Ponencia Plenaria

“Fuentes Internas y Externas de la Innovación –de producto, procesos, mercado y organizacional – en el sector de Servicios y en el sector Industrial en Colombia”

Breve Resumen

Hoy en día es ampliamente aceptada la función que cumple la innovación como variable que promueve tanto la productividad como la competitividad de las organizaciones. Es necesario por ende gestionar y administrar la innovación dados sus importantes alcances. Una forma sistemática y organizada de conquistar su gestión es identificar sus fuentes para estructurar estrategias de gerencia que además de impulsar estas fuentes perfilen también sus impactos en las organizaciones.

Esta exposición analiza las relaciones entre las fuentes internas —fundamentalmente la I&D— y las externas —adquisición de tecnología— que son insumos esenciales en la generación de conocimiento operativo manifestado a través de innovaciones.

La metodología seguida estructura ecuaciones representativas de Funciones de Producción de Conocimiento, que partiendo de una aproximación insumo-producto, permiten identificar los determinantes más relevantes de la innovación. Los insumos son las actividades de I&D y la Transferencia de Tecnología. Estas ecuaciones consideran además como variables de control los componentes de las cadenas de valor de las organizaciones, clientes, proveedores, competidores y también por instituciones de investigación —ordinariamente universidades—, dada la complejidad tecnológica que requiere la consolidación de las innovaciones. De igual forma se incluyen otras variables de control como tamaño, pertenencia a un sector de alta o baja tecnología y la pertenencia de la organización analizada a un grupo económico del exterior de las organizaciones consideradas.

Se trabaja con evidencia empírica en organizaciones del sector de Servicios y del sector Industrial colombiano, recogida en las II y III Encuestas de Innovación para el sector Servicios y la V y VI Encuestas de Innovación para la Industria en Colombia, en el período comprendido entre 2008 y 2012.

Breve CV

Álvaro Turriago Hoyos, economista de la Universidad del Rosario en Bogotá, cursó una Maestría en Educación en la Universidad de la Sabana y tiene un título de Doctor en Ciencias Económicas y Empresariales otorgado por la Universidad de Navarra.

En la actualidad es Profesor Titular en la Universidad de La Sabana donde enseña Teoría Macroeconómica, Gerencia de la Innovación y Ética Empresarial. También fue Profesor Interino de Política Económica en la Facultad de Derecho de la Universidad de Navarra.

Su especialidad en investigación son los temas de gerencia y estrategias de innovación. Ha escrito tres libros, así como varios artículos en revistas científicas indexadas sobre la temática de la Innovación.

Trabajó en el sector financiero en Colombia siendo Tesorero de Corfinsura, hoy absorbida por Bancolombia. También se desempeñó como Analista Financiero en Crédit Suisse Zúrich. Ha trabajado en el sector Público como Subdirector de Colciencias y también como Secretario de Ciencia y Tecnología de la Gobernación de Cundinamarca.

CISCI/SIECI 2015 Plenary Session (In Spanish)

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Sesión Plenaria – Martes 14 de Julio, 2015, 10:00 AM - 12:20 PM



Professor Nagib Callaos

**President del IIS, USA
Ex-Decano de investigación y Desarrollo de la
Universidad Simón Bolívar, Venezuela
Presidente Fundador de la Fundación de
Investigación y Desarrollo de la
Universidad Simón Bolívar**



Profesor Andrés Tremante

**Florida International University, USA
The *Mechanical & Materials Engineering*
(MME) Department
Ex-Presidente de la Fundación de
Investigación y Desarrollo de la
Universidad Simón Bolívar**

Ponencia Plenaria

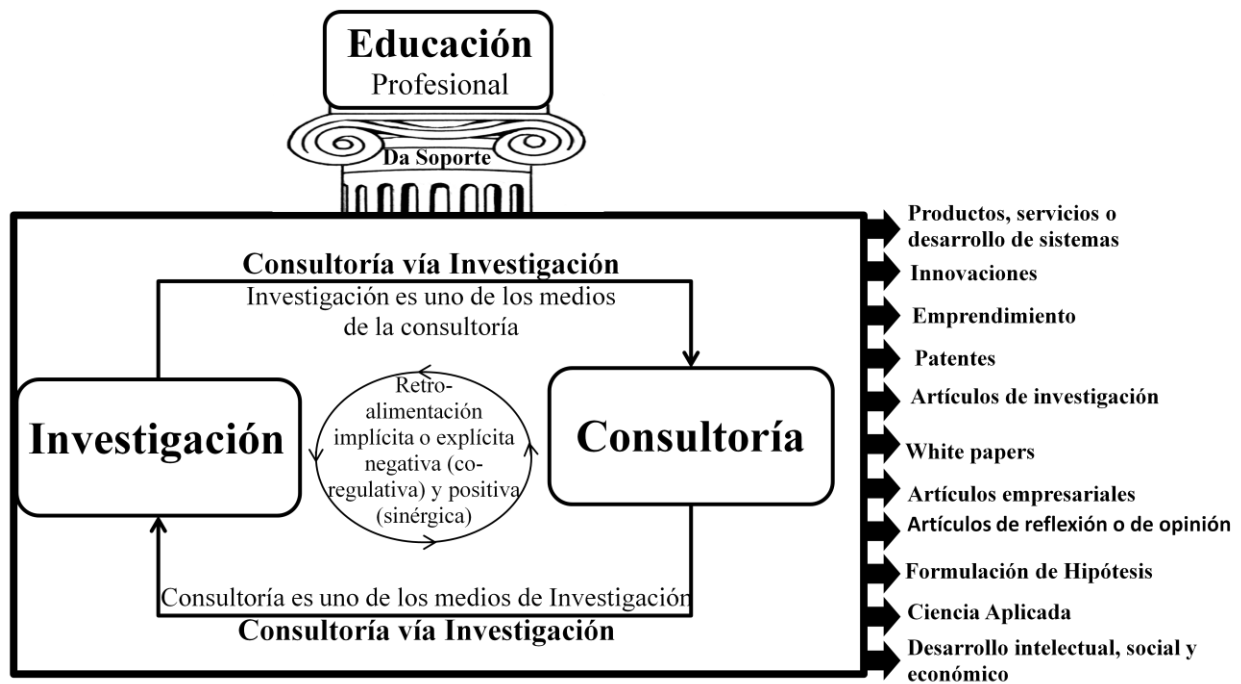
***“Investigación y Consultoría:
Investigación a través de la consultoría y consultoría a través de la Investigación”***

Resumen

Algunas áreas académicas requieren necesariamente de las actividades de consultoría o de otras actividades relacionadas con la práctica, especialmente si se busca que la investigación desemboque en desarrollo o en la solución de problemas de la vida real. Por ejemplo, ¿cuál sería el “laboratorio” (como medio de desarrollo) de un profesor de metodologías de desarrollo de sistemas de información si no es el desarrollo de sistemas de información de la vida real? En algunas disciplinas académicas, las actividades de consultoría enriquecen, dan soporte y mejoran la investigación, como sería el caso de algunas disciplinas de ingeniería, derecho, medicina, ciencias gerenciales, investigación de operaciones, etc. Pero, en otras disciplinas académicas la consultoría es percibida como una actividad que pudiera considerarse como una actividad que distrae de la investigación académica de rigor. Esto podría ser cierto en algunas disciplinas, pero, aún en esos casos, la investigación académica de rigor que se realiza terminaría eventualmente generando, a través de otros investigadores o académicos, investigación aplicada que termina dando soporte a soluciones de problemas en la vida real o a desarrollos de productos o servicios de utilidad a la sociedad. En consecuencia, aún en los casos de disciplinas en las que se estima que la consultoría podría distraer la investigación de rigor, las actividades de consultoría son necesarias para los efectos de la respectiva toma de decisiones y de establecimiento de políticas nacionales o empresariales,

para transformar el producto de la investigación en productos o servicios útiles a la sociedad, o para resolver problemas de la vida real. Es bien conocido que la investigación en muchos departamentos académicos es posibilitada gracias a los aportes financieros de entes públicos o privados orientados al desarrollo o a la solución de problemas de la vida real. En consecuencia, en tales casos, relacionar cibernéticamente la investigación y desarrollo (al menos a nivel organizacional) podría producir el desarrollo, el resultado requerido, o la solución del problema en cuestión (ver la figura abajo)

Investigación*, Desarrollo y Consultoría** están relacionados, directa o indirectamente, inmediata o mediatamente, a través de lazos cibernéticos co-regulativos (retroalimentación negativa o de pro-alimentación), y co-amplificativos (retroalimentación positiva). Lo cual pudiera producir efectos sinérgicos que a) aumentarían la efectividad (y quizás la eficiencia) de ambas actividades y/o b) generar sistemas/productos/desarrollos. Innovaciones, emprendedurías (entrepreneurships), patentes, artículos de investigación, etc. Por el otro lado, este tipo de relaciones sistémico-cibernéticas entre investigación y consultoría proveen del tipo de *experiencia* requerida para ser combinada con la transmisión de *conocimiento* para los efectos de una *educación* real, la cual no debe ser reducida a mera *instrucción*. En el contexto de carreras profesionales es donde este tipo de experiencia más se necesita para una auténtica y efectiva educación. Esa es la razón por la que es necesario hacer explícito que una adecuada relación entre investigación y consultoría provee un soporte fundamental a la Educación superior, especialmente (pero no únicamente) en las disciplinas profesionales. La educación, en cuanto episteme, es condición necesaria para la investigación (producción de nuevo conocimiento) lo cual a través de la consultoría genera la techne (desarrollo de productos, servicios, etc.) necesaria para la producción de innovaciones, patentes, y lo demás requerido para el desarrollo de las sociedades y el mejoramiento de las condiciones de vida (*Estamos refiriéndonos tanto a las investigaciones con apoyo financieros (salarios, concesiones, contratos, apoyos a la investigación, etc.) como a las investigaciones sin soporte financiero. ** Nos estamos refiriendo tanto a consultorías con fin de lucro, como las sin fin de lucro, y las hechas ad-honorem)



Breve CV de Nagib Callaos

El professor Nagib Callaos obtuvo los títulos de Ingeniero Electricista (Universidad Central de Venezuela-1968), Master of Science in Electrical Engineering (University of Texas at Austin, Texas, USA-1970), Philosophical Doctor (Ph.D.) en Sistemas de Información Socio-Política (University of Texas at Austin, Texas, USA - 1976). En su Tesis Doctoral resolvió matemáticamente el *Problema de la Paradoja Electoral o de Condorcet*, que tenía más de 200 años sin solución y en contraposición al Premio Nobel, Kenneth Arrow, quien había presentado una demostración matemática de que dicha paradoja no tenía solución.

El Dr. Callaos tuvo tres años de estudios post-doctorales (a tiempo completo) en Filosofía. Fué Decano de Investigación y Desarrollo de la Universidad Simón Bolívar: USB (Venezuela), presidente fundador de la Fundación de Investigación y Desarrollo de la USB (FUNINDES), Presidente Fundador del Fondo de Fomento de la Innovación Tecnológica (FINTEC) creado por decreto presidencial, Presidente fundador de FUNSASISTEMAS, y presidente fundador de la Asociación Venezolana de Ejecutivos en Transferencia Tecnológica. El Dr. Callaos es actualmente presidente fundador (desde 1989) de la empresa Callaos y Asociados, Ingenieros Consultores, Presidente fundador (desde 1995) del International Institute of Informatics and Systemics (IIS), editor en jefe fundador (desde 2003) del Journal of Systemics, Cybernetics, and Informatics: JSCI y de la Revista Iberoamericana de Sistemas, Cibernética e Informática: RISCI.

El Dr. Callaos tiene más de 120 trabajos publicados y es editor o co-editor de más de 70 libros, la mayoría de los cuales relativos a memorias de las conferencias que ha organizado. Le fueron otorgados diversos premios nacionales e internacionales (Alemania, República Checa, Polonia, Tailandia, etc.) Ha sido Director/Gerente de más de 100 proyectos (aproximadamente 30 de investigación en sistemas-computación, 70 en Análisis y Síntesis de Sistemas), la mayoría de los cuales sirvieron para probar y mejorar una metodología de análisis y síntesis de sistemas, desarrollada a lo largo de 14 años mediante el método de investigación-acción.

El Dr. Callaos ha sido consultor en muchas empresas entre las cuales se encuentran las siguientes 1) La ONU para el Sistema de Jerarquización y Selección de Proyectos del Banco Nacional de Proyectos de CORDIPLAN; 2) El Banco Central De Venezuela en metodología de desarrollo de Venezuela, 3) PDVSA en el área de Sistemas Estratégicos de Información; 4) CVG-EDELCA en el área de Desarrollo de Sistemas: específicamente en Análisis y Diseño Estructurado de Sistemas de Información; 5) Seguros La Seguridad, en las áreas de Planificación Estratégica de Datos, Creación de Centros de Información y Desarrollo de Sistemas de Información; 6) Ferrominera Orinoco, C.A., en el diagnóstico del sistema relativo al modelo de planificación, etc.

Breve CV de Andrés Tremante

El Dr. Tremante es profesor titular jubilado de la Universidad Simón Bolívar. Fue Presidente de la Fundación de Investigación y Desarrollo de la misma universidad, jefe del laboratorio de Conversión de Energía Mecánica. Los cursos que dio en la Universidad Simón Bolívar fueron en las áreas de Termodinámica, Mecánica de Fluidos y Transferencia de calor, Sistemas

energéticos, Generación de Energía Hidráulica y Térmica, Energía renovable y fósil, Producción Petrolera y Flujo Multifase.

Actualmente da clases y hace Investigación y Desarrollo en la International Florida University. Recibió el título de Ingeniero mecánico, y de maestría en la Universidad Simón Bolívar. Así mismo obtuvo su doctorado en ENSAM en Paris, Francia, donde permaneció para estudios post-doctorales. Actualmente enseña cursos de mecánica de fluidos en el programa BSME (Bachelor of Science in Mechanical Engineering).

En el pasado reciente ha sido miembro editorial de 23 revistas y ha publicado más de 125 artículos en sus áreas de experiencia. Es co-autor del libro “¿Norte o Sur?: Una historia de ficción basada en hechos reales.” Y co-editor, desde el año 2000, de memorias de conferencias organizadas por el International Institute of Informatics and Systemics (IIS), de las cuales ha sido co-presidente de sus respectivos Comité de Organización.

Joint Event of the Collocated Conferences

The 19th World Multi-Conference on Systemics, Cybernetics and Informatics: WMSCI 2015
The 9th International Multi-Conference on Society, Cybernetics and Informatics: IMSCI 2015
The 14th Ibero-American Conference on Systems, Cybernetics and Informatics: CИСCI 2015
Décima Cuarta Conferencia Iberoamericana en Sistemas, Cibernética e Informática: CИСCI 2015

Plenary Session – Tuesday, July 14th, 2015, 1:30 PM – 3:30 PM



Dr. Russell Jay Hendel

Towson University, USA
Dept of Mathematics

Keynote Address

“Towards a New Cybernetic Interdisciplinary Approach to Pedagogic Challenge”

Abstract

Since the mid nineteenth century, numerous researchers have attempted to formulate pedagogic challenge by the construction of hierarchies. Bloom, Anderson, Marzano, Van Hiele, Gagne, and Webb have independently formulated taxonomies; these taxonomies correlate well with each other indicating an intrinsic deeper structure. The goal of this presentation is explore a new approach to pedagogic challenge. This new approach has four distinct advantages over the current hierarchy approach: i) Cybernetic: It is exclusively based on internal information flow within a system and independent of subject matter content; ii) Operationally defined: The approach is based on objectively measurable activities such as counting and does not require a feel for concepts like creativity or analysis; iii) Interdisciplinary: We cite examples of our approach in diverse disciplines including mathematics, literary analysis, law, music, and games like chess; iv) Multi-disciplinary based: The approach bases itself on psychological, anatomical, logical and computer based correlating concepts. The essence of the approach is to assess pedagogic challenge by the degree of executive function required for learning; the degree of executive function in turn is based on a) the number of psychological modalities (visual, formal, analytical, and verbal) used in instruction and b) the number of Boolean parameters (the "Boolean function") by which the rules of the discipline are developed. We show this approach consistent with modern attempts at improving education such as the core standards.

Short Bio

Russell Jay Hendel holds a doctorate in theoretical mathematics from M.I.T., an associateship from the Society of Actuaries, and is in a doctoral program at the Spertus Institute for a degree in Jewish studies. He is currently an Adjunct II faculty member at Towson University which has recently become a Center of Actuarial Excellence. His research and publication interests include discrete number theory, actuarial science, biblical exegesis, the theory of pedagogy, applications of technology to pedagogy, and the interaction of mathematics and the arts. He regularly reviews books for the Mathematical Association of America.

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Plenary Session – Tuesday, July 14th, 2015, 1:30 PM – 3:30 PM



Professor Wolfgang G. Stock

University of Düsseldorf, Germany
Chair - Head of the Information Science Department

Keynote Address

***Informational Urbanism:
An Interdisciplinary View on ICT-driven ‘Smart’ City
Development***

Abstract

Contemporary and future cities are often labeled as “smart cities,” “ubiquitous cities,” “knowledge cities” and “creative cities.” Informational urbanism includes all aspects of information and knowledge with regard to urban regions. “Informational city” is an umbrella term uniting the divergent trends of information-related city research. Informational urbanism is an interdisciplinary endeavor incorporating on the one side computer science and information science and on the other side urbanism, architecture, (city) economics, and (city) sociology. In our research project on informational cities, we visited more than 40 metropolises and smaller towns all over the world. In this talk, we sketch the theoretical background on a journey from Max Weber to the Internet of Things, introduce our research methods, and describe main results on characteristics of informational cities as prototypical cities of the emerging knowledge society.

Short Bio

Wolfgang G. Stock is professor for information science and head of the Information Science Department of the Heinrich Heine University Düsseldorf, Germany. His research activities and lectures comprise information retrieval, knowledge representation, informetrics, informational cities, social media and the markets of digital information. He is author of about 275 articles and of some basic text books in information science. Recently, he published (in cooperation with Mechtild Stock) the “Handbook of Information Science” (De Gruyter Saur, Paperback Ed. 2015). Additionally he is editor of the book series “Knowledge & Information. Studies in Information Science” (De Gruyter Saur).

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Plenary Session – Tuesday, July 14th, 2015, 1:30 PM – 3:30 PM



Professor Osmo Kivinen

**University of Turku, Finland
Director of the Research Unit for the
Sociology of Education (RUSE)**



Lecturer Juha Hedma

**University of Turku, Finland
For 20 years, researcher at the Research
Unit for the Sociology of Education (RUSE)**

Keynote Address

***“Productivity of University Research in Six Main Fields in
Selected US States and EU Countries”***

Abstract

All around the world high expectations are laid on the capability of university research to contribute to the development of knowledge-based society and economic growth. The comparative analysis focuses on four US states (Massachusetts, Minnesota, Connecticut, New Jersey) and four EU countries (Finland, the Netherlands, Germany, Belgium), all qualifying as rich in terms of knowledge capital and economic prospects. Productivity of top university research in six main fields (agriculture, natural sciences, technology, clinical medicine, life sciences and social sciences) is examined based on data from Web of Science, NSF (National Science Foundation), NCES (National Center for Educational Statistics), EUMIDA (European University Data Collection) and NTU-ranking (National Taiwan University ranking).

Short bios

Professor Osmo Kivinen, researcher Juha Hedman and Dr Päivi Kaipainen are from the Research Unit for the Sociology of Education (RUSE), University of Turku, Finland. They have published

about the topic of the keynote address for instance in *Scientometrics* 2013 “Productivity analysis of research in Natural Sciences, Technology and Clinical Medicine: an input–output model applied in comparison of Top 300 ranked universities of 4 North European and 4 East Asian countries” and in *Scientometrics* 2008 “World-wide University Rankings — A Scandinavian approach”.

They also have had presentations earlier in IIS conference 2011 “From rankings to ratings: An input-output analysis of productivity of research and teaching by disciplines” and “From global performance rankings towards national productivity ratings: Productivity of scientific action in technology and management/social sciences”

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Décima Cuarta Conferencia Iberoamericana en Sistemas, Cibernética e Informática: CISCИ 2015

Plenary Session – Wednesday, July 15th, 2015, 7:45 AM – 10:00 AM



Professor Ronald A. Styron, Jr.

**University of South Alabama, USA
Director of the
Quality Enhancement Plan
Professor of Educational Leadership**



Dr. Jennifer Styron

**University of South Alabama. USA
College of Nursing
Former Research Specialist and
Distance Education Coordinator at The
University of Southern Mississippi, USA**

Keynote Address

“Fostering Innovation in Higher Education through Entrepreneurial Leadership”

Abstract

This paper includes a description of the unique set of attributes associated with entrepreneurial leaders including their ability to embrace change, take risks, and identify opportunities for personal and professional growth. The importance of organizational creativity and innovation, and strategies for leaders to develop those qualities in members of their organization is also discussed. Furthermore, model entrepreneurial programs based on 1) the advancement of student innovation and entrepreneurialism, 2) faculty innovation and entrepreneurialism through financial incentives, sabbaticals, and recognition, 3) university-industry collaboration, 4) strong linkages between regional and local economic development efforts, and 5) the creation of university and industry consortiums are provided as exemplars. The conclusion section contains recommendations for university leaders pertaining to personalized leadership approaches attained by blending various leadership styles with democratic practices constructed around the tenets of entrepreneurial leadership.

Short Bios

Dr. Ronald A. Styron, Jr. is currently the Quality Enhancement Plan Director and Professor of Leadership and Teacher Education at the University of South Alabama. He has received numerous awards including Principal of the Year, Louisiana PTA Educator of Distinction and several outstanding conference research paper awards. He has received over \$3 million in grant awards and has a proven record of publications with 35 refereed articles, a book chapter, and a series of administrator-training manuals. He has also conducted over 90 professional research presentations and 50 speaking engagements.

Dr. Jennifer Styron is an assistant professor at the University of South Alabama, USA, College of Nursing and a Former Research Specialist and Distance Education Coordinator at The University of Southern Mississippi, USA. She has been teaching especially in courses of “Advanced Nursing Research”

She is affiliated to:

American Medical Informatics Association (AMIA)
Association for Educational Communications and Technology
Healthcare Information and Management Systems Society (HIMSS)
International Institute of Informatics and Systemics (IIS)
Mid-South Educational Research Association
Society of International Chinese in Educational Technology
Team-Based Learning Collaborative
Transcultural Nursing Society

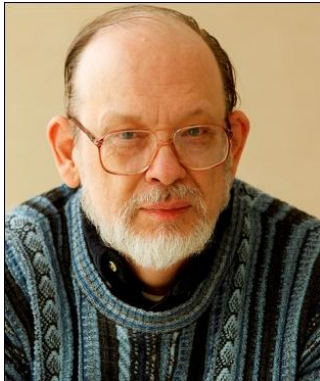
Her Research and Areas of Interests are the following

Nursing Education
Instructional Technology and Design
Electronic Health Record Adoption and Use
Team-Based Learning
Cyberbullying
Interprofessional Education

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Plenary Session – Wednesday, July 15th, 2015, 7:45 AM – 10:00 AM



Professor Thomas Marlowe

Seton Hall University, USA
Department of Mathematics and Computer Science
Program Advisor for Computer Science
Dr. in Computer Science and Dr. in Mathematics

Keynote Address

*“Man is the Measure of All Things:
Metrics: The Good, the Bad and the Ugly”*

Abstract

Who needs metrics? Where do they come from, anyway? How can we make sense or progress without them? Is a bad metric better than no metric? Are metrics the source of their own failure? How can we avoid misapplying metrics? What is a zombie metric?

We present an overview with examples of uses, abuses, pitfalls and misunderstandings in the definition and application of metrics, and argue for a better understanding of and a more careful approach to metrics.

Short Bio

Professor Thomas J. Marlowe is Program Advisor for Computer Science, has been a member of the Department of Mathematics and Computer Science at Seton Hall University for over 30 years, and has taught a wide variety of courses in both disciplines. Professor Marlowe enjoys working with students and with professional colleagues-- almost all his research is collaborative. His professional interests include in mathematics, abstract algebra and discrete mathematics; in computer science, programming languages, real-time systems, and software engineering, and in information science, collaboration and knowledge management. The connection between graphs and algebraic structures is a recurrent theme.

Professor Marlowe has Ph.D. in Computer Science, from Rutgers, The State University, and a Ph.D. in Mathematics from Rutgers, The State University. Professor Marlowe has many

Publications and Academic Distinctions. He has over 70 publications in refereed conferences and journals in mathematics, computer science and information science. Some of the more recent and more significant include:

- T.J. Marlowe, N. Jastroch, V. Kirova, M. Mohtashami, "A Classification of Collaborative Knowledge," Special Session on Collaborative Knowledge Management, Workshop on Knowledge Generation, Communication and Management (KGCM 2010), to appear, June 2010.
- T. J. Marlowe, V. Kirova, "High-level Component Interfaces for Collaborative Development: A Proposal", *Journal of Systemics, Cybernetics, and Informatics*, 7 (6), pages 1-6, 2009.
- Rountev, S. Kagan, T. J. Marlowe, "Interprocedural Dataflow Analysis in the Presence of Large Libraries", *Proceedings of CC 2006*, 216, *Lecture Notes in Computer Science* 3923, 2006.
- S. P. Masticola, T. J. Marlowe, B. G. Ryder, "Multisource Data Flow Problems", *ACM Transactions on Programming Languages and Systems*, 17 (5), 777 -803, September 1995.
- D. Stoyenko, T. J. Marlowe, "Polynomial-Time Program Transformations and Schedulability Analysis of Parallel Real-time Programs with Restricted Resource Contention", *Journal of Real-Time Systems*, 4 (4), 1992.
- T. J. Marlowe, B. G. Ryder, "Properties of data flow frameworks: A unified model", *Acta Informatica*, 28 (2), 121 -164, 1991.

Professor Marlowe is member of more than 10 Ph. D. thesis and 5 M.S. thesis committees, member of more than 20 conference program committees, and reviewer for numerous conferences, journals, and grants. He is the founder of an ongoing professional conference, and co-founder of a new workshop on collaboration.

Joint Event of the Collocated Conferences

The 19th World Multi-Conference on Systemics, Cybernetics and Informatics: WMSCI 2015
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Décima Cuarta Conferencia Iberoamericana en Sistemas, Cibernética e Informática: CISCИ 2015

Plenary Session – Wednesday, July 15th, 2015, 7:45 AM – 10:00 AM



Dr. Karl H. Müller

**Director of The Steinbeis Transfer Center
New Cybernetics, Vienna, Austria
Professor at the University of Ljubljana, Slovenia**

Keynote Address

***“Second-Order Science and New Cybernetics:
A Revolution in Scientific Structures”***

Abstract

Under the heading of “Second-order Science and New Cybernetics” a book will be published which presents a new architecture for the science system and offers new roles and functions for cybernetics which differ wildly from old cybernetics as it was developed between the 1940s and the 1960s or even from second-order cybernetics as propagated by Heinz von Foerster, Ranulph Glanville, Gordon Pask, Louis H. Kauffman, Klaus Krippendorff, Bernard Scott, Stuart A. Umpleby and many others since the late 1960s and 1970s. The lecture will be divided into three main parts.

- The first part lays out the new environments of second-order science and new cybernetics and emphasizes the new configuration of first-order science as we know it and the two new levels of zero-order science with its concentration of research infrastructures and second-order science which operates on the building blocks like models, theories, test results, theoretical concepts or functions from first-order science.
- The second part focuses on significant major contemporary inversions within the science system which, in combination, constitute a new Copernican revolution. It will be shown that this new Copernican revolution can be characterized as a complexity and as a reflexivity revolution of the overall science system.

- Finally, second-order science and new cybernetics can be institutionalized as research programs and as curricula in a variety of ways and the lecture will offer several examples for new research and teaching programs in this field.

Literature:

- Riegler, A., Müller, K.H. (2014)(eds.), Special Issue of *Constructivist Foundations* on 'Second-Order Science'. No. 1, Vol. 10
- Müller, K.H., Riegler, A. (2014b), "Second-Order Science: A Vast and Largely Unexplored Science Frontier", in: *Constructivist Foundations*, vol. 10, no. 1, 7 – 15

Short Bio

Karl H. Müller (1953) was head of the Departments of Political Science and Sociology at the Institute for Advanced Studies (IHS) in Vienna (1997 – 2001) of the Wiener Institute for Social Science Documentation and Methodology (WISDOM), Austria's centre for research infrastructures in the social sciences and of the Heinz von Foerster Society (2000 – 2015). Currently he is Director of the Steinbeis Transfer Centre New Cybernetics and senior researcher at the Faculty of Social Sciences of the University of Ljubljana.

His main research interests range from problems of complex modeling and from the potential of complex data visualization in the social sciences to the frontiers of second order cybernetics, of radical constructivism and of contemporary RISC-societies.

His recent publications reflect these various interests, namely, (with Lučka Kajfež-Bogataj, Ivan Svetlik, Niko Toš (eds.)), *Modern RISC-Societies: Towards a New Paradigm of Societal Evolution* (Wien:edition echoraum, 2010), *The New Science of Cybernetics. Towards the Evolution of Living Research Designs. Vol. II. Theory* (Wien:edition echoraum, 2011), *The New Science of Cybernetics. The Evolution of Living Research Designs, vol. III: Research and Design Rules* (Wien:edition echoraum, 2012), (together with Niko Toš). *Towards a New Kind of Social Science. Social Research in the Context of Science II and RISC-Societies* (Wien:edition echoraum, 2012), *New Cybernetics. The Structure of a Scientific Revolution* (Wien:edition echoraum, 2015, to be published); (with Brina Malnar), *Surveys and Self-Reflexivity. A Second-Order Study of the European Social Survey (ESS)* (Wien:edition echoraum, 2015, to be published)

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Plenary Session – Wednesday, July 15th, 2015, 1:30 PM – 3:30 PM



Professor Ya-Huei Wang

Chung Shan Medical University, Taiwan
Research interest: adaptive learning, interdisciplinary cooperative learning, complementary learning, etc.

Keynote Address

“The Use of Narrative Medicine Literature for Interdisciplinary Communication through the Internet Learning System”

Abstract.

An increasing reliance on nonhuman technologies leads to an impersonal and calculating medical care system, letting medical care professionals and specialists not care much about patients' human experiences and hence leading to a decline in the quality of medical care. Patients lose personal contact with their doctors and other medical care professionals. Failing to understand patients' perspectives would lead to communication problems among physicians, medical care professionals, patients, and patients' families. However, the communication problems may be bridged by narrative medicine literature study. In the study, narrative medicine literature and interdisciplinary cooperative learning through the internet learning system were promoted to foresee a more humanizing medical care.

Short bio

Ya-Huei Wang is a Professor at Chung-Shan Medical University. She got her Ph.D. in education from National Changhwa University of Education, Taiwan. She has published more than 40 research papers in BJET, Higher Education, ESWA, and other journals. Her current research interests include adaptive learning, interdisciplinary cooperative learning, complementary learning, etc. She teaches at the Department of Applied Foreign Languages, Chung Shan Medical University and the Department of Medical Education, Chung Shan Medical University Hospital

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Plenary Session – Wednesday, July 15th, 2015, 1:30 PM – 3:30 PM



Dr. Marta Szabo White

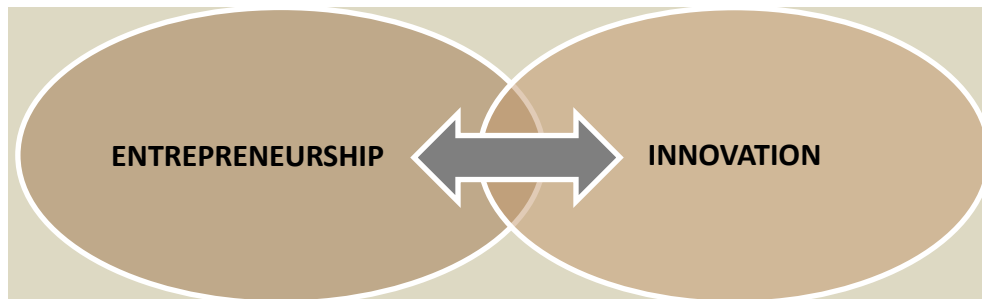
Georgia State University, USA
Director of the Study Abroad in Transition Economies
Director of Business Learning Community
Director of the Program Business Mediterranean Style

Keynote Address

“Academic Ethos, Pathos, and Logos Intersect with Innovation and Entrepreneurship”

Abstract

This paper explores the intersection of ethos, pathos, and logos with the newest conference theme: *Innovation and Entrepreneurship*. In Drucker’s [1] *entrepreneurial management*, or *new technology*, entrepreneurship and innovation are systematically related through cause and effect, underscoring that entrepreneurship is a form of innovation and innovation is both a driver of and consequence of entrepreneurship.



Ethos (character/credibility), pathos (emotion) and logos (logic) fosters a powerful platform for this cause and effect relationship to cultivate. While innovation is the tool of entrepreneurship and entrepreneurship is the tool of innovation, ethos, pathos, and logos provide a rich milieu for these catalysts to help create the inimitable.

The origin of *ethos*, *pathos* and *logos* began over 2,000 years ago: The Greek philosopher, Aristotle argued that persuasion consists of three categories: *ethos*, *pathos* and *logos* [2] & [4].

Ethos [Greek for character]

Ethical Appeal – Persuasion emanates from the credibility, authority, or reputation of the speaker or writer. An *ethos*-principled argument is characterized by an appeal based on ethics or credibility.

Pathos [Greek for experience or suffering]

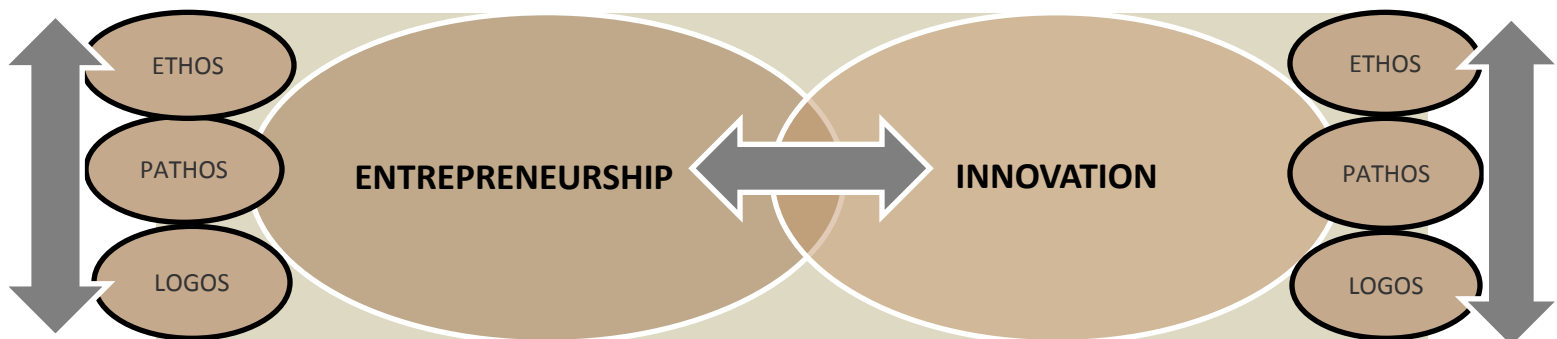
Emotional Appeal – Persuasion is grounded in sympathy, emotion, or instinct. A pathetic story conveys emotion and imagination such that the audience is empathetic with the values and beliefs of the speaker or writer.

Logos [Greek for word]

Logical Appeal – Persuasion rests with reason and refers to an argument's logical appeal. Of paramount importance is the internal consistency of an argument and supporting evidence, e.g. constructs such as if A, then B.

Persuasion is both innovation and entrepreneurship. What is persuasion if not the exploitation of an opportunity, commercialization of a product/service, *bringing something new into use*, i.e., innovation [3]. From the previously established cause and effect relationship, then persuasion is also entrepreneurship.

If *ethos*, *pathos*, and *logos* comprise persuasion, then these constituents are linked to innovation and entrepreneurship as follows:



This is a linear representation of a non-linear model. Joseph Schumpeter's [3] *Creative Destruction*, where destruction of an existing product/service enables the new to replace the old. This is similar to *Natural Economic Selection*, where survival of the fittest is dictated by the market.

The value-chain of *ethos*, *pathos*, and *logos* (where each activity adds value), serve as a pivotal function in connecting the dots, in much the same manner as Steve Jobs' 2005 Stanford commencement speech reference. In this speech, he discusses dropping in on a *Calligraphy* class at Reed College and learning *Serif* and *Sans Serif* type spacing, all of which made perfect sense ten years later when the Macintosh was invented with beautiful typography, multiple type-faces and proportionally spaced fonts... and since Windows just copied the Mac (according to Steve

Jobs), no personal computer would have such beautiful typography if he (Steve Jobs) had not dropped in on that class. His point is that connecting the dots can only be done looking backwards. <https://www.youtube.com/watch?v=D1R-jKKp3NA>

For this Plenary session, I will share a video to illustrate the intersection of **Academic Ethos, Pathos, and Logos with Innovation and Entrepreneurship**.

References

- [1] Drucker, P. [1998] **Innovation and Entrepreneurship**, New York: Harper.
- [2] Ramage, J.D. & Bean, J.C. [1998]. **Writing Arguments**. [4th Ed.]. Needham Heights, MA: Allyn & Bacon. pp 81-82.
- [3] Schumpeter, J. (1934). **The Theory of Economic Development**. Cambridge, MA: Harvard University Press.
- [4] Sproat, E., Driscoll, D.L. & Brizee, A. [2012]. **Aristotle's Rhetorical Situation**. Copyright ©1995-2014 by [The Writing Lab](#) & [The OWL at Purdue](#) and [Purdue University](#). <https://owl.english.purdue.edu/owl/resource/625/03/> Accessed February 15, 2014.

Short Bio

Dr. White is the Program Director for both the Study Abroad in Transition Economies [China/Russia/South Africa] and for the Business Mediterranean Style: Study Abroad in Greece & Turkey Program. She is also the Director of the Robinson Honors Program and the Director of Robinson Business Learning Community.

Internationally, Dr. Marta Szabo White has lectured at The RONALD H. BROWN INSTITUTE for SUB-SAHARAN AFRICA and the UNIVERSITÉ PANTHÉON-SORBONNE. She is the recipient of several teaching awards, including the 2004 Outstanding Teacher at Georgia State University, the 1999, 2003 and 2009 J. Mack Robinson College of Business Faculty Recognition Award for Outstanding Teaching, the 2002 Board of Advisors Teaching Excellence Award, the 2002 International Education Excellence Award, the 2005 Master Teacher Certificate Award and the nomination for the 2008 J. Mack Robinson College of Business Faculty Recognition Award for Outstanding Teaching.

In addition to striving for excellence and innovation in the practice of teaching, many of her contributions to the scholarship of teaching stem from her collaborations with the Duke CIBER, which have resulted in the publication of several Cross-Cultural Negotiation Simulations; the implementation of the ALBION in China simulation in Singapore, detailed in a 2004 Special Issue of *Global Business Languages*; and more recently, her role as ICE Teaching Consortium Advisor, the dissemination of CultureActive [pioneered by Richard Lewis] and ICE [initiated by Duke], both cross-cultural assessment tools grounded in the LMR [Linear-active, Multi-active, and Reactive] framework. Other research interests include strategy/structure/performance linkages.

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Plenary Session – Wednesday, July 15th, 2015, 1:30 PM – 3:30 PM



Professor Ulrich Schmitt

University of Stellenbosch, South Africa

Business School

Former IT consultant in London and Basle and professor and vice president at two independent universities in Germany

Keynote Address

“Knowledge Management Systems as an Interdisciplinary Communication and Personalized General-Purpose Technology”

Abstract

Has a novel Personal Knowledge Management (PKM) concept supported by a prototype system got what it takes to grow into a transformative General-Purpose-Technology (GPT)? In this address, the KM scenario of a decentralizing revolution where individuals and self-organized groups yield more power and autonomy is related to a GPT’s essential characteristics, including a wide scope for improvement and elaboration (in people’s private, professional and societal life), a broad range of diverse uses and disciplines (in the educational and work context), and strong complementarities with existing or new technologies (like Organizational KM Systems and a proposed World Heritage of Memes Repository).

Short Bio

Ulrich’s professional background covers positions as IT and management consultant in London and Basle, as professor and vice president at two independent universities in Germany, as well as Vice Rector at the Polytechnic of Namibia and Dean of the Graduate School at the University of Botswana. He studied Management and Industrial Engineering at TU Berlin and Cranfield University, completed his PhD at Basle University, and a Science and Research Management Program at Speyer University. Currently, he is focusing on Personal Knowledge Management and is Professor Extraordinaire at the University of Stellenbosch Business School.