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Country	# Papers	%
TOTAL	150	100.00
United States	23	15.33
Japan	22	14.67
Latvia	13	8.67
China	12	8.00
Russian Federation	11	7.33
Brazil	8	5.33
Austria	7	4.67
Colombia	5	3.33
Taiwan	5	3.33
Germany	3	2.00
South Korea	3	2.00
Canada	2	1.33
Hong Kong	2	1.33
India	2	1.33
Italy	2	1.33
Lebanon	2	1.33
Mexico	2	1.33
Saudi Arabia	2	1.33
South Africa	2	1.33
Thailand	2	1.33
Argentina	1	0.67
Bulgaria	1	0.67
Chile	1	0.67
Czech Republic	1	0.67
Ecuador	1	0.67
Iran	1	0.67
Iraq	1	0.67
Israel	1	0.67
Kazakhstan	1	0.67
Morocco	1	0.67
Netherlands	1	0.67
Nigeria	1	0.67
Pakistan	1	0.67
Paraguay	1	0.67
Peru	1	0.67
Poland	1	0.67
Qatar	1	0.67
Slovakia	1	0.67
United Kingdom	1	0.67
Vietnam	1	0.67

Foreword

Our purpose in the 19th World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI 2015) is to provide, in these increasingly related areas, a **multi-disciplinary forum, to foster interdisciplinary communication** among the participants, and to support the sharing process of diverse perspectives of the same transdisciplinary concepts and principles.

Systemics, Cybernetics and Informatics (SCI) are being increasingly related to each other in almost every scientific discipline and human activity. Their common transdisciplinarity characterizes and communicates them, generating strong relations among them and with other disciplines. They work together to create a whole new way of thinking and practice. This phenomenon persuaded the Organizing Committee to structure WMSCI 2015 as a multi-conference where participants may focus on one area, or on one discipline, while allowing them the possibility of attending conferences from other areas or disciplines. This systemic approach stimulates cross-fertilization among different disciplines, inspiring scholars, originating new hypothesis, supporting production of innovations and generating analogies; which is, after all, one of the very basic principles of the systems' movement and a fundamental aim in cybernetics.

WMSCI 2015 was organized and sponsored by the International Institute of Informatics and Systemics (IIS, www.iis.org), member of the International Federation of Systems Research (IFSR). The IIS is a **multi-disciplinary organization for inter-disciplinary communication and integration**, which includes about 4500 members. Consequently, a main purpose of the IIS is to foster knowledge integration processes, interdisciplinary communication, and integration of academic activities. Based on 1) the transdisciplinarity of the systemic approach, along with its essential characteristic of emphasizing *relationships* and *integrating* processes, and 2) the multi-disciplinary support of cybernetics' and informatics' concepts, notions, theories, technologies, and tools, the IIS has been organizing multi-disciplinary conferences as a platform for fostering inter-disciplinary communication and knowledge integration processes.

Multi-disciplinary conferences are organized by the IIS as support for both **intra-** and **inter-disciplinary** communication. Processes of intra-disciplinary communication are mainly achieved via traditional paper presentations in corresponding disciplines, while conversational sessions, regarding trans- and inter-disciplinary topics, are among the means used for inter-disciplinary communication. Intra- and inter-disciplinary communications might generate *co-regulative cybernetic loops*, via negative feedback, and *synergic* relationships, via positive feedback loops, in which both kinds of communications could increase their respective effectiveness. Figure 1 shows at least two cybernetic loops if intra- and inter-disciplinary are adequately related. A necessary condition for the effectiveness of Inter-disciplinary communication is an adequate level of **variety** regarding the participating disciplines. *Analogical thinking and learning processes* of disciplinarians depend on it; which in turn are potential sources of the creative tension required for cross-fertilization among disciplines and the generations of new hypothesis. An extended presentation regarding this issue can be found at www.iis.org/MainPurpose.

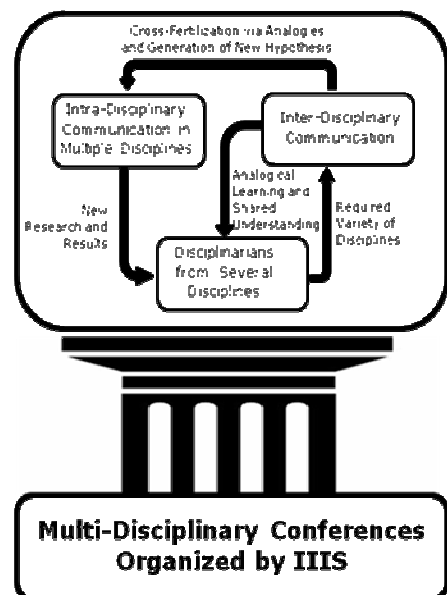


Figure 1

In the specific case of Systemics, Cybernetics and Informatics (SCI), the IIS is an organization dedicated to contribute to the development of the Systems Approach, Cybernetics, and Informatics potential, using both: knowledge and experience, thinking and action, theory and practice, for:

- a) the identification of synergetic relationships among Systemics, Cybernetics and Informatics, and between them and society;
- b) the promotion of contacts among the different academic areas, through the transdisciplinarity of the systems approach;
- c) the identification and implementation of communication channels among the different professions;
- d) the supply of communication links between the academic and professional worlds, as well as between them and the business world, both public and private, political and cultural;
- e) the stimulus for the creation of integrative arrangements at different levels of society, as well as at the family and personal levels;
- f) the promotion of transdisciplinary research, both on theoretical issues and on applications to concrete problems.

These IIS objectives have oriented the organizational efforts of yearly WMSCI/ISAS conferences since 1995.

On behalf of the Organizing Committee, I extend our heartfelt thanks to:

1. The 731 members of the Program Committee from 58 countries (including the PC members of the events organized in its context and jointly with it). Almost all the members of the Program Committee are *authors or co-authors sessions' best papers*, i.e. papers selected by the respective audience as the best paper of the session in which they were presented;
2. The 618 additional reviewers, from 72 countries, for their **double-blind peer reviews**; and
3. The 227 reviewers, from 49 countries, for their efforts in making the **non-blind peer reviews**. (Some reviewers supported both: non-blind and double-blind reviewing for different submissions).

A total of 1332 reviews made by 845 reviewers (who made at least one review) contributed to the quality achieved in WMSCI 2015. This means an average of 5.82 reviews per submission (229 submissions were received). *Each registered author had access, via the conference web site, to the reviews that recommended the acceptance of their respective submissions*. Each registered author could also get information about: 1) the average of the reviewers evaluations according to 8 criteria, and the average of a global evaluation of his/her submission; and 2) the comments and the constructive feedback made by the reviewers, who recommended the acceptance of his/her submission, so the author would be able to improve the final version of the paper.

In the organizational process of WMSCI 2015, about 229 articles were submitted. These pre-conference proceedings include about 150 papers that were accepted for presentation from 40 countries (48 countries taking into account the presentations in collocated events). I extend our thanks to the invited sessions' organizers for collecting, reviewing, and selecting the papers that will be presented in their respective sessions. The submissions were reviewed as carefully as time permitted; it is expected that most of them will appear in a more polished and complete form in scientific journals.

This information about WMSCI 2015 is summarized in the following table, along with the other collocated conferences:

Conference	# of submissions received	# of reviewers that made at least one review	# of reviews made	Average of reviews per reviewer	Average of reviews per submission	# of papers included in the proceedings	% of submissions included in the proceedings
WMSCI 2015	229	845	1332	1.58	5.82	150	65.50%
IMSCI 2015	99	356	722	2.03	7.29	50	50.51%
CISCI 2015	143	571	1243	2.18	8.69	79	55.24%
TOTAL	471	1772	3297	1.86	7.00	279	59.24%

We also extend our gratitude to the invited sessions organizers: Dr. Shigehiro Hashimoto, Dr. Natalja Lace, Dr. Oleg Goriachkin, Dr. Jang-Ruey Tzeng, and Dr. Miguel David Rojas López, as well as the special track co-chairs and the co-editors of these proceedings, for the hard work, energy and eagerness they displayed preparing their respective sessions. We express our intense gratitude to Professor William Lesso (1931-2015) for his wise and opportune tutoring, for his eternal energy, integrity, and continuous support and advice, as the Program Committee Chair of past conferences, and as Honorary President of WMSCI 2015, as well as for being a very caring old friend and intellectual father to many of us. We also extend our gratitude to Professor Belkis Sánchez, who brilliantly managed the organizing process.

Our gratitude to Professors Bela H. Banathy, Stafford Beer, George Klir, Karl Pribram, Paul A. Jensen, and Gheorghe Benga who dignified our past WMSCI conferences by being their Honorary Presidents. Special thanks to Dr. C. Dale Zinn and Professor Jorge Baralt for co-chairing WMSCI 2015 Program Committee and to professors Andrés Tremante and Belkis Sánchez for co-chairing the Organizing Committee. We also extend our gratitude to the following scholars, researchers, and professionals who accepted to deliver plenary workshops and/or to address the audience of the General Joint Plenary Sessions with keynote addresses.

Plenary Workshop, more details (abstracts and short bios) were included in the Conference Program booklet and at <http://www.iiis.org/summer2015plenaryevents/>

Professor Emeritus Stuart Umpleby, The George Washington University, USA, Former President of The American Society of Cybernetics.

Plenary Keynote Speakers, more details more details (abstracts and short bios) were included in the Conference Program booklet and at <http://www.iiis.org/summer2015plenaryevents/>

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

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Professor Andres Tremante, Florida International University, USA, The *Mechanical & Materials Engineering (MME)* Department

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Our gratefulness is also extended to the organizations that provided scientific, academic, professional, or corporative co-sponsorships. The following are among these organizations:



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Professor Nagib C. Callaos, Ph. D.
WMSCI 2015 General Chair
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