

Global X-Network

Annual Conference April 12-13, 2016

**FOCUS: Urban Resilience - Smart Cities - Xevents
“MANAGING IN TIMES OF GLOBAL UNCERTAINTY”**



This year's conference will be held on the campus of our partner X-Center USA – Stevens Institute of Technology – Center for Complex Systems and Enterprises ([CCSE](#))
Location: 525 River Street, Babbio Center, 5th Floor Hoboken, NJ 07030 in the Immersion Lab

Global X-Network

[The Global X-Network](#) is a global community of multi disciplinary researchers; practitioners (mathematicians, systems engineers, environmental systems scientists, economists, business operations researchers, psychologists, professors, sociologists) from Austria, Finland, Germany, UK, Japan, Korea, France, Singapore and the US who have joined forces to build tools for decision makers and to research uncertainties, complexities and extreme events and their impact on human systems.

Uncertainty is increasing, but decisions have to be made daily. Today's current strategy to deal with complexity is to try to collect more information and invest in anticipation systems. Our research indicates that the optimal strategy in today's times of new X-Events is when there is no historical dataAccept uncertainty and invest in resilience.

Our research, tools and methodologies can help you make those difficult decisions, determine new paths and build resilience to weather uncertain times ahead.

Agenda – Tuesday April 12th

Time	Activity	Moderator
9:00	Welcome, Introductions Center for Complex Systems & Enterprises Immersion Lab Demo	B. Fox B. Rouse
10:30	Break	
11:00	Global X-Network Updates Vienna Austria Urban Resilience – Springer Book Helsinki Finland Brazil	B. Fox J. Casti L. Ilmola M. Wilenius S. Miranda-da-Cruz
12:00	The X-Press Update http://thex-press.com/	J. Casti, R. Jones
12:30	End the morning Session and adjourn to lunch sessions	

Afternoon session on Urban Resilience and Discussion

01:30	Urban Resilience - Coastal Resilience and Urban Xcellence (CRUX)	Alex Washburn
02:30	Community Resilience	Jose Ramirez-Marquez
03:00	Smart City Hoboken	Gregg Vesonder
03:30	Break & Discussion	
04:00	URBAN FUTURE Initiative - Atelier Thomas Pucher	J. Liu
04:15 – 5:30	Participatory session: The theme is Goal 11 of the Sustainable Development Goals: Make cities inclusive, safe, resilient and sustainable.	A. Taylor P. Wiesbrock E. Schmitz

Tuesday Evening Dinner – Amanada’s 908 Washington St. Hoboken NJ
<http://amandasrestaurant.com/>

Agenda – Wednesday April 13th

Time	Activity	Moderator
09:00	How “situational awareness” is applied as a predictive model, and how research helps mitigating the X-event	M. Shabtai
09:30	Discussion	
09:45	Short Coffee Break	
10:00	Hedging the Financial Xevents	J. Casti
11:00	Xevents and Social Systems	R. Jones
11:30	A Real Example of Personal Resilience in a Rapidly Changing Market	E. Montiel
12:00	Round Table Discussion lead by Adrian Taylor over Lunch	

Afternoon Session

01:30	X-Center USA	J. Ramierz-Marquez
02:00	Value capturing in the fast emerging platform ecosystems: The Platform Value Now project funded by <u>Finland’s Strategic Research Council</u>	L. Ilmola, C. Watanabe, B. Fox, J. Ramierz-Marquez, V. Vurpillat
03:30	Break	
04:00	X-Center update: FoXC-J	C. Watanabe
04:15	Discussion and Wrap Up	B. Fox
05:30	End Conference	



Dr. William B. Rouse
Alexander Crombie Humphreys Professor
School of Systems & Enterprises (SSE)

Dr. William B. Rouse is a researcher, educator, author and entrepreneur. His current positions include Alexander Crombie Humphreys Chair in Economics of Engineering in the School of Systems and Enterprises at Stevens Institute of Technology and Professor Emeritus in the School of Industrial and Systems Engineering at the Georgia Institute of Technology. His earlier positions include Executive Director of the university-wide Tennenbaum Institute, Chair of the School of Industrial and Systems Engineering, CEO of two innovative software companies – Enterprise Support Systems and Search Technology – and

earlier faculty positions at Georgia Tech, University of Illinois, Delft University of Technology, and Tufts University. His expertise includes individual and organizational decision making and problem solving, as well as design of organizations and information systems. [See More](#)



Dr. John Casti
Founder X-Center Vienna

Research Fellow at the Center for Complex Systems and Enterprises at Stevens Institute of Technology

Professor John L. Casti received his Ph.D. in mathematics under Richard Bellman at the University of Southern California in 1970. He worked at the RAND Corporation in Santa Monica, CA, and served on the faculties of the University of Arizona, Santa Fe Institute in Santa Fe, New Mexico, NYU and Princeton before

becoming one of the first members of the research staff at the International Institute for Applied Systems Analysis (IIASA) in Vienna, Austria. In 2000 he formed two companies in Santa Fe and London, Qforma, Inc. and SimWorld, Ltd, devoted to the employment of tools and concepts from modern system theory for the solution of problems in business and finance. Casti has published nearly twenty volumes of academic and popular science and received his Ph.D. in mathematics from the University of Southern California. He lives in Vienna, Austria.



Alexandros Washburn is a former Chief Urban Designer of the City of New York, Department of City Planning. An architect who has worked both in the private and public sector, he served as Environment and Public Works Advisor to US Senator Daniel Patrick Moynihan, then as President of the Pennsylvania Station Redevelopment Corporation, and then partner of W Architecture and Landscape Architecture LLC, where he won national awards in urban design, architecture and landscape architecture before joining the Bloomberg Administration in his current position. As the leader of a design studio within the government, he acted as the design eyes for City Planning. His design team worked in all five boroughs on a range of urban design products from zoning rules and policy to master plans, individual projects and guidelines. Their projects ranged in scale from plazas to shorelines, from bench designs to tower tops. His team's purpose was to help improve the quality of public life in the city through design.

From individual buildings to the most complex infrastructure projects, he judges success in urban design from the point of view of the pedestrian. [See more](#)



Jose Emmanuel Ramirez-Marquez

School of Systems & Enterprises Stevens Institute of Technology

Areas of Research ([see more](#))

Sensor Networks Sensor networks are ubiquitous and new methods to analyze their performance are currently being investigated. The main goal is to build a set of mathematical models than can be used for optimal design configuration. The networks under consideration are mobile ad-hoc wireless networks, container inspection networks and detection networks.

Evolutionary Optimization & Data Mining Techniques This area includes the development of evolutionary optimization approaches that can be used for single or multiple objective optimization problems. The primary focus is on reliability related problems but applications in many systems engineering

problems, such as component obsolescence replacement, system readiness level optimization and multi-echelon spares allocation to name a few, are also part of this area.



Dr. Leena Ilmola

Research Scholar at International Institute for Applied Systems Analysis (IIASA)

Leena Ilmola-Sheppard is a Senior Research Scholar in the Advanced Systems Analysis (ASA) Program. She was previously Project Manager in the Game Changers and the Global Economy 2030 project called Seven Shocks Projects for Scotland, Finland and Korea. Her research theme is uncertainty and resilience of social systems. She is developing new modeling methods for foresight and tools for pragmatic decision making. Her current projects include developing management systems for resilience. Dr. Ilmola-Sheppard is Scientific Coordinator of the Global X-Network (GXN). The GXN consists of American, British, German,

Austrian, Korean, Japanese, Finnish and French researchers who dedicate their time to conducting comprehensive research on extreme events, uncertainty and resilience. The aim of the network is to build a theory of surprise by 2018. Dr. Ilmola-Sheppard is also currently working as an expert for the Futures Committee of the Finnish Parliament (since 2013) and previously worked for the Prime Minister's Office for the Finnish Government's Futures Review process (2012-2014).



Brenda J. Fox

President and CEO Global Connexus

COO Global X-Network

Brenda is a founding partner of the "Global X-Network". The mission of the Network is to build a new theory about uncertainty (Theory of Surprise) and develop pragmatic understandings of resilience of national/international economies and organizations and cities. The Global X-Network is a global organization of cross discipline researchers from Japan, Korea, Singapore, Austria, Germany, Czech Republic, USA and Finland. Brenda has held executive management roles as founder and CEO Global Connexus, President Codenomicon US Operations, CIO ReadRite, VP Application Services AristaSoft, VP Professional Service CompuCom, Director IT Safeguard Business Systems and Director IT

Prime Minister Trudeau's office. Brenda has been involved in a number of vertical markets in the US and Asia and is very familiar with their business processes, products, services and competition. Brenda was also responsible for an outsourced operation in Hyderabad India. Co-author of book: CIO Wisdom, Publisher: Prentice Hall, Spring 2002, ISBN: 0-13-141115-2 [See more](#)



Professor Chihiro Watanabe

**Acting Director Forum of X-Center Japan (FoXc-J)
Professor Emeritus, Tokyo Institute of Technology
Research Scholar International Institute for Applied Systems
Analysis (IIASA)
Research Professor, University of Jyväskylä, Finland**

Chihiro Watanabe graduated from Tokyo University with a bachelor's degree in engineering (urban planning) in 1968 and received his Ph. D. (arts and science) in 1992, also from Tokyo University.

Watanabe joined Japan's Ministry of International Trade and Industry (MITI) in 1968 and spent 26 years there, chiefly working in the fields of industrial policy, industrial technology policy, and energy and environmental policies. He is former Deputy Director-General of Technology Development of the Ministry.

From 1995 Professor Watanabe joined Tokyo Institute of Technology and worked as a professor at Department of Industrial Engineering and Management of the Graduate School of Decision Science and Technology of the Institute. He is former Vice-Dean of the Graduate School and also a Councilor (member of the council) of the Institute.

He was a leader of Japan's Ministry of Education, Culture, Sport, Science and Technology's (MEXT) 21st Century Center of Excellence (COE) Project: *Science of Institutional Management of Technology (SIMOT)*, and was Director of the *Research Center for the Science of Institutional Management of Technology*. He was a pioneer in developing a postulate of the co-evolution between innovation and institutional systems in a global society. He was selected as one of the world's top seven researchers in the field of management of technology (MOT) and innovation by the International Association of Management of Technology (IAMOT), and was also identified as one of the world's top researchers in the field of innovation analysis in MOT by IEEE IEEM in 2009. In home country, he was awarded JSSPRM (Japan Society for Science Policy & Research Management) Most Significant Contributor Award, and also Minister of Education, Science & Technology Award in 2009. In addition, he was awarded by the Emperor of Japan The Order of the Sacred Treasure (Gold Rays with Rosette) in 2014. [\(See more\)](#)



Professor Markku Wilenius

Senior Advisor, Adj. Professor Finland Futures Research Center

Professor Markku Wilenius received his Ph. D. in Political Sciences and completed his doctoral thesis on sociology of climate change in 1997. Dr. Markku Wilenius has acted among the very few professors of futures studies in the whole world.

His genuine interests lie in understanding the challenges and possibilities of the long-term future and bringing this foresight to the strategic thinking of society and companies. During his career he has served in many major companies and high-level governmental bodies to bring new insight to their future activities.

Markku has had a deep interest in understanding how culture can be seen more clearly as an asset for the whole society as well as for the companies. In 2002-2004 he led a major study where he, together with his research group, looked more closely at the interaction between culture and economics with the idea that this insight can contribute essentially to our understanding of the future competitiveness of Finnish society at large. As a result, in 2004 he published a widely appreciated book "Towards Creative Economy". He has continued this work by using values assessment methods with a number of companies to analyze their current organization culture. He is Vice-Chair of the advisory board of the European Futurists Conference, a body for professional European futurists. His current major research effort is to understand the long socio-economic waves and their implications particularly to Finnish economy and society. [See more](#)



Dr. Roger Jones

Research Fellow at the Center for Complex Systems and Enterprises at Stevens Institute of Technology

Roger D. Jones is an American physicist and entrepreneur. He currently serves on the board of Qforma, Inc. formerly located in Santa Fe, New Mexico, USA. Jones trained in physics at Dartmouth College, Jones worked as a staff physicist at Los Alamos National Laboratory from 1979 to 1995. His primary research interests were in laser fusion and machine learning. In the early nineties he headed projects that applied his machine learning inventions to technical problems in the private sector. At that time he became embroiled in controversy over corporate welfare and the role of technology transfer from the national laboratories to the private sector. In 1995 in collaboration with Citibank, Jones co-founded the Center for Adaptive Systems Applications (CASA), a company that applied neural network and adaptive technology to consumer banking. CASA was acquired by HNC Software in March 2000, at the peak of the dotcom boom. HNC Software was subsequently acquired by Fair Isaac Corporation. [See more](#)



Adrian Taylor

Founder 4Sing Foresight to Strategy for Security and Sustainability in Governance – Hamburg, Germany

Adrian Taylor helps both public and private sector clients to use foresight methods to formulate robust strategy options. His role is that of providing content input, process design as well as workshop moderation especially in security and sustainability related issues. He has experience in using a number of methods that leverage Open Source Intelligence, and the Parmenides Eidos Suite of software tools for supporting (but not in any way replacing) human reasoning to anticipate future changes in the world outside. In the course of his work he has had occasion to work in over 33 countries of the world, and runs workshops in English, French and German. Adrian has over two decades of working experience, and has previously been a junior officer in the British Army, a lobbyist on EU matters, a scenario planner in a joint venture with Global Business Network, Desk Officer for India at the European Commission and a visiting scholar at Georgia Tech, before joining the European School of Governance (eusg) – his last job prior to becoming self-employed. He was also President of the European Open Source Intelligence Forum in parallel to his employment with the eusg.

His education includes: Degree in Philosophy, Politics and Economics Trinity College Oxford, and a License Spéciale (Masters) in European Studies with “Grande Distinction” from the Université Libre de Bruxelles. Adrian is also author of a number of published essays, and regularly contributes editorial pieces to on-line journals. Adrian was born and raised in London, England, and has subsequently spent 24 years living elsewhere, notably Gibraltar, Brussels, Atlanta, Zurich, New York, and Munich. He currently resides in Hamburg.

Global X–Network Annual Conference



Sergio Miranda da Cruz

Former Director, UNIDO - United Nations Industrial Development Organization

Sergio Miranda da Cruz studied Engineering and Economics at Campinas University – UNICAMP and Getúlio Vargas Foundation (both in Brazil) and at the Massachusetts Institute of Technology, Boston. His area of interest and professional activity is theoretical and experimental modeling of linkages between science and technology (S&T) and sustainable development. He has worked as an engineer in different capacities with development and investment banking. He lectured as Professor at the School of Food Engineering in Brazil. He has been working for UNIDO since 1986, including a six-year period as the Representative of UNIDO in Beijing, covering North-East Asia (People's Republic of China, Mongolia,

Democratic People's Republic of Korea and Republic of Korea) and liaising with UNIDO's Investment and Technology Promotion Office in Japan. At UNIDO headquarters, he has been Director of four different areas.



Thomas Bruderman

Assistant Professor – Institute for Systems Science, Innovation & Sustainability Research

I have been working as a researcher and lecturer for various national and international research institutions, such as International Institute for Applied System Analysis, Vienna University of Economics and Business, University of Klagenfurt and University of Graz. I have been a visiting researcher at the National Institute for Environmental Studies (Japan) and a guest lecturer at Asian Institute of Technology (Thailand).

Holding a master degree in informatics and a doctoral degree in economic psychology, I consider myself a researcher with a multidisciplinary background, who does not operate within traditional disciplinary boundaries. [See more](#)



Dr. Victor Vurpillat

Chairman Global Connexus

Dr. Vurpillat has the visionary outlook and management experience from launching and growing many successful companies, including Telerate, Novell and CompuCom. Victor has played a key role in generating more the \$10B in stock market valuation in the technology sector.

Being in the heart of Silicon Valley, he has developed and continues to maintain numerous contacts with high tech venture capital individuals and institutions. His key skills are:

Ability to recognize new opportunities and communicate to the stakeholder community; Conduct industry research on emerging technology trends;

Match Making – network with entrepreneurs, prospective customers and venture capitalists; Assist companies to launch their businesses in new markets and verticals. Since 1998 Dr. Vurpillat has been an SME Globalization advisor to the Government of Finland through Global Connexus where he is Chairman of the Board.

Dr. Vurpillat is the author of three books: Principals of Inertial Navigation, Conversations with the Future (later made into a Documentary), and Launching your Software Business in America, written at the request of the Government of Finland.

He is also a member of Mensa and the World Future Society.



Moti Shabtai
President

As president of Qognify, Moti Shabtai brings vast experience to this role as he has been involved in the physical security industry for over 20 years. Moti has been with Qognify since its inception as NICE Systems Physical Security Business Unit and has been instrumental in laying the foundation for its evolution into its current form. At NICE Systems, he led R&D, Product Management, and Marketing and Business Development operations for the complete product line and oversaw sales and operations in the Americas. Moti has been involved in dozens of high profile projects worldwide. He graduated Magna Cum Laude with a B. SC. T.E.EE from Tel Aviv University and Summa Cum Laude with an MBA from Ben Gurion University in Israel.

<http://www.qognify.com/global-management/>



Petra Wiesbrock is a junior strategy consultant who has extensive experience of using a variety of tools like *Parmenides Eidos™* and *Futurescaper™* for consultation, scenarios work and strategizing purposes. She has a technical background in Urban Planning and Design and direct experience of coordinating stakeholder participation in territorial planning projects – notably including citizens' involvement. Petra has also applied a number of tools for visualization of both spatial and causal relationships, and this work helps the decision maker literally to “see” the impact of choices made on the physical space and other spheres. Petra is also a PhD candidate, working on urban informality and complexity based on the example of the rapidly changing urban neighborhood Sijoumi in Tunis.



Ms. Dipl.-Ing. Josephine Yilan Liu is a founding partner of **URBAN FUTURE Global Conference (UFGC)** - the world's largest meeting point for *City Changers* and the biggest event focusing entirely on how to make cities more sustainable. Her role has been to focus on initiating futuristic thinking, as well as to develop visionary ideas and collaborations increasing change in existing industry practice, and to identify and invent new opportunity for growth.

Josephine studied Environmental Design in Beijing, China, and took a master course in Graz, Austria majoring in Architecture and Project Management. She has been living in Austria since 2008.

As an urban planner and architect, Josephine works diligently to promote a holistic and integrated 'design thinking' approach (as an alternative to analytical thinking) in the practice of sustainable urban development. She connects and leverages knowledge, resources and capital to realize innovative, sustainable and resilient urban solutions, in order to solve pressing social and environmental issues.

By planning, implementing and show-casing the approach of using design thinking to solve problems across industries, she hopes to create positive social impact at scale with technology, and provoke positive social cycles instead of resistance or fear in our ever more connected and rapidly changing environment.

Gregg Vesonder is an Industry Professor in Software Engineering and Cyber-Physical Systems at Stevens Institute of Technology. He also serves as an Adjunct Professor at the University of Pennsylvania in Computer and Information Science. Prior to this role he served as Executive Director of the Cloud Platforms Research Department at AT&T Labs Research. His Department at AT&T Labs Research focused both on Cloud Platforms and Mobile and Pervasive Systems.

Global X–Network Annual Conference



Vesonder's career at AT&T spanned 35 years and a variety of roles. Over the years Vesonder led organizations in a variety of areas including parallel cluster computing, speech recognition and text to speech, sensor networks, C++ compiler development, Artificial Intelligence Software Development Environments, Logic Based Tools and Systems, and Expert Systems. Vesonder's work on artificial intelligence led to Bell Labs first commercial expert system, ACE. He received a Bell Labs Fellow in 1990 for "pioneering work in artificial intelligence applications and technology and outstanding contributions in enabling organizations throughout AT&T to realize benefits from this technology." He was later awarded an AT&T Fellow for this work. Vesonder also was involved with AT&T's *a2bmusic* venture initially as Vice President, Research and Development and later as Chief Technology Officer. *a2bmusic* involved digital music distribution using audio compression software (AAC) and Digital Rights Management software both developed internally.

His professional and research activities emphasize software, software engineering and the relationship of small systems (embedded, sensor based) to large scale systems particularly in Cyber-Physical and Socio-Technical domains. Vesonder also is interested in applying these techniques, learning by doing and social media to graduate and post graduate education and STEM for grade school and beyond.

Dr. Vesonder has authored over 40 research papers. He is both a Bell Labs and an AT&T Fellow. He has and is serving on multiple program committees, was a member of the editorial board of the International Journal of Information Quality, and the International Journal of Computer Systems Science and Engineering. He was associate editor in charge of Telecommunications and Network Management of the journal, Intelligent Systems Review. He also served as a guest editor of the IEEE Communications Magazine. [See More](#)