

# SYSTEMS ANALYSIS 2015: PROGRAM & TIMETABLE

Wednesday 11 November 2015

(Version: 10 November)

09:00-09:35	<p style="text-align: center;"><b>Opening Session: Welcome Addresses</b></p> <p>Welcome by:</p> <ul style="list-style-type: none"> <li>• IIASA Director General &amp; CEO, Pavel Kabat (Chair)</li> <li>• IIASA Council Chair, Don Saari</li> <li>• Howard Raiffa (video message)</li> <li>• INFORMS President, L. Robin Keller</li> <li>• NTU Complexity Institute Director, Peter Sloot</li> <li>• Santa Fe Institute, Luís Bettencourt</li> <li>• Vice-Chairs, Conference Scientific Committee, Elena Rovenskaya &amp; Ulf Dieckmann</li> </ul>
09:35-10:45	<p style="text-align: center;"><b>Framing Session: Two Keynote Lectures</b> (2 talks of 25 mins &amp; 5 min Q&amp;A)</p> <p>Introduction &amp; chair: Don Saari, IIASA Council Chair &amp; University of California, Irvine</p> <p style="text-align: center;"><b>Keynote Lectures</b></p> <ul style="list-style-type: none"> <li>• Simon Levin, Princeton University: Current revival of systems thinking and major challenges for systems analysis</li> <li>• Nebojsa Nakicenovic, IIASA: Recent applications of systems analysis for achieving sustainable futures for all on a safe planet</li> </ul>
10:45-11:15	<p style="text-align: center;">Coffee Break</p>
11:15-12:45	<p style="text-align: center;"><b>Session 1: Requirements for Methodological Advances in Systems Analysis</b> (3 talks of 25 mins &amp; 5 min Q&amp;A)</p> <p>Introduction &amp; chair: Marten Scheffer, Wageningen University</p> <ul style="list-style-type: none"> <li>• Jill Jäger, Independent Scholar: Methodological advances for transformative research</li> <li>• Beth Fulton, CSIRO: Linking scales &amp; “I am not a modeller” – The biggest challenges in socioecological modelling</li> </ul>

	<ul style="list-style-type: none"> <li>Wolfgang Lutz, IIASA &amp; Wittgenstein Centre: What should be the sustainability criteria in systems models?</li> </ul>
12:45-13:45	Lunch
13:45-15:45	<p style="text-align: center;"><b>Session 2: Trans-disciplinary Inspiration in Systems Thinking</b> (4 talks of 25 mins &amp; 5 min Q&amp;A)</p> <p>Introduction &amp; chair: Mark Stafford-Smith, CSIRO &amp; IIASA NMO Secretary for Australia</p> <ul style="list-style-type: none"> <li>Brian Fath, IIASA &amp; Towson University: Sustainability of complex systems: Insights from ecological dynamics</li> <li>Yamir Moreno, University of Zaragoza: From small to big data: The physics of human behavior</li> <li>Alexei Gvishiani, Russian Academy of Sciences: Systems analysis for geophysics: Challenges of the 21st century</li> <li>Luciano Pietronero, University of Rome Sapienza: New metrics for economic complexity: Measuring the intangible growth potential of countries</li> </ul>
15:45-16:15	Coffee Break
16:15-17:45	<p style="text-align: center;"><b>Session 3: The Art and Craft of Systems Analysis</b> (Part 1: 3 talks of 25 mins &amp; 5 min Q&amp;A)</p> <p>Introduction &amp; chair: Prabhat Ranjan, TIFAC &amp; IIASA Council Member for India</p> <ul style="list-style-type: none"> <li>Mark Beaumont, University of Bristol: Approximate Bayesian computation: Methods and applications for complex systems</li> <li>Werner Römisch, Humboldt Universität Berlin: Energy systems under uncertainty: Modeling and computations</li> <li>Petr Shebalin, Russian Academy of Sciences: Linking probabilistic and deterministic forecast methods: Systems analysis for predicting earthquakes</li> </ul>
18:00-18:30	<p style="text-align: center;"><b>Music and Science: IIASA's Goodwill Ambassador, Vienna Philharmonic</b></p> <p>Introduction &amp; chair: Pavel Kabat, IIASA</p> <p style="text-align: center;">Concert by members of the Vienna Philharmonic Orchestra</p>
18:30-20:30	<b>Poster Session and Reception</b>

Thursday 12 November 2015

09:00-11:00	<p style="text-align: center;"><b>Session 3: The Art and Craft of Systems Analysis</b> (Part 2: 4 talks of 25 mins &amp; 5 min Q&amp;A)</p> <p>Introduction &amp; chair: Prabhat Ranjan, TIFAC &amp; IIASA Council Member for India</p> <ul style="list-style-type: none"> <li>• Marten Scheffer, Wageningen University: Foreseeing critical transitions</li> <li>• Ronald R Yager, Iona College: Fuzzy sets methods for constructing multi-criteria decision functions: Mixing words and mathematics</li> <li>• Andrzej Ruszczyński, Rutgers University: Risk quantification and control: Challenges and opportunities</li> <li>• Yoshihide Wada, Utrecht University: Reducing water scarcity possible by 2015: Linking global assessments to policy dimensions</li> </ul>
11:00-11:30	Coffee Break
11:30-13:15	<p style="text-align: center;"><b>Howard Raiffa Session</b> (4 talks of 20 mins &amp; 25 mins panel discussion)</p> <p>Introduction &amp; chair: Detlof von Winterfeldt, University of Southern California</p> <ul style="list-style-type: none"> <li>• David E. Bell, Harvard Business School: Policy, probability and preference</li> <li>• Ali E. Abbas, University of Southern California: The need for a sound decision-making system in systems analysis</li> <li>• Raimo P. Hämäläinen, Aalto University: Behavioral aspects of decision analysis</li> <li>• Ralph L. Keeney, Duke University: Constructing value models for applied systems analysis</li> </ul>
13:15-14:15	Lunch
14:15-15:45	<p style="text-align: center;"><b>Session 4: New Methods for Understanding Complex Systems</b> (Part 1: 3 talks of of 25 mins &amp; 5 min Q&amp;A)</p> <p>Introduction &amp; chair: Ulf Dieckmann, IIASA</p> <ul style="list-style-type: none"> <li>• Luis Bettencourt, SFI: The city as a system</li> <li>• Dirk Helbing, ETH Zürich: From computational social science to global systems science</li> </ul>

	<ul style="list-style-type: none"> <li>Siew Ann Cheong, Nanyang Technological University: Critical transitions in markets and societies</li> </ul>
15:45-16:15	Coffee Break
16:15-18:15	<p style="text-align: center;"><b>Session 4: New Methods for Understanding Complex Systems</b> (Part 2: 4 talks of 25 mins &amp; 5 min Q&amp;A)</p> <p>Introduction &amp; chair: Elena Rovenskaya, IIASA</p> <ul style="list-style-type: none"> <li>Stefan Thurner, IIASA, Medical University of Vienna &amp; Santa Fe Institute: Management of systemic risk</li> <li>Soo Hong Chew, National University of Singapore: Familiarity bias breeds investment if you have the right gene</li> <li>Boris Mirkin, National Research University Higher School of Economics, Moscow: Data summarization at clustering and ranking</li> <li>Mauro Martino, IBM: Data visualization and artificial intelligence: The real time exploration of unstructured big data</li> </ul>
18:15-18:45	Coffee Break
18:45-20:00	<p style="text-align: center;"><b>Public Lecture, jointly organized by IIASA and the Austrian Academy of Sciences</b> (1 talk of 30 mins followed by Q&amp;A)</p> <p>Introduction &amp; chair: Pavel Kabat, IIASA Welcome by Anton Zeilinger, President, Austrian Academy of Sciences</p> <ul style="list-style-type: none"> <li>Robbert Dijkgraaf, Director, Institute for Advanced Study in Princeton: Building bridges between science and policy</li> </ul>
20:00-21:00	Reception

Friday 13 November 2015

09:00-10:30	<p style="text-align: center;"><b>Session 5: Addressing Diversity in Social Systems</b> (Part 1: 3 talks of 25 mins &amp; 5 min Q&amp;A)</p> <p>Introduction &amp; chair: Mary Scholes, University of the Witwatersrand &amp; Chair, IIASA Science Advisory Committee (SAC)</p> <ul style="list-style-type: none"> <li>• Sergio Rinaldi, IIASA &amp; Polytechnic University of Milan: Modeling love dynamics</li> <li>• L. Robin Keller, INFORMS &amp; University of California: Multi-objective multi-stakeholder decision analysis</li> <li>• Karl Sigmund, IIASA &amp; University of Vienna: Institutions as tools for overcoming social dilemmas.</li> </ul>
10:30-11:00	Coffee Break
11:00-12:00	<p style="text-align: center;"><b>Session 5: Addressing Diversity in Social Systems</b> (Part 2: 2 talks of 25 mins &amp; 5 min Q&amp;A)</p> <p>Introduction &amp; chair: Mary Scholes, University of the Witwatersrand &amp; Chair, IIASA SAC</p> <ul style="list-style-type: none"> <li>• Christoph Hauert, University of British Columbia: Honour, shame and climate change – Lessons from public goods experiments</li> <li>• Anna Scolobig, ETH Zurich: From stakeholder views to policy options</li> </ul>
12:00-13:00	Lunch
13:00-14:30	<p style="text-align: center;"><b>Session 6: Devising Integrated Solutions</b> (Part 1: 3 talks of 25 mins &amp; 5 min Q&amp;A)</p> <p>Introduction &amp; chair: Ali E. Abbas, University of Southern California</p> <ul style="list-style-type: none"> <li>• Robert Lempert, RAND Corporation: A new decision science for complex systems: A decade of enabling tools</li> <li>• Xijin Tang, Chinese Academy of Sciences: Perception of societal risk from on-line community concern</li> <li>• David McCollum, IIASA: Harnessing systems analytical tools to develop sustainable energy scenarios for the 21st century</li> </ul>

14:30-15:00	Coffee Break
15:00-16:30	<p style="text-align: center;"><b>Session 6: Devising Integrated Solutions</b></p> <p style="text-align: center;">(Part 2: 2 panels of 45 minutes with 2 introductory presentations of 10 mins each followed by 25 minute discussion)</p> <p>Introduction &amp; chair: Ali E. Abbas, University of Southern California</p> <p>Panel 1: Science-policy interface in regard to air-quality and climate negotiations in Europe</p> <ul style="list-style-type: none"> <li>• Markus Amann, IIASA</li> <li>• Martin Williams, King's College London</li> </ul> <p>Panel 2: Mobilizing mass action through mobile devices: Challenges and opportunities for science, policy and governance</p> <ul style="list-style-type: none"> <li>• Linda See, IIASA</li> <li>• Paul Chatterton, WWF International Forest and Climate Program</li> </ul>
16:30-17:00	Coffee Break
17:00-19:00	<p style="text-align: center;"><b>Closing Session: A New Generation of Systems Analysis</b></p> <p>Introduction &amp; chair: Pavel Kabat, IIASA</p> <p>Poster awards voted for by conference participants followed by 5 minute presentation from each winner</p> <ul style="list-style-type: none"> <li>• Best poster by an early-career scientist</li> <li>• Best poster by a mid-career scientist</li> <li>• Best poster overall</li> </ul> <p>Award for most popular tweet of a quote from the conference</p> <p>Conference synthesis and outlook for systems analysis</p> <ul style="list-style-type: none"> <li>• Ulf Dieckmann &amp; Elena Rovenskaya, IIASA</li> </ul> <p>Panel: Outlook for systems analysis</p> <ul style="list-style-type: none"> <li>• Luís Bettencourt, Santa Fe Institute</li> <li>• Nadya Komendantova, IIASA</li> <li>• Martin Lees, University for Peace of the United Nations &amp; China Council for International Cooperation on Environment and Development</li> <li>• Raya Mutarak, IIASA</li> <li>• Stephen Robinson, University of Wisconsin Madison</li> </ul>

