

# Program for 5<sup>th</sup> Sustainable Phosphorus Summit

## (SPS 2016)

Tuesday 16 <sup>th</sup> August	
10:00-21:00	<b>Registration</b>
18:30-21:00	<b>Dinner</b>
Wednesday 17 <sup>th</sup> August	
9:00-9:20	<p style="text-align: center;"><b>Opening Ceremony</b> Chair: Fusuo Zhang</p> <p>Welcome address by:  <b>Governor</b> (<i>Yunnan Province, China</i>)  <b>Prof. Bingsheng Ke</b> (<i>President of China Agricultural University, China</i>)  <b>Mr. Wenxue Zhang</b> (<i>President of Yuntianhua Group, China</i>)  <b>Prof. Pamela Matson</b> (<i>Stanford University, Fellow of the National Academy of Science of US</i>)</p>
9:20-10:20	<p style="text-align: center;"><b>Plenary lectures</b> Chair: Fusuo Zhang</p>
9:20-9:50	[Plenary 1] <b>Peter Vitousek</b> ( <i>Stanford University, US</i> ) & <b>Gabriel Maltais-Landry</b> ( <i>University of British Columbia, Canada</i> ): N-P input stoichiometry as a constraint to sustainable use of P
9:50-10:20	[Plenary 2] <b>Pedro A. Sanchez</b> ( <i>Columbia University, US</i> ): Is phosphorus a renewable resource?
10:20-10:50	<b>Coffee break and poster presentations</b>
10:50-12:10	<p style="text-align: center;"><b>Session 1- P Resource and Biogeochemical Cycling</b> Chairs: Jianbo Shen &amp; Paul Withers</p>
10:50-11:20	[Keynote 1] <b>James Elser</b> ( <i>Arizona State University, US</i> ): These are "the best of times, the worst of times": the latest news from the NSF P Sustainability Research Coordination Network (P RCN) and the North American Partnership for Phosphorus Sustainability (NAPPS)
11:20-11:50	[Keynote 2] <b>Federica Tamburini</b> ( <i>ETH Zurich, Switzerland</i> ): Studying the P cycle in the terrestrial and aquatic ecosystems with oxygen stable isotopes
11:50-12:10	[Oral 1] <b>Minpeng Chen</b> ( <i>Chinese Academy of Agricultural Sciences</i> ): Global P flows: A dynamic perspective
12:10-13:30	<b>Lunch</b>
13:30-15:30	<p style="text-align: center;"><b>Session 2- P Mining and Fertilizer Technology</b> Chairs: James Elser &amp; Jianchu Xu</p>
13:30-14:00	[Keynote 1] <b>Gerald Steiner</b> ( <i>Danube University Krems, Austria</i> ): Developments and efficiency considerations in phosphate rock mining
14:00-14:30	[Keynote 2] <b>Michel Prud'Homme</b> ( <i>IFA, France</i> ): Trends in global phosphate supply
14:30-14:50	[Oral 1] <b>Xiucheng Xu</b> ( <i>Zhengzhou University, China</i> ): Patterns of phosphorus resources utilization in Yuntianhua group-Zhengzhou University

14:50-15:10	[Oral 2] <b>Xuedong Ye</b> ( <i>Chinese Association of Phosphorus Fertilizer Industry, China</i> ): Status quo of phosphogypsum comprehensive utilization in China	
15:10-15:30	[Oral 3] <b>Bruene Cremer</b> ( <i>ICL Fertilizer Europe, Israel</i> ): ICL-closing the P <sub>2</sub> O <sub>5</sub> loop	
15:30-16:00	<b>Coffee break and poster presentations</b>	
16:00-18:10	<b>Session 3: P Use in China</b> Chairs: Lixing Yuan & Philippe Hinsinger	
16:00-16:30	[Keynote 1] <b>Yufen Zhao</b> ( <i>Xiamen University, China</i> ): Phosphorus chemistry and sustainable life on Earth	
16:30-16:50	[Oral 1] <b>Weiming Shi</b> ( <i>Institute of Soil Science, CAS</i> ): Phosphorus accumulation in intensive agricultural field in China and its environmental impact	
16:50-17:10	[Oral 2] <b>Jianbo Shen</b> ( <i>China Agricultural University, China</i> ): Phosphorus mobilization and efficient use in intensive cropping systems in China	
17:10-17:30	[Oral 3] <b>Hong Liao</b> ( <i>Fujian Agriculture &amp; Forestry University, China</i> ): Phosphorus promotes nitrogen nutrition through modifications to root architecture and nodulation in soybean	
17:30-17:50	[Oral 4] <b>Lixing Yuan</b> ( <i>China Agricultural University, China</i> ): Enhancing phosphorus uptake efficiency through QTLs-based selection for root architecture in maize ( <i>Zea mays</i> L.)	
17:50-18:10	[Oral 5] <b>Xin Liu</b> ( <i>Nanjing University, China</i> ): Dynamics of phosphorus cycling in China	
18:10-19:30	<b>Dinner</b>	
19:30-21:30	<b>Roundtables and Workshops on P sustainability</b> Chair: Yonglong Lu (Suriya Narayanan / Paul Withers / Thomas Nesme / James Elser / Michael Obersteiner / Dana Cordell / Jianbo Shen / Haigang Li / Gang Pan)	<b>Annual meeting of the on-going P project by Natural Science Foundation of China: P fertilizer development strategy in China</b> Chair: Yufen Zhao

<b>Thursday 18<sup>th</sup> August</b>	
8:30-12:10	<b>Session 4: Sustainable P Use in Agriculture</b> Chairs: Thomas Nesme & Hong Liao
8:30-9:00	[Keynote 1] <b>Paul Withers</b> ( <i>Bangor University, UK</i> ): Managing phosphorus to achieve the sustainable intensification of agriculture
9:00-9:30	[Keynote 2] <b>Zed Rengel</b> ( <i>University of Western Australia, Australia</i> ): Farming most P-impooverished soils on the planet: case study of Australia
9:30-10:00	[Keynote 3] <b>Philippe Hinsinger</b> ( <i>INRA UMR, France</i> ): Phosphorus availability and bioavailability in soils - a key and a clue
10:00-10:20	[Oral 1] <b>Tom Bruulsema</b> ( <i>IPNI, Canada</i> ): Performance metrics for the role of phosphorus in sustainable intensification of agriculture

10:20-10:50	<b>Coffee break and poster presentations</b>
10:50-11:10	[Oral 2] <b>Shin-ichiro Mishima</b> ( <i>National Institute for Agro-Environmental Sciences, Japan</i> ): Changes of phosphorus fertilization, yielding and stock in farmland soils in Japan from 1980 to 2010
11:10-11:30	[Oral 3] <b>Philip White</b> ( <i>The James Hutton Institute, UK</i> ): Physiological and genetic factors affecting phosphorus use efficiency of potato
11:30-11:50	[Oral 4] <b>Susanne Schmidt</b> ( <i>University of Queensland, Australia</i> ): A role of organic phosphorus for plant nutrition
11:50-12:10	[Oral 5] <b>Martin Blackwell</b> ( <i>Rothamsted Research, UK</i> ): Effectiveness of a novel compound fertiliser/soil improver derived from abattoir waste and impure industrial chemicals: results of grass and wheat trials
12:10-13:30	<b>Lunch</b>
13:30-17:10	<b>Session 5: P Recovery and Reuse</b> Chairs: Zed Rengel & Weiming Shi
13:30-14:00	[Keynote 1] <b>Ludwig Hermann</b> ( <i>Outotec GmbH, Germany</i> ): Challenges and opportunities for nutrient recycling in a circular economy – lessons learned in Europe
14:00-14:30	[Keynote 2] <b>Kazuyo Matsubae</b> ( <i>Tohoku University, Japan</i> ): Resource logistics of phosphorus focusing on the demand and supply structure in Asia
14:30-15:00	[Keynote 3] <b>Willem Schipper</b> ( <i>Willem Schipper Consulting, The Netherlands</i> ): A comparison of recycling technologies of P
15:00-15:20	[Oral 1] <b>Hisao Ohtake</b> ( <i>Waseda University, Japan</i> ): Industrial considerations of phosphorus use for redefining the sustainable value chain based on recycling
15:20-15:40	[Oral 2] <b>Becker Gero</b> ( <i>Hohenheim University, Germany</i> ): Phosphorus reclamation conversion of sewage sludge to fuel and fertilizer
15:40-16:10	<b>Coffee break and poster presentations</b>
16:10-16:30	[Oral 3] <b>Yaoji Li &amp; Yongqing Guo</b> ( <i>Yunnan Phosphate Chemical Group Co., Ltd, China</i> ): Effects of phosphorus feed additives on animal productivity and phosphorus composition in manure
16:30-16:50	[Oral 4] <b>Rob de Ruiter</b> ( <i>Ecophos, The Netherlands</i> ): Change your mind about phosphorus: high quality products from low quality rock or urban waste
16:50-17:10	[Oral 5] <b>Tiequan Zhang</b> ( <i>Agriculture and Agri-Food Canada, Canada</i> ): Assessing phosphorus loss in surface runoff and tile drainage with P-based liquid and solid cattle manure application
17:10-18:10	<b>Panel Discussion on Industrial P Technology and Re-use</b> Chairs: Ludwig Hermann & Bruene Cremer ( <b>Rob de Ruiter</b> -Ecophos / <b>Ludwig Hermann</b> -Outotec / <b>Willem Schipper</b> -Willem Schipper Consulting / <b>Bruene Cremer</b> -ICL / <b>Tom Bruulsema</b> -IPNI / <b>Tao Zhang</b> -CAU)
18:10-18:40	Poster presentations

19:00-20:30	<b>Banquet</b>
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<b>Friday 19<sup>th</sup> August</b>	
8:30-11:00	<b>Session 6: Holistic P Flow and Efficiency</b> Chairs: Zhengxia Dou & Philip White
8:30-9:00	[Keynote 1] <b>Oene Oenema</b> ( <i>Wageningen UR, The Netherlands</i> ): International trade of food and feed and the need for manure and waste treatment and trade
9:00-9:30	[Keynote 2] <b>Thomas Nesme</b> ( <i>University of Bordeaux, France</i> ): Indicators and tools for holistic food chain design
9:30-10:00	<b>Coffee break and poster presentations</b>
10:00-10:20	[Oral 1] <b>David Vaccari</b> ( <i>Stevens Institute of Technology, US</i> ): A substance flow model for global phosphorus: sensitivity to interventions for conservation
10:20-10:40	[Oral 2] <b>Lin Ma</b> ( <i>Institute of Genetic and Developmental Biology, CAS</i> ): Sustainable pathway of phosphorus management in the food systems of China
10:40-11:00	[Oral 3] <b>Shenghui Cui</b> ( <i>Institute of Urban Environment, CAS</i> ): Resource footprint and environmental effect of phosphorus metabolism in anthroposphere
11:00-16:10	<b>Session 7-Environment Sustainability and Management Strategies</b> Chairs: Philip Haygarth & Oene Oenema
11:00-11:30	[Keynote 1] <b>Dana Cordell</b> ( <i>University of Technology Sydney, Australia</i> ): Policy tools and frameworks for phosphorus security
11:30-12:00	[Keynote 2] <b>Michael Obersteiner</b> ( <i>International Institute for Applied Systems Analysis, Austria</i> ): Governing P within a wider SDG (Sustainable Development Goals) framework
12:00-13:30	<b>Lunch</b>
13:30-14:00	[Keynote 3] <b>Philip Haygarth</b> ( <i>Lancaster University, UK</i> ): Fluxes of phosphorus from soil to water and implications for sustainability
14:00-14:20	[Oral 1] <b>Marco Roelcke</b> ( <i>Technische Universität Braunschweig, Germany</i> ): Soil P status and organic residue management options in a Chinese peri-urban region with high livestock densities
14:20-14:40	[Oral 2] <b>Jiechen Wu</b> ( <i>China Agricultural University, China</i> ): Systems perspectives on modelling and managing future phosphorus flows in urban area: case studies in Stockholm, Sweden
14:40-15:00	[Oral 3] <b>Zhengxia Dou</b> ( <i>University of Pennsylvania, US</i> ): Phosphorus: from feeds to feces to soils and potentially water bodies
15:00-15:20	[Oral 4] <b>Gang Pan</b> ( <i>Chinese Academy of Sciences, China; Nottingham Trent University, UK</i> ): Using pollutant phosphorus as resources for sustainable ecological restoration and food chain reconstruction in eutrophic water systems
15:20-15:50	<b>Coffee break and poster presentations</b>

15:50-16:10	[Oral 5] <b>Jianchu Xu</b> ( <i>Kunming Institute of Botany, CAS</i> ): Agroforestry: new opportunities for phosphorus pollution management and ecological restoration
16:10-17:10	<b>Panel Discussion on P Governance and Policy</b> Chairs: Arnoud Passenier & Dana Cordell
17:10-17:40	<b>Closing remarks: Philippe Hinsinger &amp; Fusuo Zhang</b>
18:00-20:00	<b>Dinner</b>
<b>Saturday 20<sup>th</sup> August</b>	
7:30-12:30	<b>Post-P summit tour:</b> Field Tour to Explore P Industrial Chain from Mining to Fertilizer, organized by Yuntianhua Group
12:30-13:30	<b>Return to hotel</b>
13:30-14:30	<b>Lunch</b>

