

TUESDAY 2 October									
0900-0930	Registration Opens								
0930-1030	Opening Plenary S. Orlović, D. Tsao	Opening Ceremony Presentation of the Institute, Distinguished Guests, Certificates of Merit							
1030-1045		Intermission							
1045-1245		Plenary Lectures Dr. Michal V. Marek, Czech Academy of Sciences Dr. Luca Sebastiani, Scuola Superiore Sant'Anna, Italy Dr. Ron Zalesny, US Dept. of Agriculture Forest Service Dr. Hojka Kraigher, Slovenian Forestry Institute							
1245-1330		Milton Gordon Award Presentation Dr. Jean-Louis Morel							
1330-1430	Lunch								
1430-1450	Session 1A Ecology R. Zalesny	051	Session 1B Detection/Models J. Burken	159	Session 1C Metals A M. Pogrzeba	011			
1450-1510		090		143		004			
1510-1530		105		137		054			
1530-1550		132		037		020			
1550-1610		136		055		023			
1610-1630		149		102		052			
1630-1650	161	050	096						
1650-1710	Break								
1710-1730	Session 2A Air S. Gawronski	072	Session 2B Explosives L. Rylott	135	Session 2C Metals B A. Baker	063			
1730-1750		024		087		076			
1750-1810		033		013		101			
1810-1830		079		042		150			
1830-2000	Transport University-Hotels-Gala Dinner Venue								
2000-2330	Gala Dinner								

WEDNESDAY 3 October									
0830-0850	Session 3A General T. Macek	156	Session 3B PGPR/Endophytes H. Atagana	164	OPEN				
0850-0910		036		046					
0910-0930		092		122					
0930-0950		126		142					
0950-1010		134		058					
1010-1030		OPEN		160					
1030-1050	Break								
1050-1110	Session 4A Nano A J. White	017	Session 4B Wetlands A D. Tsao	064	Session 4C Metals/Rads A. Pilipovic	040			
1110-1130		007		031		120			
1130-1150		010		081		022			
1150-1210		025		085		127			
1210-1230	OPEN	154	001						
1230-1350	Lunch								
1350-1410	Session 5A Nano B M. Marmiroli	093	Session 5B Wetlands B X. Yang	005	Session 5C Cadmium A C. Sirguy	059			
1410-1430		053		008		138			
1430-1450		060		027		047			
1450-1510		083		080		069			
1510-1530	Break								
1530-1550	Session 6A Nano C N. Marmiroli	131	Session 6B Mixed D. Tsao	003	Session 6C Cadmium B C. Sirguy	088			
1550-1610		103		002		006			
1610-1630		110		OPEN		OPEN			
1630-1650		130		OPEN		OPEN			
1650-1830	Poster Session Student Judging (B. Zeeb) 015, 016, 018, 019, 039, 084, 098, 108, 117, 123 124, 129, 141, 144, 146, 152, 157, 158, 162, 163 075, 082, 097, 099, 147, 155								
1830-2000	IPS Society Business Meeting (IPS Members Only)								

THURSDAY 4 October									
0830-0850	Session 7A Phyto Products F. Pitre	035	Session 9B Organics A M. Isleyen	153	Session 7C Nickel G. Echevarria	140			
0850-0910		032		112		074			
0910-0930		038		113		061			
0930-0950		095		115		062			
0950-1010		106		151		078			
1010-1030		116		114		128			
1030-1050	Break								
1050-1110	Session 8A Biochar/OM E. Maestri	125	Session 8B Organics B Y. Luo	133	Session 8C Copper M. Mench	119			
1110-1130		014		148		100			
1130-1150		118		077		145			
1150-1210		OPEN		109		012			
1210-1330	Lunch								
1330-1350	Session 9A Processes M. Javed	094	Session 7B Satis/Nutrients O. Dhankeher	111	Session 9C Arsenic L. Ma	045			
1350-1410		009		091		026			
1410-1430		021		028		070			
1430-1450		089		044		071			
1450-1510	OPEN	056	121						
1510-1530	Break								
1530-1550	In Memoriam - Jean-Paul Schwitzguebel								
1550-1650	Awards Ceremony Student Competitions Distinguished Service Stephen D. Ebbs								
1650-1710	Closing Plenary D. Tsao, A. Pilipovic	Announcements (IJP, 2019 IPC16 Venue)							
1710-1730		Closing Remarks / Field Tour Instructions							
1730-1750	Break / Adjourn								
1750-2000	IJP Editorial Board Meeting (IJP Editors Only)								

MONDAY 1 October

0900-1030	General Introductions Mechanisms and Applications - Upland and Wetland Systems
1030-1045	Break
1045-1230	Assessment - Exercise #1 Phytotechnology Selection - Exercises #2/#3
1230-1330	Lunch
1330-1515	Design and Implementation - Exercises #4/#5 (calculator needed)
1515-1530	Break
1530-1700	Operation, Maintenance, & Monitoring Site Reuse Considerations

TUESDAY 2 October

0900-0930						Registration Opens							
0930-1030		Opening Plenary Sasa Orlovic, David Tsao	Opening Ceremony Presentation of the Institute, Distinguished Guests, Certificates of Merit										
1030-1045			Intermission										
1045-1245			Plenary Lectures Dr. Michal V. Marek, Czech Academy of Sciences Dr. Luca Sebastiani, Scuola Superiore Sant'Anna, Italy Dr. Ron Zalesny, US Dept. of Agriculture Forest Service Dr. Hojka Kraigher, Slovenian Forestry Institute										
1245-1330			Milton Gordon Award Presentation Dr. Jean-Louis Morel										
1330-1430						Lunch							
1430-1450		Session 1A - Ecology Ron Zalesny	051 - B. Pathak , J.K. Singh (Central Univ. Gujarat, India) Potential contribution of multifunctional mangrove forest to reduce coastal environment degradation and climate change mitigation			Session 1B - Detection/Models Joel Burken	159 - X. He, H. Zhang, R. Xue, W. Liu, H. Shi, M. Bagheri, J.G. Burken (MUST., USA) Rapid throughput freeze-thaw-centrifugation sampling of plant tissues for HPLC-MS/MS analysis for uptake of emerging pollutants			Session 1C - Metals A Marta Pogrzeba	011 - M. Pogrzeba , J. Krzyzak, S. Rusinowski (Inst. for Ecology of Industrial Areas, Poland) Seasonal changes in heavy metal and macronutrients distribution in aboveground parts of seed-based <i>Miscanthus</i> hybrids and <i>M. x giganteus</i> grown on contaminated arable land		
1450-1510			090 - A. Laakilij , M. Alami, O. Pakhrou, L. Medraoui, A. Filali-Maltouf, B. Belkadi (Mohammed Vth Univ., Morocco) Genetic structure of Moroccan cork oak (<i>Quercus suber</i> L.) and genotyping of "Plus" trees: implication for conservation and detection of "outliers"				143 - B. Pereira , A. Pellegrino, B. Hale (Univ. Guelph, Canada) Diffusive gradients in thin films (DGT) devices as biomimics for bioaccessible rare earth elements (REEs) in soil				004 - D. Shiva Kumar , N. Smitha, A. Nagaraju (Univ. Mysore, India) Phytoremediation technique for cleaning up of industrial contaminated soil by <i>Trigonella foenum graecum</i> and <i>Pennisetum purpureum</i>		
1510-1530			105 - S. Arpaia , G.M. Di Leo (ENEA, Italy) Estimating the possible exposure of flower visiting insects to mercury in a polluted area in southern Italy				137 - M. Bagheri, J.G. Burken , (MUST., USA) Artificial neural network and fuzzy logic as capable tools to assess and predict uptake of contaminants in plants				054 - A. Saran , L. Fernandez , V. Imperato, S. Thijs, J. Vangronsveld, L.J. Merini (Univ. Hasselt, Belgium) <i>Helianthus petiolaris</i> : a novel native aromatic plant species with potential use in phytostabilizatyon of metals contaminated areas		

TUESDAY 2 October

1530-1550	Session 1A Ecology Ron Zalesny	132 - L. Ciadamidaro, S. Pfendler, C. Zappelini, <u>D. Blaudez</u> , M. Chalot (Université de Bourgogne Franche-Comté, France) Fungal diversity at poplar phytomanaged sites	Session 1B Detectoin/Models Joel Burken	037 - <u>S. Dehghani</u> , K.R. Zupfer, L. Vasiluk, M. Dutton, M. Bellantino Perco, B. Hale (Univ. Guelph, Canada) Modeling phytoremediation of Ni-elevated soils using <i>Alyssum murale</i> L., Port Colborne, Ontario	Session 1C Metals A Marta Pogrzeba	020 - K.K. Shang, Y. Hu, <u>G. Vincent</u> , M. Labrecque (Shanghai Chenshan Botanical Garden, China) Assessment of ornamental shrub species for tolerance to inorganic contaminants and phytoextraction capacity on a large-scale experimental site
1550-1610		136 - <u>J. Zapata-Carbonell</u> , C. Bégeot, N. Carry, F. Choulet, F. Gillet, O. Girardclos, A. Mouly, M. Chalot (Université de Bourgogne Franche-Comté, France) Natural revegetation of a red gypsum dump		055 - <u>K. Sugawara</u> , M. Uno, C. Inoue, S. Suzuki (Seikei Univ., Japan) Visualization of heavy metal elution behavior of rhizosphere of <i>Arabidopsis halleri</i> ssp. <i>gemmifera</i> by LA-ICP-MS using DGT gel		023 - <u>K.L. Njoku</u> , O.E. Ojo, A.O. Jolaoso (Univ. Lagos, Nigeria) Phytoremediation of soil contaminated with multiple heavy metals using <i>Senna alata</i>
1610-1630		149 - <u>P. Srivastava</u> (Forest Research Inst. Univ., India) Assisted natural regeneration as a tool for ecorestoration of Sal Forest in conflict with urbanization: A case study on <i>Shorea Robusta</i> (Sal) in Dehradun		102 - <u>M. Limmer</u> , S. Webb, A. Seyfferth (Univ. Delaware, USA) Quantitative synchrotron x-ray fluorescence for trace metal(loid) distribution in rice grains		052 - <u>S. Birman</u> , P. Srivastava, K.S. Kapoor (Himalayan Forest Research Inst., India) Phytoremediation efficacy of native flora grown in metal contaminated soils
1630-1650		161 - <u>L.R.M. de Andrade</u> , F.G. Aquino, Z.G. de Miranda, C.D. Pereira, G. Echevarria (Embrapa Cerrados, Brazil) Plant diversity and availability of metals in the ultramafic complexes of de Barro Alto, Go Brazil: tools for the recovery of areas under Ni mining and for phytoremediation of metals		050 - K. Chaudhary, <u>S. Khan</u> (Banasthali Vidyapith, India) Spatial mapping for fluoride contaminated groundwater and soil using geographic information system approach and improvement of phytoremediation efficiency of F hyperaccumulator plant <i>Prosopis juliflora</i> through <i>Pseudomonas fluorescense</i> application		096 - <u>E.F. Jensen</u> , K. Rolt, M. Mos, S. Rusinowski, J. Krzyżak, M. Pogrzeba, B. Perkins, A. Brown, T. Williams, P. Stanley (Aberystwyth Univ., UK) Phytostabilization of lead and zinc contaminated mine spoil using perennial energy crops
1650-1710	Break					

TUESDAY 2 October						
1710-1730	Session 2A Air Stanislaw Gawronski	072 - <u>S.W. Gawronski</u> , M. Wrochna, A. Przybysz, H. Gawronska (Warsaw Univ. Life Sciences, Poland) Indoor Air Phytoremediation	Session 2B Explosives Liz Rylott	135 - <u>E.L. Rylott</u> , L. Zhang, S.E. Strand, T.J. Cary, N.C. Bruce (Univ. York, UK) Using plants to remediate the explosive pollutants TNT and RDX	Session 2C Metals B Alan Baker	063 - <u>S. Mallick</u> (CSIR NBRI, India) Monitoring and assessment of toxic metal accumulation in different crops grown on tannery waste (water and sludge) contaminated agricultural fields and phyto-remediation efficiency of different plants
1730-1750		024 - <u>N. Khalid</u> (Govt. College Women Univ., Pakistan) Study of the responses of two biomonitor plant species to roadside air pollution		087 - <u>P. Manley</u> , J.G. Burken (MUST., USA) Scaling up remote detection of explosives uptake in plants: from the greenhouse to the field		076 - <u>V. Bert</u> , A. Perlein, A. Papin, A. Lounes-Hadj Sahraoui, J. Fontaine, R. Raveau, R. Gaucher (INERIS, France) Metal transfer in aromatic medicinal plants, essential oil and residues focusing on valorization pathways
1750-1810		033 - <u>K. Satinder</u> , K. Rakesh (NEERI, India) Developing indoor air purification device for removal of volatile organic compounds from households		013 - <u>V. Pidlisnyuk</u> , J.Trogl, T.Stefanovska, D.Nebeska, V.Kvak, A.Medkov, P.Shapoval, L. Erickson (Jan Evangelista Purkyně Univ., Czech Republic) Elaboration the phytotechnology for metals contaminated military sites with growing the biofuel crop <i>Miscanthus x giganteus</i>		101 - <u>P. Arora</u> , S. Siciliano, G. Stephenson, B. Hale (Univ. Guelph, Canada) Estimating phytotoxicity of complex metal mixtures in field-contaminated soils: Differentiating contaminant and non-contaminant growth controlling factors
1810-1830		079 - M. Zia-ur-Rehman, <u>M.I. Sohail Akram</u> , S. Ali, M. Umair, M. Rizwan, H.R. Ahmad, A. Mukhtar (Univ. Agriculture, Pakistan) Rippled noise pollution has detrimental impacts on growth of (<i>Zea mays</i> L.) and (<i>Triticum aestivum</i> L.)		042 - Z. Alasmary, G.M. Hettiarachchi, K.L. Roozeboom, <u>L.C. Davis</u> , L.E. Erickson (KSU, USA) Stabilization of lead in a contaminated military site using a second-generation biofuel crop and phosphate-based soil amendments		150 - <u>V.R. Angelova</u> (Agricultural Univ. - Plovdiv, Bulgaria) Phytoremediation potential of <i>Miscanthus x giganteus</i> in soil contaminated with heavy metals
1830-2000	Transport University-Hotels-Gala Dinner Venue					
2000-2330	Gala Dinner					

WEDNESDAY 3 October

0830-0850	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Session 3A General</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Tomas Macek</p>	<p>156 - J. Viktorova, K. Rehorova, L. Ohnoutkova, T. Vlcko, J. Suman, P. Cejnar, J.K. Kumar, <u>T. Macek</u> (Univ. Chem. and Tech., Czech Republic) Plants with improved resistance to stress may be beneficial for food safety</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Session 3B PGPR/Endophytes</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Harrison Atagana</p>	<p>164 - R.O. Anyasi, <u>H.I. Atagana</u>, R. Sutherland (Univ. South Africa Pretoria, South Africa) Characterisation of PAH-degrading endophytes from plants around a crude oil sludge dam in a South African refinery</p>	<p style="text-align: center;">OPEN</p>
0850-0910		<p>036 - <u>G. Bastia</u>, K. Al Souki, C. Liné, B. Pourrut (Yncrea Hauts de France – ISA Lille, France) Phytoremediation studies: comparison between <i>in situ</i> and <i>ex situ</i> experiments results</p>		<p>046 - <u>V. Riva</u>, F. Mapelli, E. Syranidou, N. Kalogerakis, R. Choukr-Allah, S. Borin (Univ. Milan, Italy) Plant growth promoting bacteria in phytodepuration systems: A promising tool to minimize water footprint in agriculture</p>	
0910-0930		<p>092 - <u>J. Vilela</u>, I. Zuazagoitia, A. Albaina, C. Garbisu, J.M. Becerril (Environmental Studies Center, Spain) Green remediation projects for landscape restoration in Vitoria-Gasteiz (Spain)</p>		<p>122 - <u>H. Moreira</u>, S.I.A. Pereira, A.P.G.C Marques, A.O.S.S. Rangel, P.M.L. Castro (Universidade Católica Portuguesa, Portugal) Does soil sterilization and metal spiking affect PGPR selection for phytotechnology purposes?</p>	
0930-0950		<p>126 - <u>C. Frenette-Dussault</u>, P. Benoist, H. Kadri, F. Pitre, M. Labrecque (Université de Montréal, Canada) Beyond experimental plots: An integrative approach to phytoremediation of urban brownfields</p>		<p>142 - H. Moreira, S.I.A. Pereira, A.P.G.C Marques, A.O.S.S. Rangel, P.M.L. Castro (Universidade Católica Portuguesa, Portugal) Are PGPR's traits and the inoculum size relevant for inoculation purposes in mine-affected soils?</p>	
0950-1010		<p>134 - <u>M. Chalot</u>, L. Ciadamidaro, S. Pfendler, C. Zappellini, A. Durand, J. Parelle, F. Tatin-Froux, C. Moyen, D. Blaudez (Université de Bourgogne Franche-Comté, France) Increasing the panel of tree species for the phytomanagement of marginal lands</p>		<p>058 - <u>C. Sirguey</u>, A. Azou-Barré, N. Maurice, D. Blaudez (Université de Lorraine, France) Effect of endophytic fungi on the phytoextraction potential of the hyperaccumulator <i>Noccaea caerulea</i></p>	
1010-1030		<p>OPEN</p>		<p>160 - S.L. Doty, Z. Khan, J. Freeman, A. Firrincieli, C. Cohu, <u>J.G. Burken</u>, C. Munch, R. Zalesny, M. Blaylock (MUST., USA) Endophytic plant-microbe partnerships to improve treatment and tree fitness</p>	

WEDNESDAY 3 October

1030-1050	Break					
1050-1110	<p align="center">Session 4A Nano A</p> <p align="center">Jason White</p>	017 - <u>J.C. White</u> , R. de La Torre-Roche, R. Ma, L. Zhao (CAES, USA) Impact of engineered nanomaterial exposure on peanut (<i>Arachis hypogaea</i>) and cucumber (<i>Cucumis sativus</i>) health and nutritional quality	<p align="center">Session 4B Wetlands A</p> <p align="center">David Tsao</p>	064 - <u>N. Čule</u> , A. Lučić, M. Nešić, Z. Miletić, M. Veselinović, S. Mitrović (Inst. Of Forestry, Serbia) Phytoremediation potential of <i>Canna indica</i> L. and selected decorative macrophytes in FTW	<p align="center">Session 4C Metals/Rads</p> <p align="center">Andrej Piliipovic</p>	040 - B. Malik, T.B. Pirzadah, <u>R. Ul Rehman</u> (Univ. Kashmir, India) Aluminium (Al) and Lead (Pb) induced oxidative stress tolerance in chicory (<i>Cichorium intybus</i> L.)
1110-1130		007 - <u>M. Seghatoleslami</u> , H. Feizi (Islamic Azad Univ., Iran) Silver nanoparticles and magnetic field effects on essential oil yield and composition of <i>Carum copticum</i> under water stress condition		031 - <u>C.P. Muerdter</u> , G.H. LeFevre (Univ. Iowa, USA) Transformation of neonicotinoids in aqueous medium by a synergistic duckweed-microbe system		120 - <u>R. Baraldi</u> , C. Petroselli, E. Gatti, F. d'Acapito (Consiglio Nazionale delle Ricerche, Italy) Manganese, zinc and copper distribution and speciation in plant organs of <i>Populus alba</i> and <i>Salix viminalis</i> with X-ray absorption spectroscopy
1130-1150		010 - <u>H. Feizi</u> , M. Seghatoleslami, M. Heshmati, M. Kowsari, M. Alipanah (Univ. Torbat Heydarieh, Iran) The effect of titanium dioxide nanoparticles on germination and growth indices of oak acorns under drought stress		081 - <u>J. Kisser</u> , G. Vasallo, H. Gattringer (Alchemia-Nova GmbH, Austria) Parameters and performance of grey water recycling of a façade-integrated greening		022 - H. Hong, <u>C. Yan</u> (Xiamen Univ., China) Artificial geomorphic texture cause copper and zinc accumulation: case study at Rudong
1150-1210		025 - X. Wang, <u>W. Sun</u> , S. Zhang, H. Sharifan, <u>X. Ma</u> (SMU and TAMU, USA) Cerium oxide nanoparticles and zinc oxide nanoparticles differently affected arsenic uptake and speciation in rice		085 - <u>J. Fletcher</u> , N. Willby, D.M. Oliver, R.S. Quilliam (Univ. Stirling, UK) Multi-pollutant phytoremediation of eutrophic and metal contaminated water using different combinations of highly competitive emergent macrophytes		127 - <u>P. Kaewtubtim</u> , M. Sulong (Prince of Songkla Univ., Thailand) The natural and man-made radionuclides in Kluai Hin from three southernmost provinces of Thailand
1210-1230		OPEN		154 - M. Bayati, T.L. Ho, D.C.Vu, F. Wang, C. Cuvelier, S. Huebotter, E.C. Inniss, R. Udawatta, S. Jose, <u>C-H. Lin</u> (Univ. Missouri-Columbia, USA) Removing pharmaceuticals and personal care products from treated municipal wastewater by engineered wetlands		001 - <u>R.C. Borges</u> , C.F. Mahlera, H.M.S. de Carvalho, A.V.B. Bernedob (Universidade Federal do Rio de Janeiro, Brazil) Phytoextraction potential of radionuclides from a phosphogypsum stack by the <i>Eupatorium asteraceae</i> , in Imbituba-SC, Brazil
1230-1350	Lunch					

WEDNESDAY 3 October									
1350-1410	Session 5A Nano B	Marta Marmiroli	093 - L. Pagano, E. Maestri, M. Caldara, J.C. White, N. Marmiroli, <u>M. Marmiroli</u> (Univ. Parma, Italy) Engineered nanomaterial activity at the organelle level: impacts on the chloroplasts and mitochondria	Session 5B Wetlands B	Xiaoe Yang	005 - <u>X. Yang</u> , W. Wang, X.Q. Ciu, Z. He (Zhejiang Univ., China) Phytotechnologies for cleaning eutropic waters by enhanced constructed complex wetlands coupled with carbon sequestration	Session 5C Cadmium A	Catherine Sirguey	059 - T. Sterckeman, Y. Cazes, <u>C. Sirguey</u> (Université de Lorraine, France) Breeding the hyperaccumulator <i>Noccaea caerulescens</i> for trace metal phytoextraction: First results of a pure-line selection
1410-1430			053 - <u>A. Noori</u> , J. Colbert, A. Ngo (Merrimack College, USA) Molecular and physiological responses of <i>Solanum lycopersicum</i> L. exposed to silver nanoparticles and silver nitrate			008 - K. Andleeb, <u>I. Hashmi</u> (National Univ. Sci. and Tech., Pakistan) Organic contaminant removal in constructed wetland for wastewater treatment and reuse			138 - Z. Qian, <u>M-F. Chien</u> , Y. H-T. Kohda, N. Kitajima, K. Hayashi, A. Kanayama, C. Inoue (Tohoku Univ., Japan) Cadmium removal from mine drainage using <i>Arabidopsis halleri</i> ssp. <i>gemmifera</i> through hydroponic culture
1430-1450			060 - V. Vijayaraj, C. Liné, A. Elger, M. Barret, F. Mouchet, <u>C. Larue</u> (Université de Toulouse, France) Transfer and ecotoxicity of titanium dioxide nanoparticles in a terrestrial-aquatic continuum: an integrative approach			027 - S. Rimal, A. Karam, J. Chen, <u>D.P. Khasa</u> (Univ. Laval, Canada) Hydrophytoremediation of heavy metals contaminated ecosystems by wetland macrophytes in a mesocosm experiment			047 - <u>C. Lapie</u> , P. Leglize, T. Buisson, C. Paris, T. Sterckeman (Université de Lorraine, France) Metabolites profiling in high and low molecular weight rhizodeposits collected from <i>Zea mays</i> submitted to cadmium stress
1450-1510			083 - <u>C. Line</u> , F. Manent, H. Castillo-Michel, E. Flahaut, C. Larue (Université de Toulouse, France) Evaluation of carbon nanotube impacts on five different crop species using Fourier transformed infrared spectroscopy			080 - <u>J. Kisser</u> , E. Katsou, S. Malamis (Alchemia-Nova GmbH, Austria) HYDROUSA – Demonstration of water loops with innovative regenerative business models for the Mediterranean region			069 - <u>D. Arsenov</u> , M. Župunski, N. Nikolić, M. Borišev, S. Orlović, A. Pilipović, M. Kebert, S. Pajević (Univ. Novi Sad, Serbia) Citric acid as soil amendment in Cd removal by <i>Salix viminalis</i> L.
1510-1530	Break								
1530-1550	Session 6A Nano C	Nelson Marmiroli	131 - D. Imperiale, M. Marmiroli, G. Lencioni, M. Villani, A. Zappettini, J.C. White, <u>N. Marmiroli</u> (Univ. Parma, Italy) The metal hyperaccumulators <i>N. caerulescens</i> and <i>A. halleri</i> have also an enhanced accumulation of metal based nanoparticles	Session 6B Mixed	David Tsao	003 - O.U. <u>Nwosu</u> , C.C. Ibe, C.O. Nwoko, C.O. Chibuike, G. Obichere, U.C. Egbufor (Imo State, Nigeria) Phytoremediation of Pb-antracene co-contaminated soils using <i>Vetiveira zizanioides</i> , <i>Helianthus annuus</i> L., <i>Zea mays</i> and <i>Glycine max</i>	Session 6C Cadmium B	Catherine Sirguey	088 - <u>A. Grignet</u> , A. Lounes-Hadj Sahraoui, V. Bert (INERIS, France) Phytoextraction with <i>Arabidopsis halleri</i> intercropped with <i>Salix viminalis</i> to redevelop metal contaminated urban area
1550-1610			103 - C. Ma, Y. Hao, Z. Zhang, T. Zhou, Y. Rui, B. Xing, <u>J.C. White</u> (CAES, USA) Use of engineered nanomaterials to suppress diseases in crop plants			002 - N. Jeelani, W. Yang, <u>S. An</u> (Nanjing Univ., China) Phytoremediation potential of <i>Xanthium sibiricum</i> in co-contaminated soils			006 - <u>Z. Zgorelec</u> , N. Bilandzija, K. Knez, M. Galic, S. Zuzul (Univ. Zagreb, Croatia) Cd and Hg phytoremediation from soil using <i>Miscanthus x aiaqanteus</i>

WEDNESDAY 3 October

1610-1630	Session 6A Nano C	Nelson Marmiroli	110 - <u>O.P. Dhankher</u> , C. Ma, B. Xing, J.C. White, S. Long, R. Minocha (Univ. Massachusetts Amherst, USA) Metal-based engineered nanoparticles toxicity in crops and their impact on global food security and safety			OPEN		OPEN
1630-1650			130 - <u>R. De la Torre-Roche</u> , C. McMahon, L. Pagano, S. Majumdar, B.D. Eitzer, N. Zuverza-Mena, C. Ma, A.D. Servin, N. Marmiroli, O.P. Dhankher, J.C. White (CAES, USA) Co-exposure of Imidacloprid and weathered or unweathered Ag nanoparticles to <i>Cucurbita pepo</i> (Zucchini): Contaminant bioaccumulation and translocation			OPEN		OPEN
Poster Session - Student Judging (Barbara Zeeb, lead)								
1650-1830	015 - Ch. Nurzhanov (Al-Farabi Kazakh National Univ., Kazakhstan)							
	Mathematical model for growing <i>Miscanthus x giganteus</i> at the soil contaminated by xenobiotics							
	016 - A. Nurzhanova (Inst. of Plant Biology and Biotechnology, Kazakhstan)							
	Using of <i>Miscanthus x giganteus</i> for phytoremediation of the contaminated soil: case of military and mining sites							
	018 - C.O. Ogunkunle (University of Ilorin, Nigeria)							
	Preferential tissue accumulation and synchrotron-based evidence of Cu biotransformation in cowpea grown on copper nanoparticles-amended soil							
	019 - C. Garbisu (NEIKER-Basque Inst. of Agricultural Research and Development, Spain)							
	Beneficial effects of phytomanagement options on soil structural and functional microbial biodiversity							
	039 - W. Meeinkuirt (Mahidol Univ., Thailand)							
	Influences of soil amendments on Cd uptake and accumulation by two commercial Thai rice varieties, Chorati and Mali Deang							
075 - A. Cerdeira-Pérez (Instituto de Investigaciones, CSIC, Spain)								
Bioprospection of plant and microbial communities in two abandoned mine areas aimed to phytomining of strategic elements								
082 - J. Kisser (Alchemia-nova GmbH, Austria)								
Innovative circular solutions and services with nature-based solutions for new buildings and refurbishments								
084 - B. Ayati, H. Ganjidoust, F. Fallahi, S. Rezamand (Tarbiat Modares Univ., Iran)								
Lab scale study of nitrogen and phosphorous removal by phytoremediation								
097 - R. Akre (Univ. Guelph, Canada)								
Reliable quantification of NZVI in soil and soil solution for phytotoxicity testing								
098 - L. Vasiluk (Univ. Guelph, Canada)								
Remediation of Ni toxicity by liming or deep-tilling - Field validation								
099 - A. Burges (Bordeaux Univ., France)								
Long-term phytomanagement influences structural diversity of microbial communities in a Cu-contaminated soil at a wood preservation site								
108 - B.S. DeBauche (MUST, USA)								
Using poplars and willows to reduce runoff at landfills in the Lake Superior and Lake Michigan watersheds of the United States								

WEDNESDAY 3 October

Poster Session - Student Judging (Barbara Zeeb, lead)

1650-1830

- 117 - M. Mench (Bordeaux Univ., France)
Rhizofiltration of a Bordeaux mixture effluent in pilot-scale constructed wetland using *Arundo donax* and production of a Cu-rich root mat for ecocatalysis
- 123 - E.G. Papazoglou (Agricultural Univ. Athens, Greece)
Marginal land for growing industrial crops: turning a burden into an opportunity – MAGIC project
- 124 - E.G. Papazoglou (Agricultural Univ. Athens, Greece)
Potential use of four energy crops for the phytoremediation of trace element contaminated soils
- 129 - G. Echevarria (Université de Lorraine, France)
Discovery of new metal hyperaccumulators with 'XRF Herbarium Ionomics' in Sabah (Malaysia, Borneo Island)
- 141 - S.I.A. Pereira (Universidade Católica Portuguesa, Portugal)
Phytotechnologies in degraded soils - the example of Borralha mine in Portugal
- 144 - D. Blaudez (Université de Lorraine, France)
Accumulation and localization of rare earth elements in ferns
- 146 - T. Dimitrova (Brandenburg Univ. of Technology, Germany)
Degradation of ferrocyanide by natural isolated bacteria
- 147 - D. Imperiale (Univ. Parma, Italy)
Proteomic analysis of metals and nonmetals hyperaccumulators *N. caerulea* and *A. halleri* reveals different mechanisms are involved
- 152 - R.S. Oliveira (Univ. Coimbra, Portugal)
Using beneficial microorganisms to facilitate phytoremediation of mine soil
- 155 - P.M. Gómez de la Serna (Technical Univ. Madrid, Spain)
Early establishment of hybrid poplars at landfills around the Great Lakes Basin
- 157 - C. Monterroso (Universidade de Santiago de Compostela, Spain)
Rehabilitation of contaminated copper mine soils through phytomanagement options using residue-based amendments: A greenhouse experiment
- 158 - C. Monterroso (Universidade de Santiago de Compostela, Spain)
Dynamics of soil organic matter in mine soils phytostabilised using organic-waste amendments and grass species
- 162 - E. Manousaki (Technical University of Crete, Greece)
Contribution of microbial community associated with *Juncus acutus* L. in metal removal in constructed wetlands treating municipal wastewater
- 163 - E. Manousaki (Technical University of Crete, Greece)
Removal efficiency of a halophyte-based constructed wetland mesocosm for heavy metal polluted wastewater treatment

1830-2000

IPS Society Business Meeting
(IPS Members Only)

THURSDAY 4 October

0830-0850	Session 7A Phyto Products	Frederic Pitre	<p>035 - <u>F.E. Pitre</u>, E. Sas, W. Guidi Nissim, N.J.B. Brereton, K.K. Shan, S. Mancuso, E. Azzarello, P. Benoist, G. Vincent, M. Labrecque (IRBV/Montreal Botanical Garden and University de Montreal, Canada) The potential of economically viable integrated platform for biofuel and bioproducts phytoremediation, in Canada, Italy and China</p>	Session 7B Organics A	Mehmet Isleyen	<p>153 - <u>M. Isleyen</u>, O. Karatas, A. Aygun (Bursa Technical Univ., Turkey) Enhanced dissolution and uptake of p,p'-DDE in soil</p>	Session 7C Nickel	Guillaume Echevarria	<p>140 - M. Konstantinou, D. Kyrkas, G. Karras, G. Patakioutas, I. Tsirogiannis, A. Tognacchini, M. Puschenreiter, E. Benizri, M.O. Simonnot, J.L. Morel, <u>G. Echevarria</u> (Université de Lorraine, France) First field trials for nickel agromining by <i>Alyssum murale</i>, <i>Bornmuellera tymphaea</i> and <i>Leptoplax emarginata</i> in Northern Greece</p>
0850-0910			<p>032 - J. Wei, <u>C. Tu</u>, G. Yuan, Y. Luo (Yantai Inst. of Coastal Zone Research, CAS, China) Characterization and copper binding properties of dissolved organic matter derived from Jerusalem artichoke stalk biochar</p>			<p>112 - <u>W. Ren</u>, Y. Wang, Y. Ten, W. Ma, Z. Li, Y. Luo (Inst. of Soil Science, CAS, China) Dissipation variability of di (2-ethylhexyl) phthalate in the rhizosphere of alfalfa at a millimeter scale and associated microbial mechanism</p>			<p>074 - <u>A. Cerdeira-Pérez</u>, C. Monterroso, M.B. Díaz; G. Machinet; G. Echevarria, Á. Prieto-Fernández; P. Kidd (Instituto de Investigaciones, CSIC, Spain) Implementing nickel phytomining in a serpentine quarry (NW Spain) and its optimization using organic wastes as soil amendments</p>
0910-0930			<p>038 - <u>N. Bilandžija</u>, M. Grubor, Ž. Zgorelec, T. Krička (Univ. Zagreb, Croatia) The potential use of biomass cultivated on contaminated soil via combustion process: <i>Miscanthus x giganteus</i> case</p>			<p>113 - <u>Y. Teng</u>, W. Ren, Z. Fu, M. Sun, Y. Luo (Inst. of Soil Science, CAS, China) Phytoremediation of PAH-contaminated soil by intercropping alfalfa (<i>Medicago sativa</i> L.) with tall fescue (<i>Festuca arundinacea</i> Schreb.) and associated soil microbial activity</p>			<p>061 - <u>R.F. Saad</u>, G. Echevarria, B. Rodríguez-Garrido, P.S. Kidd, E. Benizri (Université de Lorraine, France) A two-year field study of nickel-agromining using <i>Odontarrhena chalcidica</i> co-cropped with a legume: temporal variation in plant biomass, nickel yields and taxonomic and bacterial functional diversity</p>
0930-0950			<p>095 - <u>M.T. Javed</u>, M. Hussaan, S. Adeel, N. Iqbal (Government Colleg Univ., Pakistan) Microwave assisted sustainable extraction and dyeing of cotton fabric by using <i>Sesbania rostrata</i> L. as a source of natural colorant</p>			<p>115 - <u>A. Pilipović</u>, S. Rončević, S. Đurić, N. Nikolić, S. Orlović, S. Pekeč, M. Katanić, D. Arsenov, D. Stamenov, J. Beljin (Univ. Novi Sad, Serbia) Growth, physiology and phytoremediation potential of poplars grown on diesel fuel contaminated soils amended with indigenous microorganisms</p>			<p>062 - S. Lopez, X. Goux, G. Echevarria, M. Calusinska, J.L. Morel, <u>E. Benizri</u> (Université de Lorraine, France) Community diversity and potential functions of rhizosphere-associated bacteria of nickel hyperaccumulators found in Albania</p>

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0950-1010	Session 7A Phyto Products Frederic Pitre	106 - <u>A. Ibrar</u> (Mehsum Foundation School, Pakistan) Bioplastic from Starch	Session 7B Organics A Mehmet Isleyen	151 - <u>M. Ben-Israel</u> , J.G. Burken, R. Aravena, B.L. Parker, D.T. Tsao, E.A. Haack, K.E. Dunfield (Univ. Guelph, Canada) MMBTs: Metagenomic Molecular Biological Tools to assess phytoremediation of petroleum hydrocarbons in complex geological environments	Session 7C Nickel Guillaume Echevarria	078 - <u>M.I. Sohail Akram</u> , M. Zia-ur-Rehman, M. Rizwan, M. Ali, S. Ali, M. Sabir, R.A. Hassan (Univ. Agriculture, Pakistan) Nickel mobility is differentially affected by exogenous calcium sources in Ni contaminated-salt affected soils
1010-1030		116 - <u>M. Mench</u> , N. Oustrière, L. Marchand, M. Dellise, S. Matin, A. Fichou, T. Lafargue, A. Darroman, R.G. Lacalle, A. Burges, B. Castagneyrol, S. Jouveau, A. Sæbø, T. Persson, H.M. Hanslin, M. Høglind, M.L. Edvardsen, H. Sørli, P. Schröder, M. Obermeier, W. Szulc, B. Rutkowska, J. Vangronsveld, N. Witters, B. Beckers, F. Rineau, S. Daniels, H. Olcay, R. Malina, R. Millán, T. Schmid, M.J. Sierra, Ch. Poschenrieder, N. Marmioli, E. Maestri, R. Reggiani, J.A. López Gonzalez, G. Bidar, F. Douay (Bordeaux Univ., France) Intensify production, transform biomass to energy and novel goods and protect soils in Europe (INTENSE): Progress in year 2		114 - <u>J.A. Dominguez</u> , M.F. Chien, C. Inoue (Tohoku Univ., Japan) Enhancement or inhibition: Understanding the role of plant root exudates in bacterial polycyclic aromatic hydrocarbons degradation using Sudangrass		128 - P.N. Nkrumah, R. Tisserand, J.L. Morel, A.J.M. Baker, <u>G. Echevarria</u> , P.D. Erskine, A. van der Ent (Université de Lorraine, France) Optimization of nickel agromining with two tree species from Sabah (Malaysia): From nutrient dosing experiments to field plot applications
1030-1050	Break					
1050-1110	Session 8A Biochar/OM Elena Maestri	125 - M. Marmioli, U. Bonas, D. Imperiale, G. Lencioni, F. Mussi, N. Labartino, S. Piccinini, N. Marmioli, <u>E. Maestri</u> (Univ. Parma, Italy) Biochar potential as soil improver depends on structural and functional features related to biomass origin and production process	Session 8B Organics B Yongming Luo	133 - <u>Y. Luo</u> , L. Li, Q. Zhou (Yantai Institute of Coastal Zone Research, CAS, China) Uptake and translocation of microplastic beads in lettuce	Session 8C Copper Michel Mench	119 - <u>M. Mench</u> , M. Dellise, L. Marchand, A. Kolbas, P. Le Coustumer, N. Oustrière (Bordeaux Univ., France) Long-term phytomanagement and remediation of Cu-contaminated soils by high yielding crops at a former wood preservation site: Sunflower biomass and ionome

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1110-1130	Session 8A Biochar/OM Elena Maestri	014 - <u>M. Teodoro-Tenango</u> , E. Ferrer-Bustins (Czech Univ. Life Sciences of Prague, Czech Republic) Effects of nano zero-valent iron and biochar on seed germination of potential phyto-stabilizing species	Session 8B Organics B Yongming Luo	148 - S Subramanian, R. Tehrani, <u>B. Van Aken</u> (George Mason Univ., USA) Hydroxylated polychlorinated biphenyls (OH-PCBs) inhibit brassinosteroid synthesis in <i>Arabidopsis</i>	Session 8C Copper Michel Mench	100 - <u>S. Matin</u> , N. Oustrière, W. Szulc, B. Rutkowska, T. Persson, M. Mench (Bordeaux Univ., France) Phytomanagement of a Cu-contaminated soil within the EU INTENSE project: Assessment of organics amendments and barley
1130-1150		118 - <u>M. Mench</u> , C. Garbisu, A. Burges, J. Urra, L. Epelde, C. Trasar, B. Rodríguez-Garrido, L. Marchand, N. Oustrière, S. Matin, M. Dellise, Á. Prieto-Fernández, C. Monterroso, P.S. Kidd (INRA-Univ. Bordeaux, France) Phytomanaging metal(loid)-contaminated sites using high-biomass plants and organic amendments improves soil physico-chemical properties, microbial activity and diversity		077 - <u>A.E. Futughe</u> , H. Jones, D. Purchase (Middlesex Univ., UK) A novel technology of solarization and phytoremediation enhanced with biosurfactant for sustainable treatment of PAH-contaminated soil		145 - <u>G. Andrejić</u> , T. Rakić, M. Prica, Ž. Dželetović (Inst. for the Application of Nuclear Energy, Serbia) The effects of nitrogen fertilization on Cu uptake and distribution as well as biomass yield of <i>Miscanthus × giganteus</i> plants grown on flotation mine tailings
1150-1210		OPEN		109 - <u>H. Megloul</u> , J. Fontaine, M. Magnin-Robert, B. Tisserant, M. Hijri, A. Lounès-Hadj Sahraoui (Université du Littoral Côte d'Opale, France) Influence of arbuscular mycorrhizal inoculum sources on phytoremediation efficiency of a historically dioxin/furan-contaminated soil		012 - <u>A.R. Memon</u> , N. Merakli (Usak Univ., Turkey) Cu and Cd induced gene expression in metal accumulator plant <i>Brassica nigra</i>
1210-1330		Lunch				

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1330-1350	<p>Session 9A Processes</p> <p>Muhammad Tariq Javed</p>	<p>094 - <u>M.T. Javed</u>, S. Hashmat, K. Tanwir, Q. Ali, M. Sohail Akram (Government College Univ., Pakistan)</p> <p>Biologically treated wastewater fertigation confer the growth and yield enhancement to pea (<i>Pisum sativum</i> L.) – a sustainable perspective</p>	<p>Session 9B Salts/Nutrients</p> <p>Om Parkash Dhankher</p>	<p>111 - <u>O.P. Dhankher</u>, G. Singh, P. Tomar, A. Dixit (Univ. Massachusetts Amherst, USA)</p> <p>Novel-Stress Associated Proteins for Enhanced Tolerance to Multiple Abiotic Stresses and Improved N Use Efficiency in Plants</p>	<p>Session 9C Arsenic</p> <p>Lena Ma</p>	<p>045 - <u>L. Ma</u> (Southwest Forestry Univ., China and Univ. Florida, USA)</p> <p>Phytoremediation of arsenic-contaminated soils: molecular mechanisms and field application</p>
1350-1410		<p>009 - <u>H. Feizi</u>, A. Hosseini, M. Seghatoleslami (Univ. Torbat Heydarieh, Iran)</p> <p>Determining of the released organic compounds by saffron on soil with different ages</p>		<p>091 - M. Tafazzoli, <u>H. Ganjidoust</u>, B. Ayati (Tarbiat Modares Univ., Iran)</p> <p>Study of soluble sulfate removal using phytoremediation</p>		<p>026 - F. Dou, <u>X. Ma</u>, <u>W. Sun</u> (TAMU and SMU, USA)</p> <p>Effects of elevated oxidizing compounds in irrigation water on arsenic uptake and speciation in rice tissues and implications for phytoremediation</p>
1410-1430		<p>021 - <u>T.B. Pirzadah</u>, B. Malik, R. Ul Rehman, I. Tahir (Univ. Kashmir, India)</p> <p>Aluminium stress modulates the osmolytes and enzyme defense system in <i>Fagopyrum</i> species</p>		<p>028 - <u>S. Newete</u>, S. Allem, N. Venter, M. Byrne (ARC-ISCW, South Africa)</p> <p>The efficiency of <i>Tamarix</i> genotypes in salt excretion in South Africa</p>		<p>070 - <u>C. Yang</u>, M-F. Chien, C. Inoue (Tohoku Univ., Japan)</p> <p>Efficient arsenic phytoremediation by co-culture of <i>Pteris multifida</i> with a multifunctional rhizobacterium</p>
1430-1450		<p>089 - <u>K. Rabeh</u>, B. Belkadi, A. Filali-Maltouf, L. Sbabou (Mohammed V Univ. of Rabat, Morocco)</p> <p>Drought tolerance in <i>Arganiaspinosa</i> L. skeels: a candidate gene approach for the amplification of the aquaporin gene</p>		<p>044 - <u>B.A. Zeeb</u> (RMC, Canada)</p> <p>Plant-based solutions for remediating salt-contaminated sites in Canada</p>		<p>071 - S. Wei, <u>M-F. Chien</u>, Y. Huang-Takeshi Kohda, C. Inoue (Tohoku Univ., Japan)</p> <p>Gene expression of a phosphate transporter and an arsenate reductase in <i>Pteris vittata</i> during arsenic uptake</p>
1450-1510		<p>OPEN</p>		<p>056 - <u>L.C. Davis</u> (KSU, USA)</p> <p>Limits on growing <i>Tamarix</i> species (saltcedar) to produce cellulosic material using water with high salt and boron : how much is too much?</p>		<p>121 - R. Baraldi, <u>C. Petroselli</u>, F. d’Acapito, P. Piccoli (Università degli Studi di Perugia, Italy)</p> <p>An X-ray absorption spectroscopy investigation of arsenic uptake and accumulation in grapevine plantlets in relation to plant growth promoting rhizobacteria</p>
1510-1530	<p>Break</p>					

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1530-1550	Closing Plenary David Tsao, Andrej Pilipovic	In Memoriam - Jean-Paul Schwitzguebel
1550-1650		Awards Ceremony Student Competitions Distinguished Service Stephen D. Ebbs Award
1650-1710		Announcements Special Issue of IJP 2019 IPC16 Venue
1710-1730		Closing Remarks / Field Tour Instructions
1730-1750		Break / Adjourn
1750-2000		IJP Editorial Board Meeting (IJP Editors Only)