

International Phytotechnology Conference 23 - 26 May 2023

Argonne National Laboratory - Advanced Photon Source (APS) Conference Centre

Tuesday 23rd May 2023

Start Time	End Time			
9:45		Coffee break (signposted at APS)		
9:00	11:45	Registration in APS lobby + Tours of the APS Facility		
11:45	13:00	Lunch in the APS Gallery (lower level)		
13:00	13:30	Auditorium - Conference Opening - David Tsao & John Quinn		
13:30	13:45	Auditorium - Milton P. Gordon Award for Excellence in Phytoremediation Research - Barb Zeeb		
13:45	14:30	Auditorium Opening Plenary by Gordon Award's Recipient		
14:30	15:00	Coffee Break & Networking Session - The Gallery		
		Auditorium	Poplar Room	Willow Room
Session 1		Phytobiome Interactions	Phytotechnology Using Halophytes	Landfill & Evapotranspiration Covers
Chair		J. Freeman	B. Zeeb	L. Licht
15:00	15:20	E. Murray The Multitude of Uses for Plant Growth Promoting Bacteria in Soil Remediation and Site Management	L. Nawroth* Turning A New Leaf on Salinization: Phytoremediation of Contaminated Soils Using Halophytes	E. McCleary Design, Implementation, and Approval of Evapotranspiration Covers in Puerto Rico
15:20	15:40	H. Atagana Role of enzymes in endophytes-assisted phytoremediation of PAH-contaminated soil	B. Zeeb Development of a Model for the Dispersal of Salts from Recretholophyes	L. Licht Phyto treatment of solvents in ground water pumped and irrigated into poplar covers: project results
15:40	16:00	J. Langrand* Interest of angelica cultivation and mycorrhizal inoculation for the phytomanagement of trace element-polluted soil: a long-term field study	B. Harding Halophyte Phytoremediation and Use of Molecular Biological Tools Support Consent Order Termination at a Pipeline Spill in Rural Idaho	E. Rogers* Chemical profiling of contaminants in landfill leachate using a global metabolomics approach
16:00	16:20	R. Simmer* Bioaugmented Phytoremediation to Treat 1,4-Dioxane Contaminated Groundwater	E. Haack Reclamation of Salinity-Impacted Sites: Defining healthy soil communities for successful revegetation	M. Alberts Application of Genomics to Enhance Constructed Wetland Treatment Systems for Oil Sands Process-Affected Water
16:20	17:30	Group 1 Poster & Networking Session - The Gallery		
18:30		Dinner at Guest House (Speaker during dessert - Dr. David Tsao)		

*student speaker

Wednesday 24th May 2023

Start Time	End Time	Auditorium	Poplar Room	Willow Room
Session 2		Metals and Metalloids	POPs with Herbicides & Insecticides	Large Scale Field Case Studies
Chair		E. Maestri	M.C. Affholder	M. Labreque
9:00	9:20	E. Maestri Combination of Biochemical, Molecular, and Synchrotron-Radiation-Based Techniques to Study the Effects of Silicon in Tomato (<i>Solanum Lycopersicum</i> L.)	N. Sooksawat Phytoremediation potential of sunn hemp, sunflower and marigold in hydroponic system for carbaryl contamination	M. Labreque The challenges in assessing large-scale phytoremediation project efficacy
9:20	9:40	C. Tu Cadmium Accumulation and Phytoremediation Potential of Two Tobacco Species in Lightly Contaminated Farmland Soils	M.C. Affholder Phytoextraction of dieldrin from a historically contaminated site: focus on accumulation and distribution in various plant species	M. Mench Phytomanagement of contaminated areas in the Southwest European region (Phy2SUDOIE)
9:40	10:00	A.L. Ariyanti* The Leachability of <i>Arabidopsis halleri</i> ssp. <i>gemmifera</i> Root Exudate Solution Compared with Synthetic CaCl ₂ for Soil Remediation	A. Varuni* Rapid-Throughput Analysis of 1,4-Dioxane in Plants by Centrifugal Sampling and Phytoforensic Analysis for Site Delineation and Assessing Enhanced Rhizodegradation	E. Murray The Logistics of Implementing Phytotechnologies on a Large Scale – An Environmental Industry Perspective
10:00	11:00	Coffee + Group 1 Poster & Networking Session - The Gallery		
Session 3		Metals and Metalloids cont.	POPs Cont. with Radionuclides & Explosives	Long Term Field Studies
Chair		M. Mench	E. Rylott	J. Quinn

11:00	11:20	M. Pogrzeba <i>Miscanthus</i> for Heavy Metal Contaminated Areas - Polish Case Study - Current Status and Future Perspectives	R. Woodfin* Characterising TNT glutathione-conjugate metabolism using transgenics and a modified non-aqueous fractionation technique	E. Haack Long-Term Study of Phytoremediation Efficacy in Fractured Bedrock
11:20	11:40	M. Mench Optimizing phytomanagement strategies for a metal-contaminated soil to provide biomass for clean biofuel production	E. Rylott Field trials testing the efficacy of switchgrass to remediate explosives pollution from military training ranges	J. Quinn Lessons Learned from a Challenging, Long-Term Phyto Project
11:40	12:00	M. Al-Lami Interactive effect between prairie-native mycorrhizal fungi inoculation and co-application of biochar and biosolids on	N. Vanhoudt Earthworm-mediated increase of potential bioavailability of metal(loid)s and radionuclides for phytoremediation of contaminated soils	K. Waltermire Lessons Learned from Mature Phyto Plots: Reviving Mature Plots and Considerations for New Design
12:00	13:20	Lunch + Group 1 Poster Takedown & Group 2 Poster Set-up		
Session 4		Metals and Metalloids & Pharmaceuticals	POPs Cont. with PFAS	Long Term Field Studies Cont.
Chair		M. Limmer	A. Noori	F. Pitre
13:20	13:40	M. Limmer Synchrotron techniques for studying rice accumulation of arsenic	J. White Nanoparticle-enhanced PFAS phytoremediation	D. Burge Pivot to Phytoremediation to Successfully Close a Legacy Chlorinated VOC Site
13:40	14:00	L. P. Rodriguez Hernandez Bioaccumulation and translocation of arsenic and cadmium in <i>Cucumis melo</i> (melon) crops	A. Noori Physiological Responses of <i>Phaseolus vulgaris</i> to PFAS	R. Gestler Engineered Phytoremediation for Source Zone Control at a DNAPL-Impacted Site
14:20	14:40	E. Rylott Adding value to metal-rich plant biomass	G. Cohen Response of vegetative and reproductive organs of Cucurbita pepo L. subsp pepo 'Allegría' to aged Dieldrin contamination according to soil concentration and plant	J. Freeman Eight Years of Using Endophyte Assisted Phytoremediation Systems for Contaminated Ground Water Removal and <i>In-situ</i> Degradation
14:40	15:00	T. Adesanya Characterizing the phytoextraction of sulfamethoxazole and ciprofloxacin using cattail and switchgrass	M. C. Affholder Phytoextraction of dieldrin from a historically contaminated: focus on accumulation and distribution in various plant species	R. Vinhal Phyto-Recurrent Selection: A Best Practice for Selecting Superior Genotypes for Environmental Applications
15:00	15:20	Coffee & Group Photograph		
Session 5		Auditorium Careers Panel Discussion		
15:20	15:35	Industry - Elizabeth Haack, Kate Kennen, Louis Licht, David Tsao, Barry Harding		
15:35	15:50	Academia - Joel Burken, Azam Noori, Liz Rylott, Barb Zeeb, Chen Tu		
15:50	16:05	Government - Heather Henry, Emily McLeary, John Quinn, Steve Rock, Jim Landmeyer		
16:05	17:00	Group 2 Poster & Networking Session - The Gallery		
17:00	18:00	Guest House Patio - International Phytotechnologies Society (IPS) Meeting		
18:30		Dinner at Guest House (Speaker during dessert - K. Kennen)		

*student speaker

Thursday 25th May 2023				
Start Time	End Time	Auditorium	Poplar Room	Willow Room
Session 6		Metals and Metalloids Cont.	Phytoremediation of Petroleum Hydrocarbons	Nanoparticle Plant Interactions
Chair		O. Parkash	J. Quinn	M. Marmioli
9:00	9:20	O. Parkash Developing Strategies for Phytoremediation and Limiting Arsenic Accumulation in Rice	P. Roy* Rhizodegradation of Petroleum Hydrocarbon Contaminated Soils Using Native Plants, Fungi, and Bacteria	J. White Nanobiotechnology-based Strategies for Creating Climate Resilient Crops
9:20	9:40	J. Kiunga* Characterization of Arsenate Reductase 2 (ACR2) genes from Arabidopsis and Crambe for Their Roles in Phytoremediation of Environmental Arsenic	J. Trögl Phytoremediation of petroleum-polluted soils with energy grass <i>Miscanthus x giganteus</i>	M. Marmioli The fate of CdS quantum dots in plants as revealed by extended X-ray absorption fine structure (EXAFS) analysis
9:40	10:00	A. Fremont* Root exudate-mediated arsenic tolerance in white lupin and willow: transitioning from controlled environments to complex real-world soils	J. Quinn A Natural Approach to PAH Remediation and Habitat Restoration	S. Sharma* Nanoscale sulfur alleviates silver nanoparticle toxicity and improves seed and oil yield in Soybean (<i>Glycine max</i>)

10:00	10:20	M. Pogrzeba Self-sustainable, smart module for city green infrastructure in climate change adaptation – Mod4GrIn project in theory and practice	J. Burken Understanding Plant Translocation of Emerging and Fugitive Compounds Using Intelligent Techniques - AI Methods for Food Security and Biosensing	M. Marmioli Protein Analysis of <i>A. halleri</i> and <i>N. caerulescens</i> Hyperaccumulators When Exposed to Nano and Ionic Forms of Cd and Zn
10:20	11:20	Coffee + Group 2 Poster & Networking Session - The Gallery		
Session 7		Phytoremediation & Ecosystem Services	POPs Cont. with Plastics & PCBs	Long Term Field Case Studies Cont.
Chair		R. Zalesny	B. Van Aken	J. Landmeyer
11:20	11:40	C. Zumpf Application of Shrub Willow Buffers for Nutrient Reduction in Agricultural Fields	Y. Luo Effective uptake mode and quantitative tracing of submicrometre plastics in plants	L. Licht PhAGR reactor for tertiary treatment of water pollutants at RV park - 3 year report
11:40	12:00	B. Gervais-Bergeron* Willow Aboveground and Belowground Traits Can Predict Phytoremediation Services	M.T. Bryant* Examining the uptake of nanoplastics and xenobiotics as co-contaminants by a representative agricultural crop <i>Lactuca sativa</i> (lettuce)	J. Landmeyer Pump and Treet: USGS and EPA Results from Pilot-Scale Sites, 2018 to 2023
12:00	12:20	R. Zalesny Ecosystem services, physiology, and biofuels recalcitrance of poplars grown for landfill phytoremediation	B. Van Aken Chemometric and transcriptomic analysis of <i>Arabidopsis thaliana</i> exposed to environmental contaminants	V. Pidlisnyuk Miscanthus x giganteus phytotechnology for contaminated post-military land with production of biomass for bioproducts
12:20	12:40	A. Bailey Partnering Agricultural Decarbonization and Ecosystem Services Provided by Biomass	F. Pitre Are Willows Used for Phytofiltration Affected by Emerging Contaminants Found in Water?	T. Adesanya Phosphorus mobilization from biosolids pore water under simulated flooding during terrestrial phytoremediation using cattail
12:40	13:40	Lunch		
Session 8		Auditorium - Finale		
Chair		David Tsao		
13:40	14:40	Awards Ceremony - Ebbs (presented by J. White), Practitioner (presented by D. Tsao) & Student (presented by B. Zeeb)		
14:40	15:00	Friday Field trip briefing (presented by L. Licht)		
15:00	15:20	In Memoriam, Mike Blaylock & Edd Gatliff (by Cristina Negri)		
15:20	15:40	IPC Election Results (L. Newman) & IPC 2024 Introduction & Closing Remarks (IPS Outgoing President D. Tsao)		
15:40	16:00	Coffee break		
16:00	17:00	International Journal of Phytoremediation (IJP) Meeting		
18:30		Dinner at Guest House (Special presentation TBA)		

Friday 26th May 2023

Start Time	End Time	
8:00	12:00	Tour Hosted by Lou Licht (Bus Departs Guest House at 8 am)

* student speaker

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Group 1 Posters		
1	Chen Tu	Effects of Microplastics on Growth and Physiology of Wheat under Different Temperature and Humidity Conditions
2	Chen Tu	Heterologous expression of PvACR3 regulated by root-specific promoter pLsi1 in rice (<i>Oryza sativa</i> L.) to create high As accumulation plant for phytoremediation
3	Sigurdur Greipsson	Impact of Indigenous Soil Microorganisms on Metal Uptake of Switchgrass (<i>Panicum virgatum</i> L.) Grown at High Levels of Lead (Pb)
4	Sigurdur Greipsson	Phytoextraction of lead (Pb) contaminated soil by switchgrass (<i>Panicum virgatum</i> L): Impact of BAP and NTA applications
5	Ronald Zalesny	Growth, physiology, and phytoextraction potential of poplars grown for phytoremediation of soils impacted by copper, manganese, and boron
6	Qifan (Leo) Yin	<i>Noccaea caerulescens</i> : A bibliometric analysis of a small yet remarkable hyperaccumulator
7	Liz Rogers*	Bioremediation-phytoremediation of sulfur in the environment: an integrated approach
8	Liz Rogers*	Water relations of three poplar clones grown for phytoremediation of a waste dumping site
9	Liz Murray	The Potential for Using Native Plants in <i>In Situ</i> Remediation
10	Shu-Yu Hsu*	Biomarkers Selection for Population Normalization in SARS-CoV-2 Wastewater-based Epidemiology
11	Shu-Yu Hsu*	Developing A Novel Spore-based Biocatalyst Enzyme Delivery System for Remediation of Atrazine in Riparian Buffer Systems
12	Barry Harding	Drone-Based Phytoremediation Reconnaissance Using NDVI/NIR Multispectral Imagery at a Historical Waste Storage Landfill
13	Eugene Yan	Review of a large-scale, long-term phytoremediation site: effective risk management and social and environmental benefits
14	Mariam Al-Lami	Screening native/indigenous species for tolerance to Pb/Zn/Cu tailings and using image-based analysis as a new assessment approach
15	Mariam Al-Lami	Enhanced Restoration of Mine Tailings: Role of Waste By-products in Sustainable Revegetation with Ecologically Viable Native Species
16	Valentyna Pidlisniuk	Enhanced <i>Miscanthus</i> growth in naturally trace elements contaminated soils by application of the Plant Growth Regulators
17	Valentina Pidlisnyuk	Biochar-supported phytoremediation of soils complexly contaminated with trace elements and high HCH isomers using <i>Paulownia tomentosa</i>
18	Valentina Pidlisnyuk	Improving <i>Miscanthus x giganteus</i> phytoremediation efficiency and adaptability to trace elements by application of PGPRs
19	Fazal Hadi	Nanoparticles and CBF/DREB genes play key role in bioactive compounds production and lead (Pb) phytoremediation
20	Violina Angelova	<i>Miscanthus x giganteus</i> as a biofuel crop for phytoremediation of heavy metal contaminated soils
21	Lucia Rodriguez	Bioaccumulation and translocation of arsenic and cadmium in <i>Cucumis melo</i> (melon) crops
22	Radhika Bansal	Assessing the Hyperaccumulation Capacity of <i>Vigna aconitifolia</i> and <i>Vigna radiata</i> for Phytoremediation of Lead
23	Walter Abo Acha	Phytodiversity Adaptation and Mitigation: An Ecolinguistic Study of Climate Change Awareness in the Cameroon Press
24	F. Hussain	Effects of Zinc Oxide nanoparticles on antioxidants, chlorophyll contents and proline in <i>Persicaria hydropiper</i> L. and its potential for Pb phytoremediation

25	Jiapan Lian	Tailored ZnO nanoparticles improve grain yield, zinc biofortification and Cd mitigation in wheat (<i>Triticum aestivum</i>)
26	L. Cheng	Combined Use of CaCl ₂ and Nanoparticle Foliar Spray Improved the Growth of Faba Bean (<i>Vicia faba</i> L.) and Decreased Cadmium Uptake in Cd-Contaminated Soil
27	A. G. Khan	Potential and Production of Uranium-Adapted Indigenous Arbuscular Mycorrhizal Fungi for Eco-restoration of Uranium-Contaminated Mine Spoil
28	Wanqin Shu	Lanthanum reduced cadmium accumulation in four genotypes of <i>Salix</i> spp. by inhibiting non-selective cation channels
29	Shufeng Wang	Linking root traits to phytoremediation services in 11 woody species in a Pb-Zn mine tailing: impact of root resource-use strategies on phytoremediation efficiency
30	Alami Soufiane*	Molecular Characterization of Root-Nodulating Bacteria Isolated from <i>Robinia pseudoacacia</i> Grown in The Mining Site of High Moulouya Area, Morocco
31	Sarita Tiwari	Scope for improvement of phytoremediation application: laboratory analysis verses field trial

Group 2 Posters		
1	Nora Grasse	Microbial Communities in a PAH Phytoremediation Site
2	Nora Grasse	Microbial Communities across an Agricultural Phytoremediation Site
3	Chung-Ho Lin	Efficiency of Columbia Wetlands in Removing Pharmaceuticals and Personal Care Products from Treated Municipal Wastewater
4	Phillip Dixon*	Development of bioaugmented phytoremediation strategies for combined treatment of 1, 4-dioxane and chlorinated solvents
5	Mitchell Alberts	Detection of naphthenic acid uptake into root and shoot tissues indicates a direct role for plants in the remediation of oil sands process-affected water
6	Louis Licht	Landfill Leachate Irrigated into a poplar tree cover: A Sustainable Long-Term Solution at a Closed Landfill Near Chicago
7	Ryan Vinhal	The DeValix Technique: Ecological Restoration Mats Designed for Phytotechnologies
8	Ryan Vinhal	Investigating the Chemical Ecology of Northern White-Cedar and White-Tailed Deer to Identify Phytochemicals Affecting Browsing
9	Ronald Zalesny	Innovations in phytotechnologies from a regional phytoremediation testing network in the Great Lakes Basin, USA
10	Ronald Zalesny	Using phyto-recurrent selection to choose poplar genotypes for restoration of Michigans stamp sands
11	Ronald Zalesny	IUFRO Working Party 1.06.01: Phytotechnologies for degraded sites in rural and urban communities
12	Ronald Zalesny	Great Lakes Phyto: An international partnership developing phytotechnologies to enhance ecosystem services in rural and urban communities
13	Ronald Zalesny	The healing power of trees: Using phytoremediation to reduce pollution impacts on human health and the environment
14	Amalia Kenyon*	Uptake and Spatial Distribution of PFOS in Hybrid Poplar
15	A.L. Hadj Sahraoui	Essential oil production from the aromatic plant, clary sage: a relevant non-food valorisation channel for the phytomanagement of aged trace element-polluted soils
16	Valentina Pidlisnyuk	Phytoremediation potential of <i>Miscanthus sinensis</i> applied to organochlorine pesticides-contaminated soil: role of amendments
17	Sumol Nilratnisakorn	Bioremediation of glyphosate study by bioinformatics and isolation bacteria screening from corn field soil.
18	Nisha Choudhary*	Pollution Due to Crop Residue: Impacts and Its Management
19	Tridip Boruah	Understanding Phytosociology and Enzymatic defense mechanism of herbaceous community in crude oil polluted habitat
20	Sumol Nilratnisakorn	Direct Brown 44 removal by <i>Bacillus aryabhatai</i> PYTK2 isolated from <i>Cyperus alternifolius</i> L.

21	Pungtip Kaewtubtim	Radionuclides uptake and translocation of soil to plants from granite rock mountain at Phangan District, Surat Thani Province, Thailand
22	Harsh Pipil	Phosphate Removal from Stormwater Runoff Using <i>Canna lily</i> and <i>Cyperus alternifolius</i> Based Bioretention System
23	María-del-Carmen Durán-Domínguez-de-Bazúa	Alternative Energy/Biofuels and Bioproducts from Plants: Electrochemically Assisted Constructed Wetlands: Comparison between three unexpensive materials, clay, earthen, and non-woven cloth, NWC
24	H. Deka	Phytoremediation potential of two herbs in crude oil polluted soil: Understanding biochemical defense and changes in soil properties
25	J. Kajoh Boyah	Wastewater Treatment Potentials of vegetated beds with <i>Brillantaisia</i> cf. <i>bauchiensis</i> Hutch & Dalz and <i>Polygonum salicifolium</i> Brouss ex Wild in the Western Highlands of Cameroon

Posters in Blue have no gate access and/or not registered and/or not booked into the Guest House