

ReSAGPAPR WG Newsletter

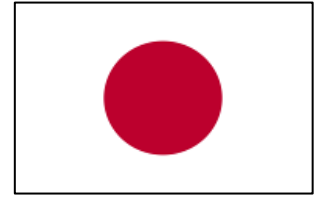
Published by the Working Group on Remediation for
Soil and Groundwater Pollution of Asian and Pacific Region

Volume 10, Issue 1
December, 2022

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Member Countries



Chairman of ReSAGPAPR WG

Dr. Tsair- Fuh Lin

Chair, Working group on the Remediation of Soil and Groundwater Pollution of Asian and Pacific Region

Chair Professor, Department of Environmental Engineering National Cheng Kung University and Co-Chair, 2023 IWA ASPIRE Conference and Exhibition, Kaohsiung



Program of 2022 International Workshop on Advanced Modeling, Characterization, and Remediation Technologies for Contaminated Sites

Date: December 14 (Wed.)-15 (Thu.), 2022

**Venue: Library Conference Center, Kuang-Fu Campus,
National Cheng Kung University (No.1, University Road, Tainan City) (No.1, University Road, Tainan City)**

Day 1: 12:45 AM to 08:40 AM (GMT), December 14 (Wed.), 2022

08:45 AM to 16:40 PM (Taiwan Time), December 14 (Wed.), 2022

Time(GMT)	Topic	Presenter
12:45-01:00	Registration	
01:00-01:20	Opening Remarks & Group Photos Taiwan EPA: Deputy Minister – Hung-Teh, Tsai US EPA: Assistant Administrator of International and Tribal Affairs – Jane Nishida	
01:20-01:50	Conceptual Site Model and Cleanup Modifications Responding to Nature Based Extreme Conditions	Dora Chiang (WSP)
01:50-02:20	Characterization and Monitoring Using Electrical Hydrogeology	Todd Halihan (Aestus, LLC)
02:20-02:50	Geology Best Practices: Conceptual Site Model Development for Site Characterization and Remediation	Cindy Fricke (US EPA)
02:50-03:10	Tea Break	
03:10-03:40	Using High-Resolution Site Characterization for Optimize Remediation Outcome.	John Sohl (Columbia Technologies)
03:40-04:10	Nuclear Magnetic Resonance Geophysical Investigations	Brad Cross (ERM)
04:10-04:30	Day 1 Morning Session – Q&A	
04:30-05:30	Lunch	
05:30-06:00	Combined Remedies	Jim Cummings (US EPA)
06:00-06:30	Combinations of Emulsified Vegetable Oil and Sulfidated ZVI	Michael Lee (Terra Systems, Inc.)
06:30-07:00	Bundling Complementary Abiotic and Biotic Technologies: Lesson Learned	Paul Dombrowski (ISOTEC Remediation Technologies)

07:00-07:20	Tea Break	
07:20-07:50	Simultaneous Treatment of Heavy Metals and cVOCs in Soil & Groundwater	Alan Seech /Dan Leigh (Evonik)
07:50-08:20	Increasing Remedial Efficiency by Combining Abiotic and Biotic Technologies	Will Moody (Provectus Environmental Products)
08:20-08:40	Day 1 Afternoon Session – Q&A	

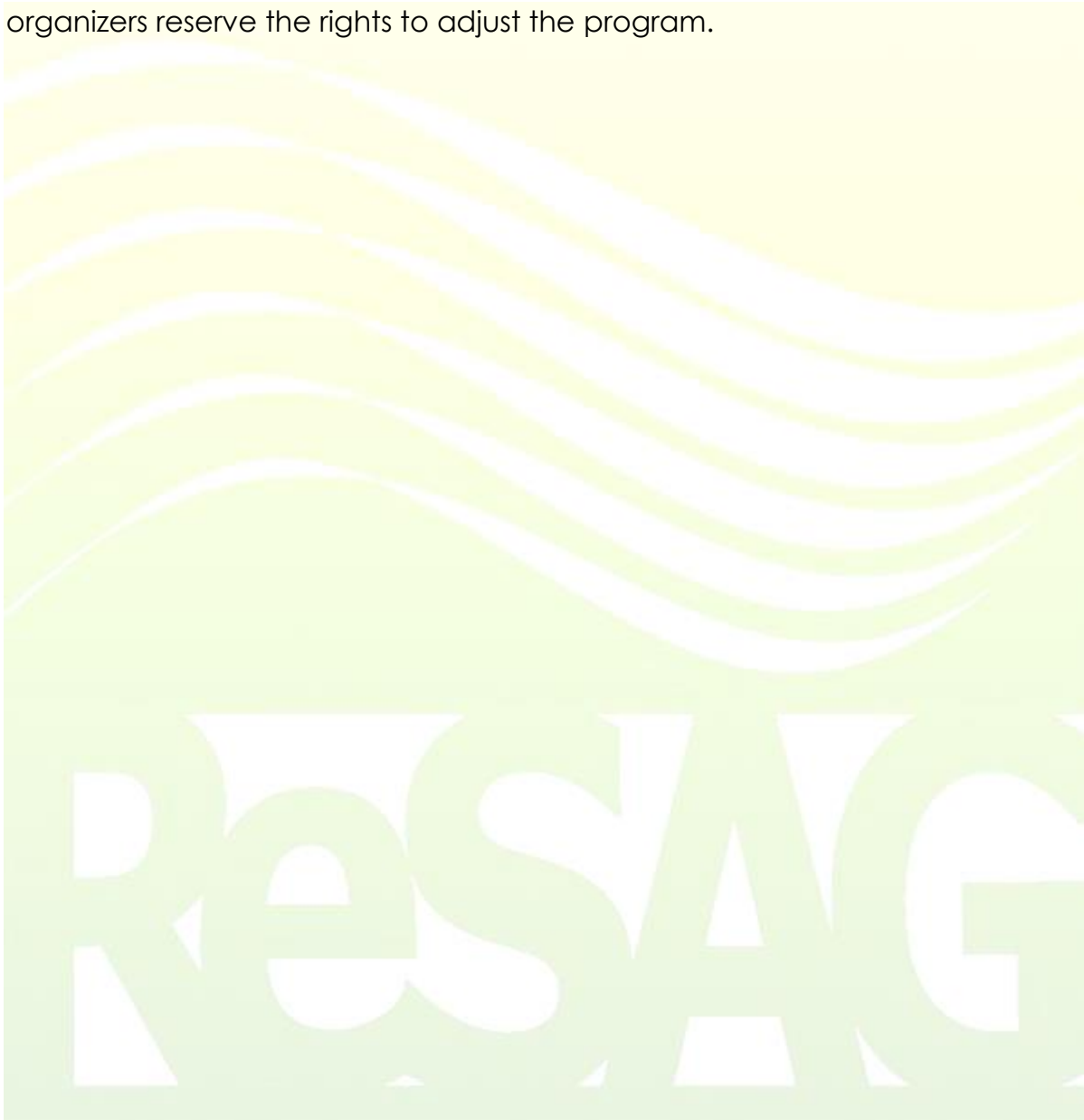
Day 2: 12:45 AM to 08:20 AM (GMT), December 15 (Thu.), 2022

08:40 AM to 16:20 PM (Taiwan Time), December 15 (Thu.), 2022

Time(GMT)	Topic	Presenter
12:40-01:00	Registration	
01:00-01:30	Fiscally Conscious DNAPL Remediation – Legacy Liability to Managed Closure – Phased Application of Combined Remedies	Bill Brab (AST Env)
01:30-02:00	Bioremediation of Chlorinated Solvents and Mixtures	Laurie LaPat-Polasko (Matrix New World Engineering)
02:00-02:30	An Innovative Solution for Sits with Low-Permeability Geology: Electrokinetic (EK) Amendment Delivery for In Situ Remediation	James Wang (Geosyntec Consultants)
02:30-03:00	Thermal Remediation in Low-Permeability Materials	Steffen Griepke (Cascade/TerraTherm)
03:00-03:20	Tea Break	
03:20-03:50	Injection of Powdered Activated Carbon in Low Permeability Strata	Ed Winner (RPI)
03:50-04:20	Reducing Time of Remediation at Clay and Fractured Rock Sites: Marrying Permeability Enhancement with Remediation Chemistry	Lowell Kessel (CERES)
04:20-04:40	Day 2 Morning Session – Q&A	
04:40-05:40	Lunch	
05:40-06:10	Balancing Technology & Investigations to Drive Remedial Success	Joe Quinnan/ Scott Potter (Arcadis)
06:10-06:40	Tracking Sustainable Remediation	Betsy Collins (Jacobs)
06:40-07:00	Tea Break	

07:00-07:30	PFAS Overview	Jim Cummings (US EPA)
07:30-08:00	Remedial Futures	Jim Cummings (US EPA)
08:00-08:20	Day 2 Afternoon Session – Q&A	
08:20	Workshop Ends	

* The organizers reserve the rights to adjust the program.



International Workshop: Invited Speakers



Assistant Administrator for EPA's Office of International and Tribal Affairs (OITA)

Jane Nishida

She served as EPA's Acting Administrator from January 20, 2021 to March 11, 2021, before the confirmation of current EPA Administrator Michael S. Regan. She has also served as Director of the Office of Regional and Bilateral Affairs within OITA.

In her current capacity, she leads EPA's international and tribal portfolios, and is responsible for the full range of EPA's environmental policy development and program implementation in tribal lands and in sovereign nations outside of the United States. Nishida represents EPA within the United States Government and works closely with tribal governments, foreign governments, international organizations, and other key stakeholders on matters relating to the environment.

Nishida has thirty years of environmental experience working in federal and state government, and international and nongovernmental organizations. Prior to joining EPA in 2011, Nishida served as the Senior Environmental Institutions Specialist at the World Bank. From 1995 to 2002, she was appointed as the Secretary of Maryland's Department of the Environment. Additionally, she served as the Maryland Executive Director of the Chesapeake Bay Foundation. She also held positions as Legislative Officer in the Maryland Governor's Office and Committee Counsel in the Maryland General Assembly.

Nishida received a Bachelor of Arts in International Affairs from Lewis & Clark College in Portland, Oregon and a Juris Doctorate from Georgetown Law Center in Washington, D.C.



Dora Chiang

Dora Chiang is Vice President and Global Technical Leader at WSP (Formerly Wood E&I). She holds BS and MS degrees in Chemistry and has a Ph.D. in Environmental Engineering from Georgia Institute of Technology. She has 22 years of consulting experience in the areas of contaminated site investigating and remediation. She leads company's remediation and emerging contaminants practices with strong emphasis on sustainable and resilient solutions on site cleanup and accelerating the innovative technologies transitioned from laboratory research to market. She also leads various company-wide initiatives such as environmental data transformation, building innovative culture, and technology transfer.



Todd Halihan

Dr. Halihan is a Professor and the Sun Company Clyde Wheeler Chair in Hydrogeology at Oklahoma State University, and Chief Technical Officer for Aestus, LLC.

Dr. Halihan's professional interests center in subsurface characterization using electrical hydrogeology and sustainable water supply. He has been an associate editor for Ground Water and has served as the Secretary-Treasurer of the U.S. Chapter of the International Association of Hydrogeologists. He served as the Chair of the Hydrogeology Division and the South-Central Section of the Geological Society of America. He was also the National Ground Water Association's 2018 McElhiney Lecturer and 2022 American Institute of Hydrology's C.V. Theis Award winner.



Cindy Frickle

Cindy Frickle is a physical scientist with EPA's Superfund program where she reviews and propagates technical information to site cleanup professionals through various trainings, EPA forums, and interagency channels. Prior to joining EPA, she spent time characterizing contaminated sites, coring sediments, studying microbes, and teaching. She completed her Biogeology MS and Geology BS in the University of Minnesota's School of Earth Sciences.



John Sohl

John Sohl is President and CEO of Columbia Technologies and a Director of Columbia Technologies do Brasil Ltda, both global technology firms. He has managed over 2,000 high-resolution and direct sensing projects around the world over the past twenty-five years. John holds three U.S. and two international patents involving direct sensors and the use of real-time information systems. He is a 1972 graduate of the U.S. Naval Academy with a B.S. in Engineering and holds a M.B.A. from Chaminade University of Honolulu. John is a member of ASTM International and the Sustainable Remediation Forum.



Brad Cross

Bradley D. Cross, R.G, P.G., is a Principal Hydrogeologist and Subject Matter Expert at ERM with over 35 years of experience in environmental consulting, water resources, and petroleum exploration. Specific areas of expertise include stratigraphy & sedimentology, hydrogeology, geophysics, and high-resolution site characterization. He holds a B.S. in Geology from Colorado State University and an M.S. in Geology from Texas A&M University.

For the past 10 years, Mr. Cross has been a pioneer in the application of nuclear magnetic resonance (NMR) geophysics to the environmental industry. He has worked with both regulators and industry, and has implemented numerous NMR investigations at sites across North America in a variety of geologic settings.

Contact information: ERM, 7272 E. Indian School Road, Suite 108, Scottsdale, AZ 85251; brad.cross@erm.com; (480)869-0604.

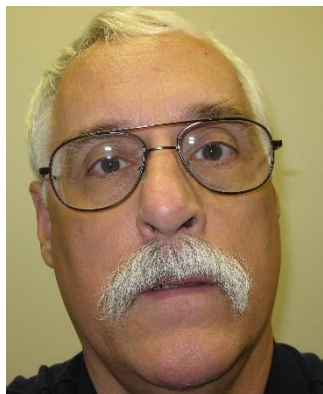
RESAG



Jim Cummings

Jim Cummings is in the Technology Assessment Branch in the Office of Site Remediation and Technology Innovation at EPA headquarters. He has over 25 years of experience in the development, evaluation and deployment of innovative tools for the characterization and remediation of hazardous waste sites. He provides technical support to federal and state RPMs in cleanup of wood treaters, former Manufactured Gas Plants (MGPs) and chlorinated solvent sites. Building on extensive experience in supporting selection and deployment of in situ thermal technologies, he prepared an EPA report on 'Lessons Learned in the Use of In Situ Thermal Technologies'. He has chaired sessions and presented at dozens of domestic and international remediation conferences. Recent interests include the use of combined remedies to exploit synergies among technologies and accelerate site closure. In a collaboration between EPA and the National Groundwater Association, he has moderated and presented at a series of Combined Remedy workshops around the country.

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Michael D. Lee

Dr. Michael D. Lee is Vice-President of Research and Development at Terra Systems, Inc. (TSI) of Claymont, DE, USA, a consulting and service firm specializing in the development and application of technologies for the bioremediation of surface and subsurface contaminants. He has a Doctor of Philosophy (1986) and Master of Science (1983) degrees in Environmental Science and Engineering from Rice University and a Bachelor of Science degree in Biology from University of Louisiana at Monroe (1980). Dr. Lee has over 35 years of experience in the field of bioremediation with expertise in applying in situ anaerobic bioremediation of chlorinated solvents and metals, implementing in situ aerobic bioremediation of hydrocarbons and other contaminants in groundwater and waste impoundments, conducting biodegradation and chemical oxidation treatability studies, and assessing natural attenuation of organic contaminants. He has been HAZWOPER certified since 1988. Dr. Lee was a technical lead for the first successful demonstration of bioaugmentation to promote the complete anaerobic biodegradation of trichloroethene and cis-1,2-dichloroethene for the Remediation Technologies Development Forum at Dover Air Force Base. Terra Systems was a participant in the Source Area BioREmediation (SABRE) project in the United Kingdom that demonstrated in the laboratory and field, the anaerobic bioremediation of dense non-aqueous phase trichloroethene. He has conducted laboratory microcosm, column studies, and field demonstrations of the anaerobic bioremediation of chlorinated solvents and chemical oxidation at over hundred sites. He jointly holds the patent on the use of emulsified soybean oil to support complete reductive dechlorination of chlorinated solvents. He develops new emulsified vegetable oil (EVO), EVO and zero valent iron, and other bioremediation products for TSI. Dr. Lee has published over 100 articles in peer-reviewed journals, conference proceedings, or books.



Paul Dombrowski

Paul Dombrowski, Senior Remediation Engineer at ISOTEC Remediation Technologies, Inc. has over 18 years in the environmental industry with experience in hazardous waste site investigation and remediation, with a focus in designing and implementing in-situ remediation technologies. Mr. Dombrowski is a Part-Time Lecturer at Tufts University in Medford, MA . He received a BS and MS in Environmental Engineering from Manhattan College in New York City and is a Professional Engineer in MA, NH, and CT.



Alan Seech

Dr. Alan Seech has 25 years of experience in environmental remediation. His focus is on treatment of soil, sediment, & groundwater containing recalcitrant organics & heavy metals. Alan received his Ph.D. (Environmental Microbiology) from the University of Guelph for research on the biodegradation of pesticides in soil, resulting in 4 United States patents. Reagents developed from his work include Daramend® for soil remediation, EHC® for groundwater treatment, and MetaFix® for removal of soluble heavy metals. These reagents have been successfully applied at hundreds of sites worldwide. Based in southern California, Dr. Seech has published numerous articles on remediation of soil and groundwater and presented more than sixty papers at international conferences. He serves as the Senior Manager of Technology Applications for the Soil & Groundwater Remediation group at Evonik Corporation.



Will Moody

Will Moody is an environmental scientist with over 20 years of experience focusing primarily on in situ remediation technologies to address soil and groundwater contamination. He began his professional career as an environmental consultant, which was followed by 15 years of in situ remedial design and field implementation at an international firm. Will's laboratory and field project experience includes the application of a wide range of in situ solutions including chemical oxidants, chemical reductants, biological amendments, and surfactants to address common (e.g., BTEX, chlorinated VOCs, etc.) and emerging contaminants (e.g., 1,4-dioxane and Freon). His experience includes the utilization of zero valent iron, hydrogen peroxide, sodium/potassium persulfate, sodium/potassium permanganate, and other site-specific reagents in overburden and bedrock systems. Will has been involved with over 250 in situ remediation projects in the US, Europe, Asia, South America, and Australia. Will received a Bachelor of Science Degree in Environmental Science from Virginia Polytechnic Institute and State University.

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Bill Brab

Bill Brab, PG, CPG is a Senior Remediation Geologist for AST Environmental, Inc. in Midway, Kentucky with 20 years of experience in environmental geology and site remediation. Bill is an expert in fractured bedrock characterization and is a recognized authority in Kentucky and Tennessee for his investigation and remediation of karst geology. He moved from environmental consulting to AST in 2011 and quickly assisted in distinguishing AST as the leading in-situ remediation technology company in the marketplace- a unique injection approach involving high resolution sampling, detailed conceptual site models, intricate and combined-remedy designs, and injection techniques.

Previously, Bill worked for a local Environmental Consulting firm in Lexington, Kentucky performing Underground Storage Tank (UST) compliance services- soil and groundwater assessment, evaluation of corrective action technologies, bulk soil and UST removals, in-situ remedial injections, and remedial systems operation and maintenance. He has provided technical oversight and on-site supervision of emergency response, free product recovery, initial abatement, and Phase I/II Environmental Site Assessments, plus QA/QC for regulatory compliance and representation of clients and programs encompassing private industry, local, state, and federal agencies in several states.

Bill graduated from the University of Kentucky in 2001 with a Bachelor of Science in Geological and Earth Sciences and holds Professional Geologist licenses in Kentucky, Tennessee, and Alabama, and is a Certified Professional Geologist. He currently oversees and mentors junior geologists for advancing career development at AST, he is a Kentucky Governor appointed Executive Board Member for the Kentucky Board of Registration for Professional Geologists and serves as the Treasurer for the Kentucky Section of The American Institute of Professional Geologists.

Bill has been on the AST team since 2011 as a Senior Remediation Geologist and is based in Midway, Kentucky. He manages most of the projects in Kentucky and Tennessee for the company. Bill received his BS degree in Geology from the University of Kentucky. Bill is a long-standing member of the American Institute of Professional Geologists (AIPG) and currently holds the Treasurer Executive Office position for the Kentucky Section. He is also an active board delegate on the Kentucky Board of Registration for Professional Geologists, which manages and oversees licensure within the commonwealth. He was drawn to AST because of their commitment to closing sites quickly and using sound science to maximize efficiency, rather than operating under a framework that promotes stagnation and keeps properties in purgatory for decades.



Laurie T. LaPat-Polasko

Dr. Laurie LaPat-Polasko has more than 29 years of experience in groundwater and soil remediation and wastewater treatment. She combines her knowledge of microbiology with a background in civil engineering to develop cost-effective remediation solutions for sites impacted by organic and inorganic compounds. She has dealt with contaminants ranging from fluoride and arsenic to chlorinated solvents, explosives, PFAS, and fuel compounds. Dr. LaPat-Polasko is an adjunct faculty member at Arizona State University. She received the 2018 Gold Medal Stevie Award for Woman of the Year in Technology and the 2020 Society of Women Engineer Prism Award.



James Wang

Dr. James Wang is a Principal Engineer based in Geosyntec Consultants' office in Columbia, Maryland. Dr. Wang received his B.S. in Civil Engineering from National Cheng Kung University in Taiwan, and his Master and Ph.D. from North Carolina State University. He is a licensed professional engineer with over 25 years of experience in developing and applying innovative technologies for environmental remediation and waste treatment. Dr. Wang has been sponsored by federal and state governments and industry for applied technology research and development. He has given short courses and workshops at technical conferences, and published over 15 peer-reviewed journal articles and many conference proceedings for his work in the areas of bioreactor landfill, advanced wastewater treatment, environmental molecular biology tool, and in-situ remediation technology.



Steffen Griepke

Steffen Griepke is Vice President of Technology at TerraTherm. In this role, he helps clients determine if a thermal remedy would work on their project site and if so, which thermal technology or combination of technologies would be the most cost-effective. He then leads the design of the remedy and guides its implementation, operation, and optimization through project completion. Steffen has spent more than 20 years working with thermal technologies and has been involved in more than 80 successful thermal projects. These projects include sites with former dry cleaners, chemical manufacturing plants, chemical storage facilities, MGP sites, brownfields, military installations, and tank areas.

Steffen also supports TerraTherm's clients in their communication with oversight agencies and regulators. Steffen's experience in designing, operating, and using real-time data for optimizing thermal projects makes him an excellent partner for clients with complex sites and/or recalcitrant compounds.

RESAG



Edward Winner

In February 2021 Edward became vice president of Remediation Products Incorporated (RPI). Prior to joining RPI Inc., Ed was the Assistant Director for Kentucky's (U.S. state) Division of Waste Management. He started his employment with the Commonwealth in the Risk Assessment Branch in 2000. In 2007, he joined the Paducah Gaseous Diffusion Plant Section, becoming the supervisor and Federal Facilities Agreement Manager. He then became the manager for Kentucky's Underground Storage Tank Branch in 2011 and continued until 2016. Edward came to state government from the University of Louisville, Lion's Eye Research Center where he had been a postdoctoral fellow. Dr. Winner has a B.A. from Tennessee Temple University and a B.S. and Ph.D. from the University of Louisville.



Lowell Gerardo Kessel

Mr. Kessel is the President and Technical Director at CERES Remediation Products supporting clients with design and application of remediation projects. He is a registered professional geologist (PG) in multiple states in the U.S., and has specialized in environmental investigation and remediation technologies working for environmental engineering and consulting firms and technology providers of site characterization and remediation services since 1998 and internationally since 2008. Mr. Kessel holds a BS and MS in Geological Sciences and a Masters in Business, all from the University of California.



Joseph A. Quinnan

Scott T. Potter

Joe Quinnan is a Senior Vice President with Arcadis in Novi, Michigan. He has more than 32 years professional experience in environmental consulting and is co-author of the book *Remediation Hydraulics* (CRC Press, 2008). He is the technical lead for Arcadis' PFAS programs for the DoD and North American Director of Emerging Contaminants. Joe is currently leading ESTCP projects evaluating superfine powdered activated carbon and ceramic membrane filter (SPAC-CMF) to treat PFAS-impacted water and soil washing to treat PFAS source zones. He led the validation of a PFAS mobile lab and application of stratigraphic flux and source strength, which is being applied for the Air Force at four PFAs RIs. Joe has a master's and bachelor's degree in geological engineering from Michigan Technological University.



Betsy Collins

Betsy Collins is an Environmental Engineer with more than 10 years of experience at Jacobs. At Jacobs she is a Project Manager and a Sustainable Resilient Remediation Practice Leader. Betsy is currently President of the Sustainable Remediation Forum (SURF), a registered Professional Engineer in North Carolina, a LEED Green Associate, and an Envision Sustainability Professional.

Interesting Sidelights: International Workshop



Opening Remarks:

Taiwan EPA: Deputy Minister – Hung-Teh Tsai

US EPA: Assistant Administrator of International and Tribal Affairs – Jane Nishida



Group Photo with Distinguished Guests from
Thailand, Indonesia, Japan, and Vietnam



Group Photo



Workshop in Progress



Workshop in Progress

Program of the 11th Business Meeting of ReSAGPAPR

Date: December 16 (Friday), 2022

Venue: Department of Environmental Engineering, National Cheng Kung University

Prof. Dr. Tsair-Fuh Lin, Chair of WG ReSAGPAPR

Time (GMT)	Duration	Agenda	Moderator
04:00-04:10	10 min.	Registration and Social Networking	
04:10-04:25	15 min.	Welcome and Introductions of the Representatives of Member Countries and Attendees	Dr. Tsair-Fuh Lin, Chair
04:25-04:30	5 min.	Director General's Remark: Mr. Jui-Hsiang Liu, Director General, Soil and Groundwater Remediation Fund Management Board, Environmental Protection Administration, Executive Yuan, Republic of China (Taiwan)	
04:30-04:35	5 min.	Group Photo	
04:35-04:45	10 min.	Reports of the 6th Term (2021-22) Activities	Dr. Tsair-Fuh Lin, Chair / Dr. Hao-Chun Hung
04:45-05:05	20 min	Promotion of Events Organized by Members	
05:05-05:20	15 min	Election of Chair Country and Vice Chair Country for the 7th Term (2023-24)	
05:20-05:40	20 min.	Discussions on Next Meeting and Future Plans	
05:40	--	End of Meeting	

Meeting Minutes of the 11th Business Meeting of

ReSAGPAPR

* This meeting was conducted via videoconferencing.

Date: December 16 (Friday), 2022

Time: 12:00 pm – 01:25 pm (Time in Taiwan)

Chair: Prof. Tsair-Fuh Lin / Taiwan

Members present: Australia / Mr. Andrew Pruszinski
Indonesia / Ms. Gita Andani
New Zealand / Mr. Bruce Croucher
Taiwan / Prof. Tsair-Fuh Lin & Dr. Hao-Chun Hung
Thailand / Dr. Chayawee Wangcharoenrung
Vietnam / Ms. Nguyễn Hoàng Ánh
Japan / Mr. Teruyoshi Hayamizu
Philippines / Engr. Jean Borromeo & Mr. Jerry Capulong

In attendance: Taiwan / Dr. Chih Huang & Mr. Shih-Han Huang
Ms. Ying-Shin Chen
Japan / Dr. Oba Hirotsuke

Minutes:

1. Presentation 1: Reports of the 6th Term (2021-22) Activities (Presented by Prof. Tsair-Fuh Lin) (File attached)
2. Promotion of Events Organized by Members
 - Taiwan:
 - (1) The 9th IWA-ASPIRE Conference and Exhibition 2023(October 22-26, 2023) in Kaohsiung
 - (2) Technical Forum working with Viet Nam in 2023
 - Thailand:
 - (1) One-day Technical Forum with Taiwan on December 20.
 - (2) Soil and Groundwater Seminar organized together with Shells Oil Company in October every year.
 - Australia: CRC event in September 2024
 - New Zealand: Will report conference information in the next meeting.
 - Japan: Symposium of Soil and Groundwater with Remediation section, by four academic bodies in June every year.
 - Philippines:
 - (1) Manila Bay Environmental Management Project (MBEMP) and water quality protection.
 - (2) Biodiversity and Sustainable Development of Philippines.

3. Election of Chair Country and Vice Chair Country for the 7th Term (2023-24)
 - Members fully approved that Taiwan would continue to serve as the Chair Country for the 7th Term (2023-24)
 - Members fully approved that Thailand continue to serve as the Vice-Chair Country for the 7th Term (2023-24)
4. Suggestions on next year business meeting and training course
 - Chairperson for the next meeting: Mr. Bruce Croucher from New Zealand
 - Country Report in the next meeting: Philippines
 - Time proposed for the next meeting: March 2023.
 - Taiwan EPA has been invited to join US EPA and Thailand in a technical forum to work on tri-lateral activities
5. Other topics:
 - Philippines: suggested trying not to hold activities in the last quarter.
 - Australia: suggested that the event holding time should not be during the summer vacation in Taiwan.
 - Japan and Indonesia: suggested that the business meetings and /or training courses could have online participation option.
 - Thailand: suggested that the event holding time should not be during the typhoon season in Taiwan.
6. . Adjournment: 01:25 (Time in Taiwan)



Interesting Sidelights: The 10th Business Meeting of ReSAGPAP



Venue Decoration



Meeting in Progress



Chair, Dr. Tsair-Fuh Lin



Mr. Jui-Hsiang Liu, delegate of Taiwan EPA



Dr. Hao-Chun Hung, delegate of Taiwan EPA



Dr. Shin-Han Huang, delegate of Taiwan EPA



Ms. Ying-Shin Chen, delegate of Taiwan
Association of Soil and Groundwater
Environmental Protection



Meeting in Progress

