

PROGRAM

International Conference on

ENVIRONMENTAL SUSTAINABILITY THROUGH WASTE AND RECYCLING

April 10-11, 2023 | San Francisco, CA

April 12, 2023 | Virtual



Venue

DoubleTree by Hilton
San Francisco Airport
835 Airport Blvd, Burlingame, CA



Pacific Time Zone



contact@uniscigroup.net
organizer@conference-wastemanagement.com



<https://wasteandrecycling.org/>



Join the meeting

<https://us06web.zoom.us/j/83787288452?pwd=Q0xrMlg0RktiM25Mc0g0QWJBUEJZdz09>

Meeting ID: 837 8728 8452

Passcode: 006815

08:00-08:20 Registrations & Badge Pickup

@ SIERRA FOYER

08:20-08:30 Opening Ceremony

Keynote Presentations

@ SIERRA-A

Moderator: Ron Cline, Eco Sphere Sciences, Inc., Carson City, NV

08:30-09:00

Machine Learning: A Promising Approach for Managing the Bioconversion of Waste to Biofuel and Bioenergy

Hong Liu, Oregon State University, Corvallis, OR



Hong Liu is currently a Professor of Biological and Ecological Engineering at Oregon State University, Corvallis, OR. Her main research efforts are in developing microbial and electrochemical systems for energy and resource recovery from waste streams. She recently also developed machine learning approach for managing complex microbial processes for waste treatment and resource recovery. She has published over 100 peer-reviewed papers with over 20,000 citations. She was listed in The World's Most Influential Scientific Minds in 2014, 2015, 2016 by Thomson Reuters. She is a US NSF Career Awardee and has received multiple research grants from US federal agencies.

09:00-09:30

The Future of Sustainable Packaging

Chris Bradley, Orora Packaging Solutions, Orinda, CA

Corny Connors, Orora Packaging Solutions, Portland, OR



Chris Bradley is a sustainable packaging & product design leader with more than 25-years of experience in driving packaging innovation for CPG companies such as Nestle, Proctor & Gamble, Clorox, Colgate-Palmolive and many others. Chris has been awarded more than 40 patents for his inventions and has won several of the world's top design awards. Chris is currently the VP of Marketing & Sustainable Packaging Design at Orora Packaging Solutions, a global packaging solutions company that is leading the transition to a more sustainably packaged future. Chris has been a pioneer in reusable packaging design with packaging reuse projects going back more than twenty years. He is an outspoken proponent of reuse but has also experienced firsthand the challenges when trying to implement these systems. Chris currently leads a global team of designers and engineers focused on developing more sustainable packaging solutions including recyclable & reusable formats for food, beverage and other categories. Prior to joining Orora, Chris was the CEO of 2nd Edison, Inc. an award-winning innovation and product design consulting firm. Chris lives in Orinda, California with his wife Shannon and their two daughters, Thalia and Ella.

09:30-10:00

An Innovative New Concept for Enhanced Recycling and Decarbonization of Biosolids

Birgitte K Ahring, Washington State University, Richland, WA



Prof. Ahring works with biomass conversion to biofuels and high value bioproducts. Her expertise is broad and expands from full biorefinery set-ups for biomass conversion involving pre-treatment, biological production, and molecular tailoring of new biocatalysts to separation and catalysis of platform molecules into fuels and chemicals. Currently she is involved in production of jet fuels using a new bio-based concept and her research group works all the way from proofs of concept activities in the laboratory to pilot scale testing of new concepts. Her overall philosophy is to make full use of any raw material. Even though agricultural and forestry residues are waste from other primary production schemes, they need to be fully exploited in the biorefinery: Don't waste! Full use of the raw material will further lower the cost of the bio-products produced and make biorefineries economically viable.

10:00- 10: 20

COFFEE BREAK

@ SIERRA-B

10:20-10:50

Getting to Zero Waste

Paul Palmer, Zero Waste Institute, San Francisco, CA



Paul is the President at the Zero Waste Institute. He did his PhD in Chemistry from Yale and had a brief stint in Turkey as a Professor. Following Two short stints in Copenhagen and Indianapolis he eventually made my way to California where he started a company called Zero Waste Systems Inc. which took excess industrial chemicals and reselled them with minimum processing. This fully profitable company, with 20 employees, found new homes for hundreds of tons of excess chemicals that would otherwise have been buried in the ground. His website for the Zero Waste Institute attempts to flesh out this principle in actual applications. He wrote a book called Getting To Zero Waste which is a manual for chemical brokerage and reuse.

10:50-11:20

Building the Circular Economy in California

Frank Severson, Cal Recycle, San Francisco, CA



Frank has led integrated waste management, business assistance, and related environmental program teams for CalRecycle for the last 16 years. He leads the Business Assistance Team, which helps more than 100 businesses a year site and expand in California. These are manufacturers that use discarded cardboard, plastic, food waste, and more and use standard and emerging technologies to create products and jobs in California. The program provides attractive loans, grants, technical assistance, free product marketing, permitting assistance, local contacts and local incentives, and support from the Governor's Office of Business and Economic Development (GO-Biz) to unlock tax credits, training programs, and more to fuel new businesses, expand existing ones, and divert waste from landfills.

11:20-11:30

DISCUSSION TIME

Oral Presentations

Waste Water Treatment & Recycling

Waste to Energy | Reduce, Reuse and Recycle | Food and Agricultural Waste Recycling

Chair: Lide Chen, University of Idaho, Twin Falls, ID

- 11:30-11:50 **A Green Production Process of Nano-Size Zero Valent Iron (nZVI) for Contaminant Removal**
Chi-Wang Li, Tamkang University, Taiwan
- 11:50-12:10 **Peruvian Native Bacterial Strains as Possible Bioremediation Agents in Soils Contaminated with Hg by Artisanal Mining Activities in Southern Peru**
Patricia Yaneth Lopez Casaperalta De Diaz, Universidad Catolica de Santa Maria, Peru
- 12:10-12:30 **Refractory Waste in Universities and Research Institutes: Challenge for Osmium Waste Using Supercritical Fluids**
Tepei Nunoura, The University of Tokyo, Japan
- 12:30-12:50 **Evaluation of On-Farm Centrifuge and Screen on Removing Solids and Nutrients and Reducing Ammonia Emissions from Liquid Dairy Manure**
Lide Chen, University of Idaho, Twin Falls, ID
- 12:50-13:10 **Utilising Gold Mine Tailing with Inherent Acid-Neutralising Capabilities as a pH-Neutralising Cover to Mitigate the Release of Acid and Toxic Heavy Metals from Mine Tailings**
Andrew Eloka-Eboka, North-West University, South Africa
- 13:10-13:15 GROUP PHOTO @ SIERRA-A**
- 13:15-14:00 LUNCH BREAK @ SIERRA-B**
- Chair: Colton Flynn**, USDA - Agricultural Research Service, Temple, TX
- 14:00-14:20 **Investigation of Low-Carbon Footprint Diluents in Solvent Extraction for Lithium-Ion Battery Recycling**
Abdoulaye Maihatchi Ahamed, University of Lorraine, France
- 14:20-14:40 **World Development and Generation of Waste**
Ronaldo Rosales Mendoza, Federal University of Para, Brazil
- 14:40-15:00 **Deoxygenation of DMT (Dimethyl Terephthalate) as Polyethylene Terephthalate Model Compound over Metal Catalysts Supported by $g\text{-Al}_2\text{O}_3$**
Seung-Soo Kim, Kangwon National University, South Korea
- 15:00-15:20 **Manureshed Management: A Look into Longstanding Nutrient Imbalances in US Agriculture**
Colton Flynn, USDA - Agricultural Research Service, Temple, TX
- 15:20-15:40 **Tackling the Hidden Problem of Pre-Consumer Plastic Wrap in Retail**
Matthew Clough, Plastic Beach, San Francisco, CA
- 15:40-16:00 **Dairy-Based Biorefinery: Opportunity, Challenges, and Advancements**
Shulin Chen, Washington State University, Pullman, WA
- 16:00-16:20 COFFEE BREAK @ SIERRA-B**
- 16:20-16:40 **Separation and Recovery of Organics from Hydraulic Fracturing Wastewater Using Deep Eutectic Solvents**
Elnaz Nikooei, Oregon State University, Corvallis, OR

Join the meeting

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Oral Presentations

@ SIERRA-A

Waste Management Technologies & Sustainability

Waste Management Technologies | Technology and Innovation | Economic Challenges |
Transitioning to Circular Economy | Sustainable Practices

Chair: Diana Stavreva, NCI, NIH, Bethesda, MD

- 08:30-08:50 **Subtle Early-Warning Indicators of Landfill Subsurface Thermal Events**
Andy Davis, Geomega, Boulder, CO
- 08:50-09:10 **Beyond Recycling: Exploring the Latest Trends and Startups in Waste Management Innovation**
Lainika Johnson, TrashLogic, Carmichael, CA
- 09:10-09:30 **The Emergence of an Industry and Why it is Needed**
Pedrito Gella, Trash Scouts, Alameda, CA
- 09:30-09:50 **High-Throughput Activity-Based Assay for Detection and Monitoring of Endocrine Disrupting Chemicals in Water Sources**
Diana Stavreva, NCI, NIH, Bethesda, MD
- 09:50-10:10 **Weeds (Agricultural Wastes) as Potential Sources of Essential Fatty Acids and Bioactive Compounds**
Khageshwar Singh Patel, Amity University, India
- 10:10-10:30 **Aerobic Biodigester Technology that Turns Organic Waste into a Bioactive Fertilizer, Less than an Hour, Small Footprint, ROI Less than 2 Years**
Mohammed Memon, Eco Sphere Sciences, Inc., Carson City, NV
Ron Cline, Eco Sphere Sciences, Inc., Carson City, NV
- 10:30-10:50 **All-Green, Hydro-Stable, Degradable Straws and Thermoset Films for Sustainable Development**
Jaehwan Kim, Inha University, South Korea
- 10:50-11:05 COFFEE BREAK** @ SIERRA-B
- 11:05-11:25 **Maintaining a Campus Materials Recovery and Waste Program Through Tumultuous Times**
Maximilian Christman, Caltech, Pasadena, CA
- 11:25-11:45 **Protecting the Planet and Providing for our One Human Family**
Eve Birge, White Pony Express, Pleasant Hill, CA
- 11:45-12:05 **Specification Product & Packaging Data: Key Driver for Sustainability Success**
Matthew Wright, Specright, Tustin, CA
- 12:05-12:25 **Navigating 1383 in Regards to Businesses and Haulers**
Melissa Baxter, Nothing Wasted Consulting, San Francisco, CA
- 12:25-12:45 **Paper Ash Reuse in Concrete**
Essia BELHAJ, INSA de Strasbourg, France

12:45-13:05 **Adsorption Study of U(VI) ion from Wastewater Using Melamine-Formaldehyde (MF)-AspDOTA Chelating Resin: Kinetics and Equilibrium Isotherms**
Ofra Paz Tal, NRCN, Israel

Poster Presentations

13:05-13:10 **Supporting Waste Treatment Industry to Meet European Circular Economy Goals**
Giacomo Di Foggia, University of Milano-Bicocca, Italy

13:10-13:15 **Recovery of Carbon Materials from Spent Secondary Battery**
Joo-II Park, Hanbat National University, south Korea

13:15-14:00 **LUNCH BREAK** @ SIERRA-B

Chair: Shaghayegh Bagheri, George Mason University, Fairfax, VA

14:00-14:20 **Quality and Regulatory Trends in Recycled Food Contact Packaging**
Keith Vorst, Iowa State University, Ames, IA

14:20-14:40 **Intentionally and Non-Intentionally Added Substances from Post-Consumer Polyolefins**
Greg Curtzwiler, Iowa State University, Ames, IA

14:40-15:00 **George Mason University (Mason's) Sustainability Program through Mechanical Engineering Capstone Projects**
Shaghayegh Bagheri, George Mason University, Fairfax, VA

15:00-15:20 **From Trash Caves to Recycling in 30 years – A Finnish Perspective on Consumption, Modification of Behaviors and Different Points of View**
Maria Hofman-Bergholm, Centria University of Applied Sciences, Finland

15:20-15:40 **Recycling of Plastics and Rubber Wastes**
Denis Rodrigue, Universite Laval , Canada

15:40-16:00 **COFFEE BREAK** @ SIERRA-B

16:00-16:20 **Using Data to Evaluate Returnable vs. Expendable Packaging**
Camille Corr Chism, Indigo Packaging and Consulting, Detroit, MI

16:20-16:40 **Energie From Biomass: Legal and Sustainable Alternative in Brazilian Case**
Marcia Carla Pereira Ribeiro, Pontifical Catholic University of Parana, Brazil

16:40-17:00 **Diffusion of Ions in a Sediment Amended with Sugarcane Biochar Pyrolyzed at Different Temperatures**
Luis Reynaldo Alleoni, University of Sao Paulo, Brazil

17:00-17:20 **Optimization of Bio-oil Production by Microwave Pyrolysis Using Native Polyculture Microalgae Cultivated in Greywater**
Mohit Aggarwal, Indian Institute of Technology Bhubaneswar, India

END OF DAY-2

Join the meeting

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(US & Canada)

08:45-09:00 Opening Remarks & Introduction

Keynote Session

Moderator: Tara RavaZolnikov, National University, Merritt Island, FL

09:00-09:30

Applying Sustainability and Circular Economy Concepts to Sewage Sludge Management



Spinosa Ludovico, CNR Senior Scientist (retired), ISO and CEN Expert, Italy

Spinosa Ludovico has been Senior Scientist at National Research Council in Italy, Assistant Professor in Agricultural Hydraulics, Contract Professor in Ecology, and Contract Professor in Waste Engineering (Italian Universities), and Guest Professor at Harbin Institute of Technology (China). He has been Delegate at the European COST Action on Sludge, and Chair of the IWA Specialist Group on Sludge Management. Now Expert Member at CEN/TC308 and ISO/TC275 on Sludge Management, and Scientific Consultant at Euro Tecno Service s.r.l. Awarded of the IWASGSM Specialist Medal in Residuals Research in 2009 and nominated as IWA Fellow in 2015. Co-editor of books, and author of more than 250 publications.

09:30-10:00

Tox-Free-Environment – EU Chemical`s Strategy - Demands and Solutions to Recycle More Plastics



Beate Kummer, Kummer: Umweltkommunikation, Germany

Chemist and toxicologist, managing director of her own consultancy Kummer: Umweltkommunikation GmbH has now around 28 years` experience in the environmental aspects, like hazardous substances and occupational health and safety, working on communication, REACH, sustainability and education. She is one of the senior consultants for Polysecure. When she finished her studies in Freiburg and Los Angeles 1994 with degrees in chemistry and toxicology, she joined the association base as managing director. She is also working as a lecturer at universities. She gained her international experiences in environmental projects funded by the European Commission as a leader and on the other hand working for international companies.

Oral Session

Waste Management | Sustainability | Recycling

Transitioning to Circular Economy | Environmental Impact | Plastic & Paper Recycling Technology

- 10:00-10:20 **Fabrication of Fe₃O₄ Based Magnetic Core Shell Structures for Environmental Remediation.**
Mohamed Habila, King Saud University, Saudi Arabia
- 10:20-10:40 **Look, it's a Dengue Mosquito: A Qualitative Study on Open-air Dumpsites and Vector-Borne Disease**
Tara Rava Zolnikov, National University, Merritt Island, FL
- 10:40-11:00 **Innovative Waste Management and Recycling: Towards a Sustainable Future of Saudi Arabia**
Abdulkader Hanbazazah, University of Jeddah, Saudi Arabia
- 11:00-11:20 **Whole Campus Wastewater Surveillance of SARS-CoV-2 for COVID-19 Outbreak Management**
Yehonatan Sharaby, University of Haifa, Israel
- 11:20-11:40 **Lead as a Pollutant in Waters of Pardo River Basin, Sao Paulo State, Brazil**
Daniel Marcos Bonotto, UNESP, Brazil
- 11:40-12:00 **Transforming Foundation Industries: Role of Recycling and Industrial Symbiosis**
Ahmed Khalil, University of Exeter, United Kingdom
- 12:00-12:20 **Urban Bioeconomy: Uncovering Its Components, Impacts and the Urban Bio-Symbiosis**
Nan-Hua Nadja Yang, University of Oxford, United Kingdom
- 12:20-12:50 BREAK**
- Chair: Ibrahim Abdallah**, Torrens University, Australia
- 12:50-13:10 **Assessing and Managing the Direct and Indirect Emissions from Electric and Fossil-Powered Vehicles**
Adekunle Mofolasayo, University of Alberta, Canada
- 13:10-13:30 **Sustainability Supply Chain Management: Systematic Literature Review**
Ferry Jie, Edith Cowan University, Australia
- 13:30-13:50 **Sustainable Development Policies of Renewable Energy and Technological Innovation Toward Climate and Sustainable Development Goals**
Ibrahim Abdallah, Torrens University, Australia
- 13:50-14:10 **Altruistic for Natural Environment and life Satisfaction: Evidence from 37 Nations**
Xiangdan PIAO, Iwate University, Japan
- 14:10-14:30 **Supply Chain Strategies to Reduce Vaccine Wastage: A COVID-19 Case**
Shahrooz Shahparvari, RMIT University, Australia
- 14:30-14:50 **Recycled Poly (ethylene terephthalate) Blends and Composites**
Norhayani Othman, Universiti Teknologi Malaysia, Malaysia
- 14:50-15:10 **COVID-19 Related Waste Creation and Management and its Environmental Impacts**
Tehmina Khan, RMIT University, Australia
- 15:10-15:30 **Education for Sustainable Waste Management Practices**
Miwa Tatsuno, Institute for Global Environmental Strategies (IGES), Japan

We wish to see you at

**ENVIRONMENTAL SUSTAINABILITY
THROUGH WASTE AND RECYCLING
(ENSURE-2024)**



USG-United Scientific Group (A non-profit organization)

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