



UAA College of Engineering
UNIVERSITY of ALASKA ANCHORAGE



UAA Professional Development Seminar Series

Regenerative Design & Water Reuse: Lessons from Mars and Early Adopters of Earth

Presented by Dr. Jay Garland

This presentation will review basic elements of regenerative design including the frame of reference of closed loop life support systems for space missions. A specific example of early adoption of a regenerative approach, on-site water reuse at the building or district scale, will be reviewed with a focus on the data gaps needed to facilitate safe implementation. As part of an on-going collaboration with states/utilities, EPA ORD has provided information on a risk-based approach to define treatment requirements, examined the wastewater microbiome for novel surrogates to monitor treatment performance, and compared life cycle assessment of alternative approaches for on-site reuse. Lessons learned from this effort can be used as part of a broader design of a regenerative water future.

Dr. Jay L. Garland joined the EPA's Office of Research and Development in 2011 after spending over 20 years working on NASA's efforts to develop closed, bioregenerative life support systems for extended human spaceflight. He received a Ph.D. in Environment Science from the University of Virginia and his research has addressed a range of topics, including methods for microbial community analysis, factors affecting survival of human associated pathogens, and various biological approaches for recycling wastes.

Thursday, March 28, 2019

11:45 am-12:45 pm

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