

**Mini-Track Session Descriptions**

**2020 Virtual Onsite Wastewater Mega-Conference**

**Funding & Program Assessment**

**Tuesday, November 17, 2020 – 9:00 am – 12:00 pm**

**Session title: Online classes: Making them Work for your Audience (30 min.)**

*Presenter: Kevin Sherman*

As someone who has loved teaching in-person training and a self-confessed skeptic of the value of online learning, it has been eye opening to prepare an online class for NOWRA in the spring of 2020. In this talk, the speaker will describe his journey and lessons learned developing an online course. The lack of direct real-time connection between the speaker and the audience in online learning is concerning. I discovered my online class prepared on a favorite topic had to be completely rewritten to be clearer than it had ever been in-person. In online courses, all you can provide the audience is your voice and visual aids. You most maximize both to produce a quality on-line class. I missed noticing confused looks in the audience and clarifying what I meant real-time while lecturing in-person. This deficiency makes preparing crystal clear and easy to read slides essential. I decided to prepare a script for each slide. This process ensured all the information was conveyed at some time during the class. I tried to remove colloquial terms so people from across a broad spectrum understood me. I found I had to animate some slides so students would realize where I would have pointed to on a slide had I been there. I suggest that a number of anonymous reviewers with different backgrounds beta-test each online class for clarity of instruction and visuals. The online platform advantage is the ability to reach future students who will value the information presented.

**Session title: Onsite Wastewater Research Funding - Texas Model (30 min.)**

*Presenter: Anish Jantrania*

Research is necessary for advancement and progression of any industry, including the onsite wastewater industry. However, funding a strong, sustained, research program at a state level is quite challenging. In the late 80s, Texas State legislators debated and passed a law requiring the state's environmental regulatory agency to award competitive grants supporting applied research and demonstration projects regarding on-site wastewater treatment technologies. It was famously called the â€œ$10 research fee lawâ€ and supported research efforts from 1992 to 2012. The Onsite Wastewater Center at Texas A&M University is one of the programs started with the support from this funding. Texas is unique from most other states in that it has a â€œsunset policyâ€ requiring certain laws to be renewed after 20 years or get abolished. The $10 research fee law was not renewed in 2013 and state funding for onsite wastewater research stopped. But the state continued to collect the $10 fee from the local permitting authorities and the funds were used to support activities unrelated to the onsite wastewater industry. In 2105, the Texas Onsite Wastewater Association got involved to reinstate the research funding through political lobbying efforts, and got it done in 2017. This paper discusses the details of the onsite permitting program in Texas and how the $10 per permit fee is supporting the research now. Audience discussion related to programs in their states will be part of the presentation.

**Session title: On site wastewater research at Texas A&M University (30 min.)**

*Presenter: June Wolfe*

Authors: June Wolfe III, Anish Jantrania, Gabriele Bonaiti, and Ryan Gerlich. Texas A&M AgriLife Research and Extension's (AgriLife) On Site Sewage Facility (OSSF) Research Team was awarded 3 contracts to address topics requested by the Texas Commission on Environmental Quality. Proposals addressing black water non-potable reuse (BWR), low-pressure dosing systems (LPD), and aerobic treatment unit adequacy with higher strength wastewater and alternative dosing schemes (ATU) were funded. This presentation describes the experimental design, field installation, and preliminary results of each research topic. AgriLife is using BioBarrier MBR 0.5 (NSF Standard 350) and Clearstream NC3 (NSF Standard 40) products to investigate BWR for non-potable reuse, mainly for toilet flushing. AgriLife is evaluating field scale performance of LPD trenches applying standard septic tank effluent. Conventional LPD has emitters facing down while experimental LPD emitters face up and are protected with either 1) orifice shields or 2) leaching chambers. AgriLife is evaluating current ATU design adequacy as organic concentrations and hydraulic flows present in residential ATU's have changed due to water conservation devices and graywater reuse. A range of high organic strength influents and different dosing schedules are being applied to Two Clearstream N500 ATU's operated in parallel.

**Session title: Using Macroinvertebrates as indicators of septic system density – An Initial Review (30 min.)**

*Presenter: Gary Hawkins and Jonathan Fox*

The Mulberry River watershed is a large network of streams that spans across Jackson and Barrow counties in Northeast Georgia. The area that the watershed is located has very diverse land usage and features many areas where on-site sewage management systems are found in great density. This watershed appeared to be ideal for a study in which macroinvertebrate communities and water quality could be monitored in relation to areas of high, medium, low, and no septic system density. Eight first order streams, ranging from 1,500 to 5,000 acres and located in different areas of septic tank density were selected for monitoring. Grab samples of water are taken and analyzed for nitrates, conductivity, and a variety of other parameters. Macroinvertebrates are monitored using an adapted sub-sampling procedure. These samples were then quantified using three different biological indexes (Hilsenhoff, EPT, and Margalef's richness). In addition, a dosage trial was run to test the effects of nitrates on mayflies (Maccaffertium). The dosage trial data indicates that nitrates can possibly affect mayfly populations if found in high concentrations. This study is scheduled to collect water samples twice monthly and sample macroinvertebrates quarterly to evaluate both water quality changes and seasonal macroinvertebrate diversity. The results of this experiment are showing slight trends in the relationship between water quality, the density of septic systems, and macroinvertebrate indices.

**Session title: Transitioning of Design Services - Virginia's Experience (30 min.)**

*Presenter: Lance Gregory*

The purpose of this presentation is to share Virginia's experience in transitioning onsite sewage system evaluation and design services from local health department to the private sector. The presentation will cover Virginia's 20+ year history on the topic, how it started, Virginia Strategic Vision, and where we go from here.