12:33:49 From Bernie Kuhajda : Can you go into moredetails on water sample blanks?

12:34:30 From Arial Shogren (she/her) : I recently received a small pilot grant to do some river water/sediment sampling. I have a small budget for materials and a set amount for sample analysis. Would you recommend a spatial approach (so many samples in a watershed) or temporal approach? Is there just so much spatial variability that it would be better to use effort to sample the same place (e.g., watershed outlet) to capture temporal variability?

12:38:11 From Krista Capps (she/her) : Rinse how many times?

12:39:24 From Zoom user : for people like Riverkeepers not doing academic studies for publishing papers, is there currently any point in taking grab samples to identify and bring attention and try to improve problems with all the variables and lack of standardization.

12:40:12 From Austin Scircle : For sampling water from wastewater treatment plants, ultimately destined for u-FTIR, should sample volume be kept lower to minimize the large amount of non-plastic debris? Should the sample be preserved somehow once it's collected?

12:44:03 From Cynthia Tant : We did 1 L grab samples (and yes, in plastic Nalgene bottles), and uncapped and recapped under the water to avoid atmospheric contamination. Do you think that’s a way to avoid need that field blank or not?

12:46:38 From Barbara Beckingham : Cynthia Tant: In that case the field blank could be that plastic Nalgene bottle filled with water and transported to the study site and an uncap/recap to replicate the plastic that may shed from the bottle cap.

12:48:38 From Yuehan Lu : Did you see the seasonal/temproal variability in large rivers and coastal areas is more controlled by anthropogenic sources/fluxes or natural processes (productivity, discharge)?

12:48:40 From Peter Hazelton : From earlier discussions, it sounds like visual analysis/microscopy is needed for determination of plastics. Is there utility to incorporate particle sizers/coulter counters into quantitation? Do either of you use them?

12:52:51 From Madison Monroe : With wastewater treatment plant effluent (post treatment), would there be a need to further digest the samples if they are typically cleaner?

12:55:06 From Austin Scircle : Yeah, I think that answer pretty much confirmed what I suspected. We collected samples from various stages of the WWTP, however they were relatively high volume (approx. 20 L). However, now that I am depositing onto filters (post digestion and sieving) it doesn't seem compatible w FTIR imaging, due to amounts of solids in certain samples.

12:57:13 From Austin Scircle : We are doing scanning FTIR, it seems that the analysis time and quality are likely hindered by the large amount of solids.

12:57:46 From Kelly Leffler to Krista Capps (she/her)(Privately) : I am collecting air deposition samples in the Smokies and filtering the samples for microplastics. In my samples I have found what look to be pearly white and blue spherical microbeads... have you found anything similar in your sample analysis? I don't have much funding so I can only use visual analysis. They are all almost identical in size

12:59:22 From Jeff Schaeffer : I think that we need consensus on methods and the focus on how to do that is the right approach. But I have to ask a results question: in your experience where have you seen really, really high and really, really low abundances and do those correlate with landscape features? It is sort of related to methods in that one might want a priori knowledge of potential hotspots for stratified sampling designs. Goes to your know your environment idea.

13:07:49 From Arial Shogren (she/her) : Related to the conditions when water/sediment samples are taken (land use, seasonal conditions, discharge, etc.), are there other ancillary variables that are a “must”?

13:11:37 From Barbara Beckingham : I think that antecedent precipitation can be key for water! Also, position in the tidal cycle if you are coastal.

13:11:57 From Jason Love : How are folks doing wet/dry deposition of MPs in the field? I was thinking of using the same equipment that they use for looking at wet/dry deposition of sulfur - two 5 gallon buckets, when it rains a sensor activates and the dry deposition bucket is covered with a stainless steel cover; after rain, the wet deposition bucket is covered. There is a network of these NADP (National Atmospheric Deposition Program) collectors and wondering if they can be tapped into for sampling MPs as part of the sulfur/N sampling procedures. Thoughts?

13:32:47 From Jason Love : Here is one type of automated wet/dry deposition sampler: <https://www.alphaomega-electronics.com/en/productos-medio-ambiente/1809-wetdry-deposimeter-sampler-for-wet-and-dry-deposition.html>

13:34:03 From Barbara Beckingham : We get stainless steel buckets and trays to avoid plastic from restaurant supply stores!

13:34:13 From Cynthia Tant : I really appreciate the comments from Barbara, Rae, and Jeremy about blanks! We’ve struggled with blanks; for example, we did what Barbara suggested and had a ‘bottle blank’, but later found out our DI water had micro plastics (very old system). Do you have suggestions about whether old or new Nalgene bottles are better? The brown bottle idea is great!

13:34:17 From Madison Monroe : In order to create the solution with the calcium chloride, what kind of hydrometer do you use?

13:34:57 From Cynthia Tant : Yes, Krista! And plastic breakdown.

13:39:26 From Cynthia Tant : Yes, thanks! We have since switched water sources and also have a filter on that system.

13:40:49 From Rae : <https://us.vwr.com/store/product/4637487/vwr-specific-gravity-relative-density-and-baume-plain-form-hydrometers-traceable-to-nist>

13:40:56 From Rae : Hydrometer link above!

13:41:14 From Madison Monroe : Thank you!

13:41:52 From Rae : Hydrometer -Item No. 34640-207

13:42:29 From Barbara Beckingham : Thanks Rae!

13:42:36 From Cynthia Tant : Thank you all!

13:51:59 From Justin Murdock : Are you only using ATR for FTIR analysis. I assume most are fairly thick. Are you doing much more than drying samples to prepare them for it? And analyze directly on the filters?

13:57:01 From John Steven Schwartz : Any comments/experience related to atmospheric deposition field sampling?

13:59:27 From Yuehan Lu : Can you talk about the potential intrest/need in new lab method development using some of the more advanced instruments

13:59:39 From Krista Capps (she/her) : <https://docs.google.com/spreadsheets/d/1v6GCG7YJEqvvzj4F62S2C6lBFYuosYTZ8YVjog3prdQ/edit?usp=sharing>

14:00:14 From Yuehan Lu : such as this paper

14:00:16 From Yuehan Lu : <https://pubs.acs.org/doi/10.1021/acs.analchem.0c01928>

14:00:26 From Krista Capps (she/her) : <https://www.alphaomega-electronics.com/en/productos-medio-ambiente/1809-wetdry-deposimeter-sampler-for-wet-and-dry-deposition.html>

14:11:01 From S. Crawford, Ph.D. : Where could we get compositional analysis (i.e. point of origin) of a representative sample of the fibers we have found in our river water samples?

14:13:06 From S. Crawford, Ph.D. : Thanks! Have you identified any toothbrush bristles in any samples?

14:13:57 From S. Crawford, Ph.D. : Yes we have mostly wastewater in our river

14:16:08 From S. Crawford, Ph.D. : I know there are some analytical labs that will do spectrographic analysis and SEM.

14:16:12 From Jeremy Conkle : Great paper on FTIR reporting for µP research: <https://www.sciencedirect.com/science/article/pii/S0025326X20301533>

14:17:24 From S. Crawford, Ph.D. : $250 per sample a couple years ago

14:18:51 From S. Crawford, Ph.D. : We obtained a Citizen Science reduced analytical cost structure with Eurofins Test America - for soil.

14:24:12 From S. Crawford, Ph.D. : Sometimes there is a concern over University lab analyses, versus credential labs, as far as QA/QC (not judging, just an observation). How do you QC your data?

14:24:32 From Zoom user : Are thereAre there labs like some of you run that will analyze samples from us public interest groups (Keepers) at low cost? We have tried commercial labs but they are expensive and not up to speed on all this.

14:25:52 From Zoom user : Sorry about typos but very hard to edit this on iPad

14:28:18 From S. Crawford, Ph.D. : Thank you, great answers

14:30:59 From S. Crawford, Ph.D. : We are a Riverkeeper and we are only able to elucidate microfibers 0.2 um length and larger. No particles, no beads.

14:31:24 From S. Crawford, Ph.D. : Using a visual count method

14:35:10 From Jeremy Conkle : Membrane filters: <https://smile.amazon.com/dp/B075XJ96RJ/ref=cm_sw_em_r_mt_dp_aF7xFbKGEDGTH>

14:39:18 From John Steven Schwartz : Following up on funding questions, any interest from the USEPA?

14:39:53 From John Steven Schwartz : No surprise but just curious.

14:41:06 From Ariunbold’s iPhone : here is also useful funding info: <https://www.nsf.gov/pubs/2020/nsf20050/nsf20050.jsp>