Measurement and Monitoring Methods for Air Toxics and Contaminants of Emerging Concern in the Atmosphere

Informational Webinar Questions and Answers

April 28, 2021

Question: Is there an SBIR/STTR component for this program?

Answer: No. EPA's SBIR program is a contract program, while EPA's Science to Achieve Results (STAR) program is a grant program. You may find more information on SBIR at www.sbir.gov, or about the EPA program at www.epa.gov/sbir. You can also sign up to be notified when EPA's SBIR solicitation is open here: https://www.epa.gov/sbir/sbir-listserv.

Question: Would lower-cost methods be responsive to this RFA for advancement in measurement techniques, assuming appropriate detection limits could be met (e.g., electrochemical, colorimetric, or electro-optical methods)?

Answer: Please refer to Section I.D (Specific Areas of Interest/Expected Outputs and Outcomes) of the RFA. Of note is the following excerpt:

> Of the greatest interest here are techniques that will: 1) provide significant improvements in performance (e.g., by improving detection limit, selectivity, temporal resolution, etc.) while requiring similar resources (including expertise) as that of current techniques; or 2) provide similar performance as that of current techniques but at substantially reduced resource requirements.

Also, responsiveness to the RFA is evaluated by external peer reviewers under peer review criteria #2 (Section V.A).

Question: What are you wanting to test in the air?

Answer: Please refer to Sections I.B. (Background) and I.D (Specific Areas of Interest/Expected Outputs and Outcomes) of the RFA.

Question: What are the EPA priorities in selecting new approaches and technologies?

Answer: New and novel measurement techniques are strongly encouraged, as noted in Section I.D (Specific Areas of Interest/Expected Outputs and Outcomes) of the RFA, and these will be evaluated by external technical peer reviewers (see criteria in Section V.A)

Question: Is there interest in funding development of methods to measure concentrations of toxic chemicals that partition between the gas and particle phases in the atmosphere(i.e., to measure the atmospheric concentrations of the toxic compounds in both phases?)

Answer: The interest is in measuring concentrations in the atmosphere in whatever phase(s) the compounds of focus (air toxics or contaminants of emerging concern) exist in the atmosphere.

Question: Would microplastics be considered an emerging pollutant of concern even if it is not regulated?

Answer: Contaminants that are not regulated are of interest to this RFA. If the proposal focuses on microplastics, the proposal needs to make the case to the reviewers that microplastics should be considered contaminants of emerging concern in the atmosphere. Please note the discussion of what

are considered to be contaminants of emerging concern in the atmosphere in Section I.B (Background) of the RFA as well as the peer review criteria (Section V.A) and relevancy review criteria (Section V.B).

Question: May you clarify having federal agency employee as a co-Principal Investigator (PI)? What role can they be included? If we use their facilities, do we include them as a sub-contractor or a contractor?
Answer: Please see the funding notice (https://www.epa.gov/sites/production/files/2021-03/documents/ae_air_toxics_rfa_march_2021_final.pdf), Section III.A. Excerpt:

> Federal Agencies may not apply. Federal employees are not eligible to serve in a principal leadership role on an assistance agreement. Federal employees may not receive salaries or augment their Agency's appropriations through awards made under this program unless authorized by law to receive such funding.
>
> The applicant institution may enter into an agreement with a Federal Agency to purchase or utilize unique supplies or services unavailable in the private sector to the extent authorized by law. Examples are purchase of satellite data, chemical reference standards, analyses, or use of instrumentation or other facilities not available elsewhere. A written justification for federal involvement must be included in the application. In addition, an appropriate form of assurance that documents the commitment, such as a letter of intent from the Federal Agency involved, should be included.

Please note, EPA grant money cannot be used to fund other Federal agencies, and Federal employees may not serve as PIs or co-PIs.

Question: Are you inviting people to test different technologies that kill airborne pathogens, VOCs, mold, or bacteria?
Answer: No, except air measurements for volatile organic compounds (VOCs) that are classified as air toxics or are considered contaminants of emerging concern in the atmosphere are of interest.

Question: To clarify the "for profit" role, it seems that this can be "goods or services" (specialized equipment) or as consultants. Are their limits for funding (of the $800K) on the former?
Answer: There are no specific monetary limits for using contractors or consultants, but having a high percentage of grant money going to consultants (or, for that matter, subawardees) creates the image of a "pass through." This, in turn, will make reviewers and the Agency question what research role the primary institution or PIs actually play.

Question: The RFA seems to be focused only on the hazardous air pollutants and contaminants of emerging concerns. Will the proposals based on measuring the conventional pollutants, such as $PM_{2.5}$ or their chemical species, but using newer real-time techniques be eligible for this call?
Answer: Criteria pollutants such as $PM_{2.5}$ are not of interest to this RFA. Hazardous air pollutants (HAPs) are of interest, including semi-volatile or non-volatile compounds that are classified as HAPs and that can exist in PM and PM-bound metals that are classified as HAPs.

Question: The 186 different pollutants is a lot of pollutants. Are there some of greater priority? Is a certain focus on a smaller family of pollutants acceptable? How does the 186 different pollutants fit into a winning proposal?
Answer: The RFA is not looking for any single project to address all hazardous air pollutants (HAPs). What HAPs are considered priorities vary by locations and communities. Applications are evaluated for

overall quality of the proposed research according to the peer review criteria (Section V.A) and relevancy review criteria (Section V.B) stated in the RFA. Applications should make the case to reviewers according to these criteria why the compounds being targeted should be considered a priority.

Question: Do you include indoor air quality in the term "air quality"?
Answer: Indoor air quality is not of interest for this RFA.

Question: The RFA seems specific to improvements in continuous air monitoring, so will any fundamental laboratory work be considered for funding or is that limited to, e.g., instrument development, calibration, etc.?
Answer: The intent is that this RFA funds laboratory work only to the extent that it is supporting technique and method development for ambient measurements.

Question: Will monitoring air for bacteria and viruses be considered?
Answer: No.

Question: Can postdoc apply to this grant or be as a co-PI?
Answer: The funding notice does not restrict postdocs from being PIs, as long as the applicant's institution permits it. Post docs may also be supported under this grant. Please note that since post-docs are generally not assistant professors or in an equivalent position, they likely may not qualify for the Early Career grant. Also, part of the peer review criteria concerns the qualifications of the investigators. See Section V.A. of the funding notice. Excerpt:

> Investigators: The degree to which the application demonstrates that the Principal Investigator(s) and other key personnel have the appropriate qualifications (including research training, demonstrated knowledge of pertinent literature, experience and publication records).

Question: Is a white paper appropriate for determining interest prior to a full proposal submission?
Answer: **EPA** only considers full applications. There is no interim application step. Please do not send us your draft research plans.

Question: Are the compounds listed in Table 1 of the RFA considered air toxics of priority, thus proposal address these compounds has higher chance of getting funded?
Answer: Table 1 is not meant to be an exhaustive list, as priorities vary by locations and communities. Applications are evaluated for overall quality of the proposed research according to the peer review criteria (Section V.A) and relevancy review criteria (Section V.B) stated in the RFA. Applications should make the case to reviewers according to these criteria why the compounds being targeted should be considered a priority.

Question: The RFA seems to focus on regulated hazardous air pollution (HAPs). Are measurements of other chemical compounds that are not regulated still an acceptable focus?
Answer: Contaminants that are not regulated are of interest to this RFA. Applications are evaluated for overall quality of the proposed research according to the peer review criteria (Section V.A) and relevancy review criteria (Section V.B) stated in the RFA. Applications should make the case to reviewers according to these criteria why the compounds being targeted should be considered a priority.

Question: Is something like sarin gas of interest in this RFA?
Answer: No. Please note the discussion of what are considered to be contaminants of emerging concern in the atmosphere in Section I.B (Background) of the RFA.

Question: Are wildland fire emissions, as a source of pollutants, of interest for this RFA?
Answer: The proposal should address at least one of the two research questions specified in Section I.D (Specific Areas of Interest/Expected Outputs and Outcomes) of the RFA. Research question #1 is agnostic to sources. As stated in the RFA, the focus of research question #2 is fugitive emissions; please refer to Section I.B (Background) for explanation of fugitive sources.

Question: Is carbon dioxide considered an air toxin?
Answer: No.

Question: Will real time ethylene oxide and volatile per- and polyfluoroalkyl substances (PFAS) by mobile platforms using proton-transfer-reaction mass spectrometry (PTR-TOF-MS) to part per trillion by for profit companies be considered?
Answer: Ethylene oxide and PFAS are considered contaminants of emerging concern in the atmosphere, as noted in Section I.B. (Background) of the RFA. Mobile near source measurement methods are part of research question #2 in Section I.D (Specific Areas of Interest/Expected Outputs and Outcomes) of the RFA. To ensure fairness in competition, EPA's policy is that EPA staff cannot discuss specific research approaches or ideas with potential applicants. For-profit companies are not eligible for this grants program. For-profit companies can be consultants or contractors on eligible applications; however, competitive procurement procedures apply, as outlined in Section IV.C.7.b.6 of the RFA (page 34 of the RFA PDF file).

Question: During the webinar, there was a mention of lower-cost methods would need to have the same performance as existing methods, but that would likely not be the case. The RFA states that there is a need for lower cost and greater spatial coverage, so it seems that there would be interest in giving up some on performance to gain more in spatial/temporal resolution. Could you clarify?
Answer: "Lower" is a relative term. As noted is in Section I.D (Specific Areas of Interest/Expected Outputs and Outcomes) of the RFA, "of the greatest interest here are techniques that will: 1) provide significant improvements in performance (e.g., by improving detection limit, selectivity, temporal resolution, etc.) while requiring similar resources (including expertise) as that of current techniques; or 2) provide similar performance as that of current techniques but at substantially reduced resource requirements."

Question: Are you considering outdoor air toxics at neighborhood/community levels?
Answer: Yes.