Special Notice:
ARPA-H Building Resilient Environments for Air and Total HEalth (BREATHE)
Hybrid Proposers' Day
ARPA-H-SN-24-107

ADVANCED RESEARCH PROJECTS AGENCY FOR HEALTH

RESILIENT SYSTEMS OFFICE

Special Notice (SN): ARPA-H-SN-24-107	
OPPORTUNITY	ARPA-H Building Resilient Environments for Air and Total HEalth (BREATHE)
EVENT	Hybrid Proposers' Day
EVENT DATE	May 2nd, 2024
PROGRAM WEBSITE	https://arpa-h.gov/research-and-funding/programs/breathe
REGISTRATION DEADLINE	April 30th, 2024, 12 PM ET (in-person attendance registration) April 30th, 2024, 5 PM ET (virtual attendance registration)
REGISTRATION WEBSITE	https://solutions.arpa-h.gov/BREATHE/
REGISTRATION POC	BREATHE@ARPA-H.gov
TECHNICAL POC	Dr. Jessica Green, Program Manager, Resilient Systems Office

PROPOSERS' DAY

The Advanced Research Projects Agency for Health (ARPA-H) is hosting a Proposers' Day in support of the Building Resilient Environments for Air and Total HEalth (BREATHE) Program. The Proposers' Day will be a one-day hybrid event on May 2nd, 2024, beginning around 8:30 AM to approximately 5 PM Pacific Time (PT) in-person (the virtual event will end around 2PM PT). Advance registration is required for in-person and virtual attendance. The registration deadline for the BREATHE Program Proposers' Day is April 30th, 2024 at 12 PM Eastern Time (ET) for in-person attendance, and 5 PM ET for virtual attendance. ARPA-H anticipates releasing the draft BREATHE Program Solicitation (PS), ARPA-H-SOL-24-107, in April 2024 and the final PS in May 2024. When released, the draft and final PS will be available at https://sam.gov.

PROPOSERS' DAY GOALS

1. Introduce the ARPA-H BREATHE program goals and vision to the research community;
2. Clarify the logistics of an ARPA-H program as well as BREATHE-specific objectives and milestones;
3. Review the BREATHE program deliverables;
4. Encourage and promote teaming among potential Performers; and
5. Collect relevant questions and feedback on the program. Questions and answers will be maintained on a Q&A document at https://arpa-h.gov/research-and-funding/programs/breathe.

PROGRAM GOALS

The BREATHE program is investing in indoor air quality technologies that reduce the risk of people contracting respiratory diseases while inside. The program will combine advances in biosensors, risk assessment, and building controls to create integrated diagnostic and therapeutic indoor air-management systems that automatically detect and react to airborne pathogens and allergens. The BREATHE program envisions buildings embedded with sensors that autonomously and continuously monitor biological content of interior air, software that evaluates and models health risks in buildings from sensor data and other environmental data streams, and smart automation systems that react to health risk reports by adjusting conditions inside the building in the most cost-effective way to promote the well-being of occupants. These

technologies will synergize to create an unprecedented ability to monitor and manage indoor air quality to the benefit of anyone who spends time indoors.

The BREATHE Program technologies will be evaluated in buildings nationwide to establish efficacy of indoor air quality monitoring and response systems. The program aims to deliver statistically meaningful results for multiple building types, across broad geography and climate zones, and improve health for all Americans. Validated indoor air quality measures and air treatment demonstrations will lay the foundation for ubiquitous healthy indoor air that protects Americans from exposure to major causes of respiratory illnesses and airborne diseases.

TECHNICAL APPROACH

The BREATHE Program will take an interdisciplinary approach to advancing technologies across biosensing, environmental learning models, and indoor air management as part of a comprehensive strategy to create an integrated capability. As such, ARPA-H is interested in innovative solutions that address all three Technical Areas (TAs) introduced below.

1. ***Indoor Air Biosensors (TA1):*** *Autonomously monitor the biological content of indoor air.* Emerging technologies, including aerosol capture, molecular diagnostics, and microfluidics will enable the creation of scalable, multiplexed bioaerosol-sensing devices capable of simultaneously detecting dozens of known pathogens and allergens.
2. ***Respiratory Risk Assessment Software (TA2):*** *Assess health risks of breathing a wide variety of bioaerosols.* Modeling techniques powered by a plethora of data streams including biosensor outputs, health outcome data, outdoor air quality and imagery data (e.g., satellite and street view), occupancy rates, and wastewater surveillance will lead to effective prediction of building occupants' health risks due to exposure to biological components in the indoor air.
3. ***Healthy Building Controls & System Integration (TA3):*** *Leverage protective and responsive building interventions to reduce bioaerosol exposure risk at optimal costs.* Efficient, real-time, data-driven technologies developed by the program, coupled with optimization analytics, will reduce occupant health risks, and improve indoor air quality by leveraging existing intervention approaches.

PROPOSERS' DAY INFORMATION

Registration Information

In-person attendance is limited by the venue capacity and early registration is strongly recommended. In-person registration may close prior to the registration deadline due to the venue capacity being met. Should demand exceed venue capacity, organizations may be asked to limit the number of participants attending in-person. The determination of what constitutes an organization will be made by the ARPA-H Program Manager. Registration for the virtual event is unlimited. Any changes to the registration deadline will be posted on the registration website. Participants must register in advance through the registration website for in-person or virtual attendance. The registration deadline for the BREATHE Program Proposers' Day is April 30th, 2024, at 12 PM ET for in-person attendance, and 5 PM ET for virtual attendance. **There will be no same-day registration**. In-person registration must be confirmed by ARPA-H. All attendees, regardless of participation status will receive an email with the webinar link prior to event kick-off. **The event is closed to the general public and media.**

Event Format

The ARPA-H BREATHE Proposers' Day will be a hybrid one-day event on May 2nd, 2024, beginning around 8:30 AM to approximately 5 PM PT in-person (the virtual event will end around 2 PM PT). It will be hosted in-person in Oakland, California and virtually via Zoom for Government.

The BREATHE Proposers' Day will include presentations by ARPA-H, including technical presentations covering the BREATHE Program as well as informational sessions during which questions from participants will be answered. The Proposers' Day will host a limited number of lightning talks (participation is limited to in-person attendees but all attendees will be able to view the lightning presentations). In-person attendees will also have the opportunity to participate in a poster session to highlight the organization's relevant capabilities to foster potential teaming arrangements. Please review the individual event element sections following the DRAFT agenda for more information.

Proposers' Day Notional DRAFT Agenda*

Thursday, May 2, 2024 (Times are listed in PT)	
9:00-12:10 pm	Introductions, BREATHE program overview, other presentations, and lightning-talks
12:10-1:30pm	Break for lunch
1:30-2:05pm	Response to Q&A and Closing Remarks
2:05- 4:50pm	Poster Session (In-person only)
3:00-4:55pm	1:1 Sidebars with BREATHE Program Manager (In-person, and by confirmed booking appointment only)

* Agenda subject to change. All registered attendees will be receiving a final agenda prior to event kick-off.

1:1 Sidebar Meetings (Proposers' Day, In-Person on May 2; virtually following)

Sidebar sessions will be hosted for in-person attendees only on May 2nd. Virtual sidebar meetings may be available on May 6th and 7th. Requests for a sidebar can be made via the registration website, and requests should be received no later than the registration cutoff date. Only one (1) sidebar will be allowed per organization and will be available on a first-come basis. Sidebar discussions will be limited to five (5) minutes. Due to limited slots both in-person and virtually, registration does not guarantee a sidebar appointment. Confirmation of sidebar slots will be sent by the BREATHE team prior to Proposers' Day.

Posters (Proposers' Day, In-Person only)

During registration, interested attendees and/or proposers are invited to request space for one poster (to fit within a space measuring 3.75 feet wide by 3.75 feet high - landscape layout preferred, on paper or cloth) that summarizes their interests and capabilities relevant to the BREATHE program. During this session, proposers will be split in 3 categories based on TA alignment (1- Indoor Air Biosensor, 2- Respiratory Risk Assessment Software, and 3-Healthy Building Controls & System Integration), and proposers will have the opportunity to present their work and answer questions from parties interested in exploring a collaboration. Posters will be accepted on a first-come, first-served basis distributed across TAs, until the space constraint is reached. Interested attendees must indicate their intention to present a poster during registration. Poster presentations are restricted to those attending the meeting in-person.

Lighting Talks (Proposers' Day, In-Person only)

During registration, in-person attendees are invited to indicate their interest to present a lighting talk to the in-person and virtual attendees during Proposers' Day. The lighting talk sessions will occur during 3 sessions based on TA (1- Indoor Air Biosensor, 2-Respiratory Risk Assessment Software, and 3-Healthy Building Controls & System Integration). These sessions will commence with a brief introduction by the BREATHE Program Manager, providing technical detail to each TA followed by a series of lightning talks by potential performers, limited to a maximum of 3 minutes and accompanied by a slide presentation.

Those interested in presenting a lighting talk will be required to fill out a brief questionnaire emailed to them following registration. The questionnaire must be returned to ARPA-H by April 22, 2024, regardless of the registration date. The number of lighting talks is limited. Selections will be based on the responses to the questionnaire and selections will aim to capture a breadth of technologies, methodologies, and other relevant aspects within each TA. Those selected to give lighting talks for their respective TA will be notified by April 23, 2024.

SUPPLEMENTAL INFORMATION

Teaming Profiles

Interested parties are invited to submit a 'teaming profile' via the Microsoft Forms link here and below. The teaming profile will describe the technical competencies, team capabilities, team composition, research areas of interest, unique facilities, and other capabilities, as they relate to the program, and desired technical/other competencies sought from other potential team partners. The profile will include, at a minimum:

1. Contact information, to include name, organization, email, telephone number, mailing address, and website;

2. Brief description of the proposer's technical competencies;

3. Desired technical competencies and facilities from other potential team members, if applicable.

Proposers are encouraged to submit teaming profiles via the link. Teaming profiles will be made available through a forthcoming Teaming Page on the ARPA-H BREATHE website. Specific content, communications, networking, and team information are the sole responsibility of participants. ARPA-H does not endorse any participating organization or exercise any responsibility for improper dissemination of the team profiles.

Administrative

All administrative and technical questions regarding the ARPA-H BREATHE Proposers' Day event should be directed to ARPA-H Solutions. Please refer to the Proposers' Day Special Notice number (**ARPA-H-SN-24-107**) in all correspondence.

This special notice is issued solely for information and potential new project planning purposes; the notice does not constitute a formal solicitation for proposals nor solution summaries. Any proposals or solution summaries received in response to this notice will be **discarded.**

Attendance is voluntary and is not required to submit a proposal or solution summary to subsequent ARPA-H BREATHE research solicitation (if any) on this topic. ARPA-H will not reimburse costs incurred in responding to this Special Notice. Respondents are advised that ARPA-H is under no obligation to

acknowledge receipt of any information received or provide feedback to respondents with respect to any information submitted under this Special Notice.