

MEMORANDUM OF UNDERSTANDING

BETWEEN THE

DEPARTMENT OF HOMELAND SECURITY SCIENCE AND TECHNOLOGY DIRECTORATE

AND

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

1. **PARTIES.** The parties to this Memorandum of Understanding (MOU) are the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) and ASHRAE, individually referred to as “the Party” and collectively referred to as “the Parties.”

Founded in 1894, ASHRAE is a global professional society committed to advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration and their allied fields. ASHRAE focuses on research and standards writing; and developing and disseminating minimum standards, guidelines and best practices for advancing heating, ventilation, air conditioning, and refrigeration. ASHRAE provides resources to improve building systems, energy efficiency, indoor air quality, refrigeration and resilience.

2. **AUTHORITY.** DHS S&T enters into this MOU pursuant to the Homeland Security Act of 2002, 6 U.S.C. §182(4).
3. **PURPOSE.** This MOU defines parameters by which the Parties will engage to discuss and share information about emerging research results and technologies in HVAC systems and public health concerns including SARS-CoV-2, to include types of filters and HVAC systems that could support building occupant health and safety across the Homeland Security Enterprise. The Parties agree that should their discussions identify opportunities to pursue joint research or other collaborative opportunities, the Parties will enter into Cooperative Research and Development Agreements (CRADAs) or other appropriate agreements.

DHS S&T intends to utilize ASHRAE’s expertise to provide DHS S&T information about HVAC systems and modeling of possible transmission of SARS-CoV-2 through the air, and the implications of air flow through building HVAC systems.

The Parties intend to discuss how to mitigate the movement of airborne pathogens through building systems including, but not limited to:

1. Ventilation necessary for reducing the risk of exposure
2. Effective filtration efficiencies to capture respirable particles
3. The efficacy, safety and implementation of different air disinfection technologies and operating strategies within the DHS enterprise or in public facilities
4. The effect of air distribution, directionality and objects within spaces on exposure risk.
5. Reduced occupancy, and space allocation and room set-up as risk mitigation strategies.

This MOU is not part of a solicitation, Request for Proposal (RFP), or any procurement action, nor is the intent of this MOU to seek consensus advice. It does not replace current business practices of free and open competition in the Federal procurement of goods and services. Rather, it enables the Parties to exchange information more formally.

4. RESPONSIBILITIES.

As resources allow and priorities dictate, DHS will:

- a. Engage with ASHRAE to identify opportunities to share non-sensitive data that will inform models and solutions relating to SARS-CoV-2 and other biological and chemical threats to public health through the following study areas:
 1. HVAC systems, to include types of filters, air cleaners and HVAC systems recommended to support occupant safety;
 2. Effective layering of personnel safeguards including masking, HVAC transport phenomena, particulate filtration systems, air exchange quantities, temperature and humidity control, and use of various air cleaning technologies including ultraviolet light;
 3. Required outdoor air flow rates necessary to support occupant safety in various types of spaces, and compatibility with existing purpose-driven ventilation needs – office, laboratory, training, firing range;
 4. Sustainable building practices – trade-off studies for filters, ventilation, and energy efficiency and resilience alongside potential side-effects of COVID-19 prevention HVAC modifications.
- b. Share information concerning cost-effective strategies for building performance analysis that consider security, resilience and sustainability under normal and disaster (or extreme) operating conditions
- c. Identify opportunities to transfer technologies, knowledge and capabilities by entering into CRADAs and other relevant agreements; and
- d. Review and adjudicate ASHRAE's requests to disseminate, discuss, post or release DHS data or research results, or references to this collaboration.

- e. Request written approval from ASHRAE to disseminate any final knowledge products that include information it receives from ASHRAE; ASHRAE shall only restrict such distribution if the DHS final knowledge product contains ASHRAE's intellectual property or proprietary or sensitive business information.
- f. Meet with ASHRAE within 30 days of the Execution of this MOU as feasible, to share information and identify possible collaborative activities that the Parties may engage in pursuant to a CRADA or other relevant agreement.

As resources allow and priorities dictate, ASHRAE will:

- a. Engage with DHS to identify opportunities to share non-sensitive data that will inform models and solutions relating to SARS-CoV-2 and other biological and chemical threats to public health through the following study areas:
 - 1. HVAC systems, to include types of filters and HVAC systems recommended to support occupant safety;
 - 2. Effective layering of personnel safeguards including masking, HVAC transport phenomena, particulate filtration systems, air exchange quantities, temperature and humidity control, and use of various air cleaning technologies including ultraviolet light
 - 3. Required outdoor air flow rates necessary to support personnel safety in various types of spaces and compatibility with existing purpose-driven ventilation needs – office, laboratory, training, firing range
 - 4. Sustainable building practices – trade-off studies for filters, air exchanges, and energy efficiency and resilience alongside potential side-effects of COVID-19 prevention HVAC modifications.
- b. Share information concerning cost-effective strategies for building performance analysis that consider security, resilience and sustainability under normal and disaster (or extreme) operating conditions
- c. Share guidance, as available, for enhanced HVACR systems design, construction and operation that could enhance or improve human health, safety, welfare, productivity and learning within the built environment.
- d. Seek the written approval of DHS prior to releasing any documents or statements to the public or to ASHRAE's members that may contain DHS data or research results, or references to this collaboration. Work with DHS to review any final knowledge products DHS intends to release to the public.
- e. Consider promoting publicly released knowledge products from DHS S&T such as Journal Articles, Factsheets and Master Question Lists with their membership
- f. Identify possible opportunities to transfer technologies, knowledge and capabilities by entering into CRADAs and other relevant agreements; and

- g. Meet with DHS within 30 days of the Execution of this MOU as feasible to share information.

5. POINTS OF CONTACT (POCs).

The POC for DHS is:

*Megan Mahle
Director, Industry Partnerships
Office of Innovation and Collaboration
202.254.2245
megan.mahle@hq.dhs.gov*

The POC for ASHRAE is:

*Jeff H. Littleton
Executive Vice President
404-636-8400
jlittleton@ashrae.org*

- 6. EFFECTIVE DATE.** The terms of this MOU will become effective upon the final signature and will remain in effect for three years from the effective date.
- 7. MODIFICATION.** This MOU may be modified upon the mutual written consent of the Parties.
- 8. TERMINATION.** Either Party may, upon 30 days written notice, terminate its participation in this MOU. The MOU will automatically terminate three years from the Effective Date. The MOU may be extended by mutual written agreement of the Parties. If either Party terminates the MOU, it shall not be liable to the other Party or its contractors or subcontractors for any costs resulting from or related to the termination, including, but not limited to, incidental or consequential damages.
- 9. AVAILABILITY OF FUNDS AND RESOURCES.** Each Party will handle and expend its own funds and make decisions about resource use and allocation for carrying out this MOU. The responsibilities that each Party assumes under this MOU are contingent upon available funds from which expenditures legally may be made, and for which resources are available. Nothing in this MOU, in and of itself, obligates either Party to expend funds, commit resources or enter into any contract, assistance agreement, interagency agreement, or other financial obligations.
- 10. LIMITATION OF LIABILITY.** Under no circumstances shall either Party be liable to the other for any cause or action arising out of this MOU, either direct or indirect damages.

11. REIMBURSEMENT. The Parties agree that this MOU is neither a fiscal nor a funds obligation document, nor does it supplement existing statutory authorities of the signatories.

12. GENERAL PROVISIONS. Each Party's participation in cooperative activities under this MOU is subject to the availability of funds, resources, and personnel and is to be conducted in accordance with the following overriding provisions:

- a. Nothing in this MOU is intended to supersede current law or regulation or relieve the Parties from compliance with all applicable laws and regulations. If a term of this MOU is inconsistent with such authority, then that term will be invalid, but the remaining terms and conditions of the MOU will remain in full force and effect.
- b. This MOU in no way restricts any of the Parties from participating in similar activities or arrangements with other public or private agencies, organizations, or individuals.
- c. This MOU describes, in general terms, the basis on which the Parties intend to cooperate.
- d. The Parties agree that they will not use the seal, name, insignia, symbols, trademarks, etc. of the other organizations for marketing or advertising purposes without prior written consent from the other organizations. Notwithstanding the foregoing, the Parties will be permitted to state orally and in writing the fact that the relationship covered by this MOU is in effect.
- e. An employee of one Party is not an agent or an employee of another Party to this MOU and may not create an appearance that the employee is an agent or an employee of another Party. No joint venture, partnership, or any new legal entities are created between the Parties by this MOU.
- f. **Sensitive But Unclassified Information.** The Parties will cooperate with each other to protect Sensitive But Unclassified (SBU) Information, and any other information identified by the furnishing Party as in need of special security controls. If such information is either created or provided by one Party to the other, the furnishing Party will mark the data accordingly and the receiving Party will protect it from unauthorized disclosure, including release to the public. At a minimum, the Parties will protect Sensitive But Unclassified Information in accordance with DHS management Directive 11042.1, *Safeguarding Sensitive But Unclassified (For Official Use Only) Information*.
- g. **Information Releases and Non-Disclosure.** No information may be made available to the public without first receiving written approval from DHS S&T. Nonfederal individuals performing activities pursuant to this MOA who may have access to Sensitive But

Unclassified Information (e.g., For Official Use Only) shall sign the DHS form Non-Disclosure Agreement (DHS Form 11000-6) and shall safeguard such information in accordance with DHS Management Directive 11042.1, *Safeguarding Sensitive But Unclassified (For Official Use Only) Information*.

APPROVAL SIGNATURE AND DATE:

*Robert P. Burns
Executive Director
Office of Innovation and Collaboration
Science and Technology Directorate
Department of Homeland Security*

DATE _____

*Charles E. Gullledge III
President
ASHRAE*

DATE _____

*Jeff H. Littleton
Executive Vice President
ASHRAE*

DATE _____
