

Professor of Mechanical Engineering
Colorado State University
Professor of Environmental and Occupational Health
Colorado School of Public Health
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Education

Ph.D., Environmental Engineering	<i>University of North Carolina at Chapel Hill (2003)</i>
M.S., Environmental Engineering	<i>University of North Carolina at Chapel Hill (1999)</i>
B.S., Civil Engineering	<i>University of Vermont (1996)</i>

Professional Experience*(current appointments in bold)*

Professor 2016-present	Department of Mechanical Engineering, Walter Scott Jr. College of Engineering, Colorado State University (primary)
Associate Department Head for Graduate Studies, 2016-2019	Department of Mechanical Engineering Colorado State University
Founder 2013-present	Access Sensor Technologies, LLC (a CSU spinout company for environmental diagnostics)
Professor 2016-present	Department of Environmental and Radiological Health Sciences Colorado State University (affiliate appointment)
Director 2013-present	Center for Energy Development and Health The Energy Institute at Colorado State University
Professor 2011-present	Department of Environmental and Occupational Health Colorado School of Public Health (affiliate appointment)
Associate Faculty 2007-present	School of Biomedical Engineering Colorado State University
Principal Investigator 2006-present	Engines and Energy Conversion Laboratory Dept. of Mechanical Engineering, Colorado State University
Associate Professor 2014-2016	Department of Mechanical Engineering Colorado State University
Associate Department Head 2011 - 2013	Department of Environmental and Radiological Health Sciences Colorado State University
Assistant Professor 2004 - 2010	Department of Environmental and Radiological Health Sciences Colorado State University
Assistant Professor 2009-2011	Department of Environmental and Occupational Health Colorado School of Public Health

Professional Experience*(continued)*

Visiting Scientist 2006-2009	Clinical Research Branch National Health and Environmental Effects Research Lab, U.S. EPA
Postdoctoral Research Fellow January 2003 – July 2004	Environmental Characterization and Apportionment Branch National Exposure Research Laboratory, U.S. EPA
Special Appointment August 2003 – August 2004	Department of Environmental Sciences and Engineering University of North Carolina at Chapel Hill
Environmental Engineer June – September 1999, 2000	Atmospheric Methods and Monitoring Branch National Exposure Research Laboratory, U.S. EPA

Water Resources Engineer
July 1996 – January 1997

The Pitometer Associates
Boston, MA

Honors and Awards

Outstanding Reviewer Award, Journal of Aerosol Science and Technology, 2023
Faculty Innovation and Entrepreneurship Award, Walter Scott Jr. College of Engineering, Colorado State University, 2021
David L. Swift Award for Best Paper, American Industrial Hygiene Association / Aerosol Technology Committee, "Design and performance of UPAS inlets for respirable and thoracic mass sampling" 2021
Cover Issue, Annals of Work Exposure and Health, 65(1) 2021
Finalist, NASA Earth Space Air Prize, 2018
George T. Abell Outstanding Faculty Researcher Award, Walter Scott Jr. College of Engineering, Colorado State University, 2017
David L. Swift Award for Best Paper, American Industrial Hygiene Association / Aerosol Technology Committee, "Sampling Efficiency of Modified 37-mm Sampling Cassettes using Computational Fluid Dynamics" 2017
Top 25 Most Accessed Paper, Analyst, "Paper Based Analytical Devices for Environmental Analysis" 2016
Best Paper, Indoor Air, "Pro-inflammatory Effects of Cookstove Emissions on Human Bronchial Epithelial Cells" 2014
Cover Issue, Annals of Occupational Hygiene, 58(4), 2014
Outstanding Project Team, Inhalable Particles Roundtable, AIHA 2011
Cover Issue, Annals of Occupational Hygiene, 54(4) 2010
Best of Session Poster, AIHce, Denver, CO, May 2010, 2011
Cover Issue, Journal of Environmental Monitoring, 11(7) 2009
Best of Session Presentation, presented by the Aerosol Technology Committee, AIHce, Toronto, CA, June 2009
Leadership Award, American Industrial Hygiene Association, 2009
Best Teacher Award Nomination, CSU, 2006
K25 Career Development Award, NIEHS 2006
"S" Award for Special Research Contribution, U.S. EPA, 2003
Best paper, AIHA Journal, "Oil Mist Concentration: A Comparison of Sampling Methods", 1999
Bunker Award for Most Promising Masters Student, UNC, 1999
American Industrial Hygiene Fellowship Award, 1998
Tau Beta Pi, Chi Epsilon Honor Societies (University of Vermont)
Dean's List, University of Vermont, 1992, 1999

Research Grants and Contracts*(as CSU principal investigator only; total costs shown)*

- "Rapid Analytics and Deployment of Sensor Networks for Emergencies (RADSENSE)." 2025-2026. PI: Volckens. NSF-ASCEND Engine. 2315760-00006. (\$275,000)
- "Mountain West ACE-CH Hub: Phase II." 2025-2029. Subaward PI: Volckens. NIH (\$988,493)
- "PM2.5 Metals, Oxidative Potential, Exposure, and Risk Assessment (PM OPERA): A National Morbidity and Mortality Study" 2024-2029. PI: Volckens. NIH/NIEHS. R01ES035767 (\$3,840,545)
- "SMASH: Situational Awareness with Mobile Air Sampling for Hazards 2025-2027. PI: Volckens. CO OEDIT. (\$180,000)
- "Gulf Coast Community Air Toxics Survey 2" 2025. Environmental Defense Fund. PI: Volckens (\$216,000)
- "Gulf Coast Community Air Toxics Survey" 2024. Environmental Defense Fund. PI: Volckens (\$47,000)
- "Advancing Sustainable Household Energy Solutions (ASHES)" 2020-2025. EPA Cooperative Agreement. PI: Volckens. 83998701. (\$385,500)
- "Citizen-Enabled Aerosol Measurements for Satellites - NASA Summer Student Program" 2020-2022. Bay Area Environmental Research Institute. PI: Volckens. (\$80,685)
- "Improving the Effectiveness of Non-Medical Masks and Face Coverings." 2020-2021. WHO / CU Denver. PI: Volckens. (\$58,075)
- "Reducing Bioaerosol Emissions and Exposures in the Performing Arts: A Scientific Roadmap for a Safer Return from COVID19." 2020-2022. PI: Volckens. Made possible by philanthropic donations to the CSU School of Music, Theatre, and Dance. (\$103,000)
- "Development of versatile technology for tracking personal exposure to SARS-CoV-2." 2020-2022. PIs: Henry, Volckens. Supplement to R33ES24719. (\$328,555)
- "Sustainable Household Energy Adoption in Rwanda (SHEAR): Promoting Rural Health with Solar and Gas." 2019-2026. NIH/NIEHS PIs: Clark, Volckens. R01ES029995 (\$3,541,422)
- "A Citizen-Science Approach to Occupational Hazard Assessment." 2019-2024; CDC/NIOSH, PIs: Volckens, Carter. R01OH011660 (\$2,164,528)
- "A Direct-Reading Inhalable Particle Sizer with Elemental Composition Analyzer." 2018-2020; CDC/NIOSH, PIs: Yalin, Volckens. R21OH011287 (\$381,152)
- Implementation Phase: "Citizen-Enabled Aerosol Measurements for Satellites (CEAMS): A Network for High-Resolution Monitoring of PM2.5 and Aerosol Optical Depth" 2017-2021; NASA, PI: Volckens. 80NSSC18M0120 (\$1,606,896)
- Prototype Phase: "Citizen-Enabled Aerosol Measurements for Satellites (CEAMS): A Network for High-Resolution Monitoring of PM2.5 and Aerosol Optical Depth" 2017-2018; NASA, PI: Volckens. NNX17AF94A (\$161,000)
- "Air Quality Monitoring for the 21st Century: A Crowdsourced, Satellite-Enabled, Low-Cost Sampler" 2017-2018; Colorado Office of Economic Development, PI: Volckens (\$125,000)
- "A low-cost sensor network for wildfire smoke detection and monitoring" 2016-2017; Joint Fire Science Program Graduate Research Innovation Fellowship, PI: Volckens, Kelleher. 16-2-01-3 (\$25,000)
- "A New Paradigm for Workplace Air Sampling and Cost-Effective Exposure Assessment" 2015-2019; CDC/NIOSH, PIs: Volckens, Henry. R01OH010662 (\$1,994,886)
- "Wearable, Low-Cost Air Sampler"; 2015-2016; Colorado Office of Economic Development, PI: Volckens (\$69,644)
- "Low-Cost, Versatile Sampler for Personal PM Exposure by Microenvironment"; 2015-2020; NIH/NIEHS, PIs: Volckens, Henry. R33ES24719 (\$2,068,218)
- "Cookstove air pollution: Emission profiles and subclinical effects of exposure"; 2014-2019; NIH/NIEHS, PIs: Volckens, Peel. R01ES023688 (\$2,800,124)
- "Measuring Aqueous Metals Concentrations with the Chemometer"; 2014-2015; Colorado Office of Economic Development, PIs: Henry, Volckens. (\$80,000)

Research Grants and Contracts*(continued)*

- "Quantifying the climate, air quality and health benefits of improved cookstoves: An integrated laboratory, field and modeling study" 2013-2016; U.S. EPA Star Grant, PI: Volckens. RD83543801 (\$1,500,000)
- "Evaluation of A Personal Sampler for Quantitative Identification of Engineered Nanoparticles in Air" 2013-2014; U.S. EPA, PI: Volckens. EP-13-H-000188 (\$150,000)
- "Design, evaluation, and validation of a next-generation inhalable aerosol sampler"; 2012-2016; CDC/NIOSH, PIs: Volckens, Anthony, Sleeth. R01OH010295 (\$2,094,398)
- "A Portable Spectrometer for Inhalable Aerosol Size Distributions"; 2012-2014; CDC/NIOSH R21OH010117 (\$390,400)
- "The Commuter Exposure Study: Linking Exposure, Source-Receptor Models, and Health"; 2012-2017; NIH/NIEHS, PIs: Volckens, Peel. R01ES020017 (\$2,072,576)

"Development of a Microfluidic Paper Analytic Device (μ PAD) for Airborne Metals"; 2011-2014; CDC/NIOSH, PIs: Volckens, Henry R21OH010050 (\$405,895)

"Pilot Research Program (High Plains Intermountain Center for Agricultural Health and Safety)"; 2011-2016; CDC/NIOSH (MPI) U54OH008085 (\$501,351)

"Development of Personal Sampling Technology for Nanoparticle Exposure Assessment"; 2011-2012; PA Nano (subaward, RJ Lee Group, Inc.) (\$60,000)

"Is Green Diesel Healthy Diesel?"; 2011-2012; CSU Clean Energy Supercluster (\$15,000)

"A Portable, Fast Sensor for Oxidative Capacity of Particulate Air Pollution"; 2010-2013; NIH/NIEHS (MPI) R21ES019264 (\$396,824)

"A Personal Sampler for Assessing Inhaled Nanoparticle Exposures"; 2008-2010; CDC/NIOSH R03OH009381 (\$143,006)

"Combustion Chemistry and Pollutant Emissions from Algae-Derived SVO, FAME and HTRD"; 2008-2009; (Co-PI) CSU Clean Energy Supercluster (\$35,000)

"A High-Flow Personal Sampler for Inhalable Aerosol"; 2007-2009; CDC/NIOSH R21OH009114 (\$421,081)

"Lung Deposition Sampler for Inhalable Aerosol"; 2007-2009; CDC/NIOSH R03OH009248 (\$135,956)

"Engineering an In-Vitro Lung for Air Pollution Toxicology"; 2006-2011; NIH/NIEHS K25ES014378 (\$695,118)

"Novel PM Exposure Assessment for Children with Asthma"; 2006-2007; CSU/CVMBS (\$20,000)

"A Lung-Deposition Model for Particulate Matter"; 2005-2006; CSU/CVMBS (\$20,000)

University Fellowships (UNC Chapel Hill)

NIEHS Doctoral Student Training Grant, 2002

U.S. EPA NNEMS Fellow, 2000-2002

UNC Board of Governors Fellowship, 1999-2002

NIOSH-UNC Pilot Project Research Training Grant, 2000

NIOSH Traineeship Award, 1997

Teaching

Principal Instructor

Colorado State University

MECH 476 "Mechanical Engineering Data Analysis in R." 2020-

MECH 577 "Aerosol Physics and Technology" 2017-

MECH 342 "Mechanics and Thermodynamics of Flow Processes" 2015

EH 726 "Aerosols and Environmental Health" 2004-2015

EH 636 "Control Methods for Industrial Hygiene" 2005-2014

University of North Carolina at Chapel-Hill

ENVR 119 "Introduction to Aerosol Science," co-instructor 2003

Teaching

(continued)

Guest Lecturer

AS 526 "Health Effects of Air Pollution", 2 lectures, 2005, 2008

EH 502 "Risk Assessment and Toxicology", 1 lecture, 2005, 2006

EH 446 "Air Pollution and Human Health," 1 lecture, 2004-2006

EH 526 "Aerosol Measurement," 1 lecture, 2004-

EH 526 "Control Methods for Industrial Hygiene" 1 lecture, 2009-

EH 693b "Occupational and Environmental Health Colloquium"

ENVR 103 Seminar "Semivolatile Aerosols," 1 lecture, 2002

ENVR 245 "Electrostatic Precipitators," 4 lectures, 2001

ENVR 145 "Evaporation and Condensation," 3 lectures, 2000

Service (external)

President

Board of Directors, Journal of Occ. and Environ. Hygiene, 2009

Chair

AIHA Aerosol Technology Committee, 2008-2010

AAAR Aerosol Control Technology Working Group, 2001-2002

AAAR Health Related Aerosols Working Group, 2014-2015

Guest Editor

Special Issue on Low-Cost Sensors. Atmospheric Environment (2019)

Special Issue on Indoor Air, Aerosol Science & Technology (2025)

Technical Reviewer

ACS Sustainable Chemistry and Engineering

Aerosol Science and Technology

Annals of Occupational Hygiene

American Industrial Hygiene Association Journal

Applied Occupational and Environmental Hygiene

Atmospheric Chemistry and Physics
 Atmospheric Environment
 Biomass and Bioenergy
 Cell Biology and Toxicology
 Environmental Science and Technology
 Environmental Science and Technology Letters
 Environmental Science: Processes & Impacts
 Environmental Health Perspectives
 International Immunopharmacology
 International Journal of Environmental Research and Public Health

International Journal of Environmental Health

Journal of Aerosol Science
 Journal of Air and Waste Management Association
 Journal of Environmental Engineering
 Journal of Environmental Monitoring
 Journal of Geophysical Research
 Journal of Nanoparticle Research
 Journal of Occupational and Environmental Hygiene
 Journal of Work Exposures and Health
 Nanotoxicology
 Nature Communications
 PLOS ONE
 Proceedings of the National Academy of Sciences
 Science of the Total Environment

Grant Review Panelist

Indoor Air Award Review Committee, American Lung Assoc. 2025
 EHS P30 Review Committee, Ad-hoc member, NIH/NIEHS, 2009

Service

Grant Review Panelist (cont.)

EPA-G2011-STAR-B1/B2 Panel, U.S. EPA, 2011
 RFA 10-2, New Investigator Panel, Health Effects Institute, 2011, 2015
 ZRG1 HDM-A Challenge Grants Panel 29, NIH/NIEHS, 2009
 ZES1 LKB Pathway to Independence Panel, NIH/NIEHS, 2011-2014
 NAME Neuromuscular Aging Musculoskeletal Epi. Panel, NIH 2012
 SIMI 6 2012 Panel, French National Research Agency, 2012
 ZES1 LKB-K P0, Children's Health Centers, NIH/NIEHS, 2012
 MAP-ERC Pilot Projects Program, 2010-present
 HICAHS Pilot Project Grant Program, Director, 2010-2014
 Infect. Dis., Repro., Asthma/Pulmonary Cond. Panel, NIH/NIEHS 2014
 NORA Intramural Project Proposals, NIOSH 2014, 2015
 Cardiovascular and Sleep Epi Study Section, NIH 2015
 Bioengineering Sciences and Technologies Section, NIH 2015
 SOH Occupational Health Study Section, CDC/NIOSH 2013.2016-
 ZRG1 Bioengineering Sciences and Technologies Section, NIH 2019
 United Kingdom Research and Innovation, SPF Clean Air Program, 2020
 ISD Panel, Ad-hoc member, NIH 2021

Committee Member

Committee on Respiratory Protection for the Public and Workers without Respiratory
 Protection Programs at their Workplaces, National Academy of Engineering, Sciences, and
 Medicine. 2020-2021
 Review Committee, Health Effects Institute 2023-

Organizing Member

Getting Smart About Sensors for Disaster Response Research, A Virtual Workshop, National
 Institutes for Environmental Health Science, July 2021
 Airborne Transmission of SARS-CoV-2: A Virtual Workshop, National Academy of
 Engineering, Sciences, and Medicine. August 2020
 2nd Air Sensors International Conference, May 2020, CA
 Special Symposium on Air Quality Sensors: Low-cost != Low Complexity, AAAR Annual
 Meeting, Sep 2019, Portland OR.
 International Aerosol Conference Symposium on Low-Cost Sensors, 2018
 1st Air Sensors International Conference, September 2018, CA
 CSU Partnership for Air Quality, Climate, and Health, 2015-
 International State of the Science Workshop on Organic Speciation in Atmospheric Aerosols
 Research, April 5-7, 2004 Las Vegas, NV.
 Science Symposium on Inhalable Particles, American Industrial Hygiene Conference and
 Exposition, May 16, 2011, Portland, OR.
 Science Symposium on Aerosol Respiratory Deposition, American Industrial Hygiene
 Conference and Exposition, 2015, Salt Lake City, UT

Faculty Senate	Colorado School of Public Health, 2012-2013
International Advisory Board	<i>Journal of Work Exposures and Health</i> , 2017- <i>Aerosol Science and Technology</i> , 2022-
Tutorial Presenter	Sensor Data Science Bootcamp, American Association for Aerosol Research 2020-2022 Air Sensors International Conference, 2020, 2022

**Professional and
Honorary Societies**

American Association for Aerosol Research
Association of Environmental Engineering and Science Professors
American Industrial Hygiene Association
International Society for Environmental Epidemiology
International Society for Exposure Science
Tau Beta Pi and Chi Epsilon Honor Societies
Order of the Engineer

Patents

"Thermophoretic Sampler" Volckens, J. et al., #8,973,447, #9,618,439
"Portable Particle Spectrometer" Volckens, J. et al., # 9,482,620
"Portable Air Sampling Device" Miller-Lionberg, D. et al., #10,488,305
"Sampling Device for Exposure Measurement of Particles and Gases" Volckens, J. et al. #11,474,005
"Respirable and Thoracic Inlet Assemblies", Leith, D. et al. #17/127,5
"Methods and systems for automated analysis of aerosol sampling filters" Volckens, J. et al. #12,352,672

Refereed Publications (h-index = 51; i10-index = 133 via [Google Scholar](#))

1. Tanner, K., Chang, H.H., Clark, M.L., Cleveland, V., Kalisa, E., Keller, K.P., L'Orange, C., Ntakirutimana, T., Quinn, C., Witinok-Huber, R., Young, B.N., and **J. Volckens**. "Familial Differences in Personal PM_{2.5} Exposure within a Rural African Community Explained with Spatiotemporal Exposure Apportionment." (2025). *Environmental Science and Technology*. <https://doi.org/10.1021/acs.est.5c01742>
2. Young, B.N., Peel, J.L., Rajkumar, S., Keller, K.P., Benka-Coker, M.L., Good, N., Walker, E.S., Brook, R.D., Nelson, T.L., **Volckens, J.**, L'Orange, C., Quinn, C., Africano, S., Osoto Pinel, A.B., and M.L. Clark. "Impact of the wood-burning Justa cookstove on glycated hemoglobin (HbA1c): a stepped-wedge randomized trial in rural Honduras." (2025) *Environmental Health Perspectives*. 133(5): 057021. <https://doi.org/10.1289/EHP15095>
3. deSouza, P., Hopke, P., L'Orange, C., Ibsen, P.C., Green Jr, C., Graeber, B., Cicione, B., Mekonnen, R., Purushothama, S., Kinney, P.L. and **J. Volckens** "Contribution of Traffic Emissions to PM_{2.5} Concentrations at Bus Stops in Denver, Colorado." (2025) *Sustainability*. 17(17): 7707. <https://doi.org/10.3390/su17177707>
4. deSouza, P., Crawford, B., Durant, J.L., Hudda, N., Ibsen, P., L'Orange, C., Jimenez, J., Graeber, B., Cicione, B., Mekonnen, R., Purushothama, S., Kahn, R., Kinney, P.L., and **J. Volckens**. "High-resolution multi-pollutant mapping in Denver, Colorado." (2025). *Atmospheric Environment X*. 27:100364 <https://doi.org/10.1016/j.aeaoa.2025.100364>
5. Young, B.N., Tryner, J., Hernandez Ramirez, L., WeMott, S., Erlandson, G., Li, X., Kuiper, G., Dean, D.A., Martinez, N., Phillips, M., **Volckens, J.**, and S. Magzamen "Particulate Matter Pollution in an Agricultural Setting: A Community-Engaged Research Study." (2025). *Environments*. 12(10): 348. <https://doi.org/10.3390/environments12100348>
6. Li, X., Tryner, J., Young, B.N., Hernandez Ramirez, L., Phillips, M., WeMott, S., Erlandson, G., Kuiper, G., Dean, D., Martinez, N., Sanpedro, L., Magzamen, S., and **J. Volckens** "Application and validation of a wearable monitor for assessing time-and location-resolved exposures to particulate matter in California's Central Valley." (2024) *Aerosol Science and Technology*. <https://doi.org/10.1080/02786826.2024.2415481>
7. Rosen, Z., Long, M., Ford, B., Wendt, E.A., Cheeseman, M., Quinn, C., L'Orange, C., **Volckens, J.**, and J.R. Pierce. "Anthropomorphism and motivating participation in citizen science projects." (2024) *Journal of Science Communication*. 23(8) A04. <https://doi.org/10.22323/2.23080204>
8. **Volckens, J.** "Summertime Trends in U.S. Population Exposure to Fine Particulate Air Pollution (PM_{2.5}) from Wildfire Smoke." (2024) *Environmental Science and Technology Letters*. 11(11): 1182-1186. <https://doi.org/10.1021/acs.estlett.4c00770>
9. Witinok-Huber, R., Keller, K.P., Abimana, E., Ahishakiye, C., Chang, H.H., L'Orange, C., Manning, D.T., Mori, R., Muhirwa, E.F., Muhongerwa, L., Ntakirutimana, T., Puzzolo, E., Quinn, C., Rosa, G., Tanner, K., Young, B.N., Zimmerle, D., Kalisa, E., **Volckens, J.**, and M.L. Clark. "Impact of randomly assigned "pay-as-you-go" liquefied petroleum gas prices on energy use for cooking: Experimental

Refereed Publications

(continued)

- pilot evidence from rural Rwanda." (2024) *Energy for Sustainable Development*. 80:101455. <https://doi.org/10.1016/j.esd.2024.101455>
10. Lai, P.S., Lam, N.L., Gallery, B., Lee, A.G., Adair-Rohani, H., Alexander, D., Balakrishnan, K., Bisaga, I., Chafe, Z.A., Clasen, T., Diaz-Artiga, A., Grieshop, A., Harrison, K., Hartinger, S.M., Jack, D., Kaali, S., Lydston, M., Mortimer, K.M., Nicolaou, L., Obonyo, E., Okello, G., Olopade, C., Pillariseti, A., Noella Pinto, A., Rosenthal, J.P., Schluger, N., Shi, X., Thompson, C., Thompson, L.M., **Volckens, J.**, Williams, K.N., Balmes, J., Checkley, W., and O.B. Ozoh. "Household Air Pollution Interventions to Improve Health in Low- and Middle-Income Countries: An Official American Thoracic Society Research Statement." (2024) *American Journal of Respiratory and Critical Care Medicine*. 209(8): 919-927. <https://doi.org/10.1164/rccm.202402-0398ST>
 11. Volckens, J., Haynes, E.N., Croisant, S.P., Cui, Y., Errett, N.A., Henry, H.F., Horney, J.A., Kwok, R.K., Magzamen, S., Rappold, A.G., Ravichandran, L., Reinlib, L., Ryan, P.H., and D.T. Shaughnessy. "Health Research in the Wake of Disasters: Challenges and Opportunities for Sensor Science." (2023) *Environmental Health Perspectives*. 131(6): 065002. <https://doi.org/10.1289/EHP12270>
 12. Wendt, E.A., Ford, B., Cheeseman, M., Rosen, Z., Pierce, J.R., Jathar, S.H., L'Orange, C., Quinn, C., Long, M., Mehaffy, J., Miller-Lionberg, D.D., Hagan, D.H., and J. Volckens. "A national crowdsourced network of low-cost fine particulate matter and aerosol optical depth monitors: results from the 2021 wildfire season in the United States." (2023) *Environmental Science: Atmospheres*. 3(10): 1563-1575. <https://doi.org/10.1039/d3ea00086a>
 13. Tryner, J., Quinn, C., Molina Rueda, E., Andales, M.J., L'Orange, C., Mehaffy, J., Carter, E., and J. Volckens. "AirPen: A Wearable Monitor for Characterizing Exposures to Particulate Matter and Volatile Organic Compounds." (2023) *Environmental Science and Technology*. 57(29): 10604-10614. <https://doi.org/10.1021/acs.est.3c02238>
 14. Kalisa, E., Clark, M.L., Ntakirutimana, T., Amani, M., and J. Volckens. "Exposure to indoor and outdoor air pollution in schools in Africa: Current status, knowledge gaps, and a call to action." (2023) *Heliyon* e18450. <https://doi.org/10.1016/j.heliyon.2023.e18450>
 15. Tanner, K., Good, K.M., Goble, D., Good, N., Keisling, A., Keller, K.P., L'Orange, C., Morton, E., Phillips, R., and J. Volckens. "Large particle emissions from human vocalization and playing of wind instruments" (2023). *Environmental Science and Technology*. 57(41): 15392-15400. <https://doi.org/10.1021/acs.est.3c03588>
 16. Young, B.N., Gallichotte, E.N., Britton Zier, L., Dunn, J., Alnachoukati, O., Nudell, N., Dobos, K.M., L'Orange, C., Quinn, C., Ebel, G.D., Henry, C.S., and J. Volckens. "Versatile Technology for Tracking SARS-CoV-2 Bioshedding and Exposure in a Clinical-Care Setting" (2023) *Environmental Science and Technology Letters*. 10(11): 1103-1108 <https://doi.org/10.1021/acs.estlett.3c00611>
 17. Ouimette, J., Arnott, W.P., Laven, P., Whitwell, R., Radhakrishnan, N., Dhaniyala, S., Sandink, M., Tryner, J. and J. Volckens. "Fundamentals of low-cost aerosol sensor design and operation." (2023) *Aerosol Science and Technology*. 58 (1):1-15 <https://doi.org/10.1080/02786826.2023.2285935>
 18. Bekbulat, B., Agrawal, P., Allen, R.W., Baum, M., Boldbaatar, B., Clark, L.P., Galsuren, J., Hystad, P., L'Orange, C., Vakacherla, S., Volckens, J., and J.D. Marshall. "Application of an Ultra-Low-Cost Passive Sampler for Light-Absorbing Carbon in Mongolia." (2023) *Sensors*. 23(21): 8977 <https://doi.org/10.3390/s23218977>
 19. Molina Rueda, E., Carter, E., L'Orange, C., Quinn, C., and J. Volckens. "Size-Resolved Field Performance of Low-Cost Sensors for Particulate Matter Air Pollution." (2023). *Environmental Science and Technology Letters*. 10(3): 247-253 <https://doi.org/10.1021/acs.estlett.3c00030>
 20. Sipich, J., L'Orange, C., Volckens, J., and A. Yalin. "In-Situ Elemental Composition Analysis of Large Inhalable Aerosol Using Laser Induced Breakdown Spectroscopy." (2022). *Applied Spectroscopy*. 77(3) <https://doi.org/10.1177/00037028221146804>
 21. Rice, M.B., Sokas, R.K., Coefield, S. and J. Volckens. "Medical Guidance for Respiratory Protection: Who Should Wear What, Where, and When?" (2022). *Annals of the American Thoracic Society*. 20(2) <https://doi.org/10.1513/AnnalsATS.202207-599VP>
 22. Kodros, J., Bell, M.L., Dominici, F., L'Orange, C., Godri-Pollitt, K., Weichenthal, S., Wu, X., and J. Volckens. "Unequal airborne exposure burden to toxic metals is associated with race, ethnicity, and segregation." (2022) *Nature Communications*. 13:632. <https://doi.org/10.1038/s41467-022-33372-z>
 23. Cheeseman, M.J., Ford, B., Anenberg, S.C., Cooper, M.J., Fischer, E.V., Hammer, M.S., Magzamen, S., Martin, R.V., van Donkelaar, A., Volckens, J., and J.R. Pierce. "Disparities in air pollutants across racial, ethnic, and poverty groups at US public schools." (2022) *Geohelth*. 6:e2022GH000672. <https://doi.org/10.1029/2022GH000672>
 24. Volckens, J., Good, K.M., Goble, D., Good, N., Keller, J., Kiesling, A., L'Orange, C., Morton, E., Phillips, R., and K. Tanner. "Aerosol emissions from wind instruments: effects of performer age, sex, sound pressure level, and bell covers." (2022) *Scientific Reports*. 12:11303. <https://doi.org/10.1038/s41598-022-15530-x>
 25. Witinok-Huber, R., Clark, M.L., Volckens, J., Young, B.N., Benka-Coker, M.L., Walker, E., Peel, J.L., Quinn, C., and J. Keller. "Effects of household and participant characteristics on personal exposure and kitchen concentration of fine particulate matter and black carbon in rural Honduras." (2022) *Environmental Research*. 214(2): 113869. <https://doi.org/10.1016/j.envres.2022.113869>
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Presentations (previous 5 years only)

1. "A Low-Cost, Community-Based Platform for Monitoring Ambient Concentrations of Hazardous Air Pollutants". AWMA Measurements Conference. Denver CO, April 2025.

Presentations *(continued, previous 5 years only)*

2. Invited Speaker. "SHEAR: Sustainable Household Energy Adoption in Rwanda". World Health Organization, August 2024.
3. Invited Speaker. "AirPen: A Wearable Monitor for Characterizing Exposures to Particulate Matter and Volatile Organic Compounds." Annual Meeting of the Committee on Toxicology, National Academy of Sciences, Engineering, and Medicine. Washington, DC, September, 2023.
4. Invited Speaker. "PM_{2.5} Exceedance Trends." Workshop on The State of Science for Particulate Matter (PM) Health Effects, Health Effects Institute, Arlington VA, October 2023.
5. Invited Speaker. "Low-cost sensors for exposure and health research: How it started, how it's going." Johns Hopkins Grand Rounds in Environmental Health Engineering. October 2022.
6. Plenary Speaker. "Low-cost sensors for exposure and health research: How it started, how it's going." American Association for Aerosol Research Annual Meeting. October 2022.
7. Invited Speaker. "Wildland fire smoke: Improving Technology for DR2 Exposure Assessment". NIEHS Disaster Response Research Workgroup Meeting. February 2022.
8. "Bioaerosols in the performing arts: Quantifying aerosol emissions from speech, song, and wind instruments." American Association for Aerosol Research Annual Meeting. November 2021.
9. Invited Speaker. "Masks, Face Coverings, and Respirators, Oh My! Running and Gunning in the New Wild West of PPE." 3M Global Seminar. October 2021.
10. Invited Speaker. "Mask performance and fit." World Health Organization PPE R&D Update Meeting. September 2021.
11. Invited Speaker. "Droplets, Aerosols, and the CSU Mask Testing Program." Colorado Association of Local Public Health Officials. June 2021.
12. Webinar Series. "Reducing Bioaerosol Emissions and Exposures in the Performing Arts: A Scientific Roadmap for a Safer Return from COVID19." National Association for Schools of Music. August & November 2020.
13. Webinar. "Mask Design 101: A Bootcamp for Personal Face Coverings during COVID-19". CSU Center for Energy Development and Health. September 2020.
14. Invited Panelist. "COVID-19 Risk Assessment for Wind Instrumentalists: A Panel Discussion." International Double Reed Society. July 2020.
15. Invited Speaker. "The Science Facts About Our Health and Well-being" CBDNA Virtual Athletic Band Symposium, April 2020.
16. Invited Speaker. "Respirator Performance and COVID19: An Aerosol Science Perspective on the New Wild West." Rocky Mountain Section; American Industrial Hygiene Association. June 2020.