

Marina E. Vance

Associate Professor and McLagan Family Faculty Fellow,
Department of Mechanical Engineering
Associate Director for Graduate Education,
Environmental Engineering Program (courtesy)
University of Colorado Boulder

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Education

- 2008 – 2012 **Ph.D. in Civil and Environmental Engineering**
Virginia Tech, Blacksburg, VA.
Dissertation title: *“Assessing the potential for human exposure to emissions from silver nanotechnology consumer products”*.
Adviser: Prof. Linsey C. Marr.
- 2007 – 2008 **M.S. in Environmental Engineering**
Universidade Federal de Santa Catarina, Florianópolis, Brazil.
Thesis title: *“Indoor air quality in hospital environments: chemical and microbiological parameters”*.
Advisers: Prof. Henrique M. Lisboa (Env. Engineering) and Prof. Vetúria L. Oliveira (Microbiology).
- 1999 – 2004 **B.S. in Sanitary and Environmental Engineering**
Universidade Federal de Santa Catarina, Florianópolis, Brazil.
Honor’s thesis title: *“Odor evaluation in landfills and certification of a CEN jury for olfactometry”*.
Advisers: Dr. Thierry Pagé and Prof. Henrique M. Lisboa

Academic Appointments

- 2024 – present **Associate Director for Graduate Education**, Environmental Engineering Program, University of Colorado Boulder.
- 2023 – present **Associate Professor**, Department of Mechanical Engineering, University of Colorado Boulder.
Program faculty (courtesy), Environmental Engineering Program, University of Colorado Boulder.
- 2016 – 2023 **Assistant Professor**, Department of Mechanical Engineering, University of Colorado Boulder.
Program Faculty (courtesy), Environmental Engineering Program, University of Colorado Boulder.
- 2014 – 2016 **Research Scientist**, Institute for Critical Science and Applied Technology, Virginia Tech.
- 2013 – 2014 **Postdoctoral Associate**, Institute for Critical Science and Applied Technology, Virginia Tech.
- 2015 – 2016 **Deputy Director**, Virginia Tech National Center for Earth and Environmental Nanotechnology Infrastructure ([NanoEarth](#)), a node of the National Nanotechnology Coordinated Infrastructure (NNCI).
- 2013 – 2016 **Associate Director**, Virginia Tech Center for Sustainable Nanotechnology ([VTSuN](#)), funded by the VT Institute for Critical Science and Applied Technology for research and by the VT Graduate School.
- 2008 – 2012 **PhD Graduate Research Assistant**, Civil and Environmental Engineering, Virginia Tech.
- 2007 – 2008 **MS Graduate Research Assistant**, Environmental Engineering, Universidade Federal de Santa Catarina (UFSC, Brazil).
- 2003 – 2003 **Honor’s Thesis Engineering Intern**, Odotech, Inc. Montreal, Canada.
- 2001 – 2002 **Undergraduate Research Assistant**, Environmental Engineering, UFSC (Brazil).

Honors and Awards

- 2024 Fellow, CU Boulder Research and Innovation Office (RIO) Faculty Research Leadership.

- 2024 Fellow, CU Boulder Faculty Leadership Institute.
- 2023 Fulbright U.S. Scholar Award (Indonesia, 2023 – 2024).
- 2023 Best Paper Award 2021-2022: “Measurements and Simulations of Aerosol Released while Singing and Playing Wind Instruments”, ACS Environmental Au.
- 2022 Governor’s Award for High-Impact Research, CO-Labs, Pathfinding Partnerships Category.
- 2022 Healthy Community Award, HomeSOS research team, Boulder County Public Health.
- 2022 Outstanding Research Award, Mechanical Engineering Department, CU Boulder.
- 2021 NSF CAREER Award.
- 2021 EPA STAR Early Career Award.
- 2019 – pres. McLagan Family Faculty Fellow, College of Engineering, CU Boulder.
- 2019 Best of 2019 Paper: “Overview of HOMEChem: House Observations of Microbial and Environmental Chemistry”, Environmental Science: Processes and Impacts (Royal Society of Chemistry).
- 2018 Outstanding Young Alumni, Via Department of Civil and Environmental Engineering, Virginia Tech.
- 2015 – 2018 Most accessed and most cited paper: “Nanotechnology in the real world: Redeveloping the nanomaterial consumer products inventory” Beilstein Journal of Nanotechnology.
- 2017 Travel Award Winner. 1st Pan-American Congress of Nanotechnology.
- 2017 Top 10 paper: “Potentially Aerosolized Nanoparticles in road dust in Shanghai: identification, distribution and environmental implications” (Front cover paper). Environmental Science: Nano (Royal Society of Chemistry).
- 2016 US EPA Scientific and Technological Achievement Award (STAA), Level III.

Before joining CU Boulder:

- 2015 Michigan University NextProf Engineering Workshop Selected Participant.
- 2015 Scholar of the Week. Virginia Tech Office of the Vice President for Research.
- 2013 Poster competition winner. 2nd Gordon Research Conference in Environmental Nanotechnology.
- 2013 Carl Storm Underrepresented Minority Fellowship. Gordon Research Conference in Environ. Nanotechnology.
- 2012 Academic Excellence and Leadership Honor Society of Graduate Students.
- 2012 Via Academic Prep Fellowship, VT Department of Civil and Environmental Engineering.
- 2011 Travel Award Winner. 30th AAAR Annual Conference.
- 2011 Interdisciplinary Research Honor Society, Founding Member.
- 2010 Poster Competition Winner. 29th AAAR Annual Conference.
- 2006 Volunteer of the Year. Broadview Green Bay, WI YMCA.
- 2003 Outstanding Undergraduate Student Researcher. Universidade Federal de Santa Catarina, Brazil.

Publications

#Vance student or postdoc; *Corresponding author.

Publication Metrics

[Google Scholar](#) h-index: 31, citations: 5,752

[Web of Science](#) h-index: 24, citations: 3,597

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(Maiden name: **Marina E. Quadros**)

Manuscripts Submitted and In Late Stages of Preparation

Submitted and under review:

1. Martin, A[#], SM Zimmerman, L Mael, D Poppendiek, DK Farmer, **ME Vance***. “Investigating fine particulate matter transport in a multi-story house using low-cost sensor measurements and different modeling approaches.” Submitted.

2. Li, J, K Mayer, A Martin, S Zimmerman, D Poppendieck, **ME Vance**, DK Farmer*. "Particle transport and building ventilation limit indoor air cleaner performance during wildfire smoke events". Submitted.
3. Yu, J, PSJ Lakey, JC Ditto, H Huynh, MF Link, D Poppendieck, SM Zimmerman, X Wang, DK Farmer, ME Vance, JPD Abbatt, M Shiraiwa*. "VOC Injection into a House Reveals Large Surface Reservoir Sizes in an Indoor Environment". Submitted.
4. Gingrich, J*, E Boedicker, S Patel#, R Corsi, DK Farmer, **ME Vance**. "Low-cost PM_{2.5} monitor performance during the HOMEChem experiment". Submitted.
5. Stockman, T, S Zhu, A Kumar, L Wang, S Patel#, J McCurdy, J Weaver, M Spede, D Milton, J Hertzberg, D Toohey, **ME Vance**, J Srebric, SL Miller*. "Aerosol and Carbon Dioxide Cogeneration by Musical Performance". Submitted.

In late stages of preparation:

1. Martin, A#, S Sankhyan#, **ME Vance***. "DIY Air Cleaning: Assessing a simplified method to measure the clean air delivery rate of do-it-yourself portable air cleaners". In preparation.
2. Toth, S#, B Nixon##, M Hannigan, **ME Vance**, M Deceglie. "Using PV production data and ambient particulate matter concentrations to model soiling losses in the Los Angeles basin." Submitted for institutional review.

Peer-Reviewed Journal Publications (71 in total, 52 since joining CU Boulder)

Published in 2025:

71. Ditto, JC*, HN Huynh, J Yu, M Link, D Poppendieck, M Claflin, **ME Vance**, DK Farmer, A Chan, JPD Abbatt. "Speciating volatile organic compounds in indoor air: using in-situ GC to interpret real-time PTR-MS signals." *Environmental Science: Processes & Impacts*, 2025. doi.org/10.1039/D4EM00602J
IF: 4.3 | JCI: Analytical Chemistry Q2 31/106 | CiteScore: 9.5
70. Webb, MH, GC Morrison, K Baumann, J Li, J Ditto, H Huynh, J Yu, K Mayer, L Mael#, **ME Vance**, DK Farmer, JPD Abbatt, BJ Turpin*. "Dynamics of residential indoor gas-and particle-phase water-soluble organic carbon: measurements during the CASA experiment". *Environmental Science: Processes & Impacts*, 2025. doi.org/10.1039/D4EM00340C
IF: 4.3 | JCI: Analytical Chemistry Q2 31/106 | CiteScore: 9.5
69. Farmer, DK*, **ME Vance***, D Poppendieck, J Abbatt, MR Alves, KC Dannemiller, C Deeleepojananan, J Ditto, B Dougherty, OR Farinas, AH Goldstein, VH Grassian, H Huynh, D Kim, JC King, J Kroll, J Li, MF Link, L Mael#, K Mayer, AB Martin#, G Morrison, R O'Brien, S Pandit, BJ Turpin, M Webb, J Yu, SM Zimmerman. "The chemical assessment of surfaces and air (CASA) study: using chemical and physical perturbations in a test house to investigate indoor processes". *Environmental Science: Processes & Impacts*, 2025. doi.org/10.1039/D4EM00209A
IF: 4.3 | JCI: Analytical Chemistry Q2 31/106 | CiteScore: 9.5
68. Dresser, WD, JM Silberstein, CE Reid, **ME Vance**, C Wiedinmyer, MP Hannigan, JA de Gouw. "Volatile Organic Compounds Inside Homes Impacted by Smoke from the Marshall Fire." *ACS ES&T Air*, 2025, 2 (1), 4-12. doi.org/10.1021/acsestair.4c00259
IF: N/A | JCI: N/A | CiteScore: N/A (new journal)
67. Schwink, S#, L Mael#, T Dunnington#, M Schmid#, J Silberstein, A Heck, N Gotlib#, M Hannigan, **ME Vance***. "Impacts of aging and relative humidity on the physical properties of biomass burning smoke particles". *ACS ES&T Air*, 2025, 2 (1), 109-118. doi.org/10.1021/acsestair.4c00224
IF: N/A | JCI: N/A | CiteScore: N/A (new journal)

Published in 2024:

66. Herrmann, BW*, M Choi, **ME Vance**, K Pickett-Nairne, EH Cooper, NR Friedman, N. R. "Aerosol Mitigation in Upper Airway Surgery". *International Journal of Pediatric Otorhinolaryngology*, 2024, 186, 112153. doi.org/10.1016/j.ijporl.2024.112153
IF: 3.2, CiteScore: 3.2, JCI: Analytical Chemistry Q1 13/86
65. HN Huynh, JC Ditto, J Yu, MF Link, D Poppendieck, DK Farmer, **ME Vance**, JPD Abbatt*. "VOC Emission Rates from an Indoor Surface Using a Flux Chamber and PTR-MS." *Atmospheric*

Environment, 2024, 338: 120817. doi.org/10.1016/j.atmosenv.2024.120817

IF: 4.2, CiteScore: 9.4, JCI: Environmental Sciences Q2 78/275

64. Ditto, J*, M Webb, HN Huynh, J Yu, GC Morrison, BJ Turpin, MR Alves, K Mayer, MF Link, AH Goldstein, D Poppendieck, **ME Vance**, DK Farmer, AWH Chan, JPD Abbatt. "The Role of Indoor Surface pH in Controlling the Fate of Acids and Bases in an Unoccupied Residence". *ACS ES&T Air*, 2024, 1(9): 1015-1027. doi.org/10.1021/acsestair.4c00044
IF: N/A (new Journal)
63. Marr, LC*, CD Cappa, WP Bahnfleth, TH Bertram, RL Corsi, MJ Ellis, GP Henze, G Isaacman-VanWertz, SL Miller, T Pistochni, WD Ristenpart, **ME Vance**, PJ Vikesland. "Toward Clean and Green Buildings". *Journal of Environmental Engineering*, 2024, 150(9): 02524002.
doi.org/10.1061/JOEEDU.EEENG-7727
IF: 1.6 | CiteScore: 4.4
62. Nassikas, NJ*, MC McCormack, G Ewart, JR Balmes, TC Bond, EBrigham, KCromar, AH Goldstein, A Hicks, PK Hopke, B Meyer, WW Nazaroff, LM Paulin, MB Rice, GD Thurston, BJ Turpin, **ME Vance**, CJ Weschler, JZhang, HM Kipen. "Indoor Air Sources of Outdoor Air Pollution: Health Consequences, Policy, and Recommendations: An Official American Thoracic Society Workshop Report". *Annals of the American Thoracic Society*, 2024, 21(3): 365-376.
doi.org/10.1513/AnnalsATS.202312-1067ST
IF: 8.3
61. Thakur, AK, J Gingrich, **ME Vance**, S Patel#. "Insights into Low-cost PM Sensors Using Size-resolved Scattering Intensity of Cooking Aerosols in a Test House". *Aerosol Science & Technology*, 1-13. doi.org/10.1080/02786826.2024.2342722
IF: 5.2 | JCI: Chemical Engineering Q1 39/160, Environmental Sciences Q2 116/334 | CiteScore: 8.4
(This is the journal of the American Association for Aerosol Research, AAAR)
60. Mishra, NK, **ME Vance**, A Novoselac, S Patel#. "Dynamic Optimization of Personal Exposure, Energy Consumption, and Thermal Comfort in a Test House". *Building and Environment*, 252: 111265. doi.org/10.1016/j.buildenv.2024.111265
IF: 7.4 | JCI: Environmental Engineering Q1 10/75
59. O'Brien, RE*, E Heery, C Shirilla, S Sankhyan#, A Fowler#, **ME Vance**. "Contributions of Cleaning Solution Residues to Indoor Organic Surface Films". *ACS ES&T Air*, 2024, 1 (2): 129-138.
doi.org/10.1021/acsestair.3c00053
IF: NA (new journal) | JCR: NA (new journal).

Published in 2023:

58. Li, J, MF Link, S Pandit, MH Webb, KJ Mayer, LA Garofalo, KL Rediger, DG Poppendieck, SM Zimmerman, **ME Vance**, VH Grassian, GC Morrison, BJ Turpin, DK Farmer*. "The persistence of smoke VOCs indoors: partitioning, surface cleaning, and air cleaning in a smoke-contaminated house". *Science Advances*, 2023, 9(41): eadh8263. doi.org/10.1126/sciadv.adh8263
IF: 13.6, JCI: Multidisciplinary Sciences Q1 9/134
57. Silberstein, J*, L Mael#, C Frischmon, E Rieves, E Coffey, T Das, W Dresser, A Hatch#, J Nath, H Pliszka, C Reid, ME Vance, C Wiedinmyer, J de Gouw, M Hannigan. "Residual Impacts of a Wildland Urban Interface Fire on Urban Particulate Matter and Dust: A Study from the Marshall Fire". *Air Quality Atmosphere & Health*, 2023, 2: 1839-1850. doi.org/10.1007/s11869-023-01376-3
IF: 5.1, JCI: Environmental Sciences Q2 99/334
56. Aksenov, AA*, JP Koelmel, EZ Lin, AV Melnik, **ME Vance**, DK Farmer, PC Dorrestein, KJG Pollitt. "Human Activities Shape the Indoor Volatile Chemistry". *Environmental Science & Technology Letters*, 2023, 10(11): 965-975. doi.org/10.1021/acs.estlett.2c00952
IF: 10.5, JCI: Environmental Engineering Q1 9/55, Environmental Sciences Q1 23/275
55. Reidy, E, BP Bottorff, CMF Rosales, F Cardoso-Saldaña, C Arata, S Zhou, C Wang, A Abeleira, L Hildebrandt Ruiz, AH Goldstein, A Novoselac, TF Kahan, JPD Abbatt, **ME Vance**, DK Farmer, PS Stevens*. "Measurements of hydroxyl radical concentrations during indoor cooking events: Evidence of an unmeasured photolytic source of radicals". *Environmental Science & Technology*, 2023, 57(2):896-908. doi.org/10.1021/acs.est.2c05756
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334
(ES&T is the highest-ranked JCI Environmental Engineering journal where I can publish).

54. Pothier, MA, E Boedicker, JR Pierce, **ME Vance**, DK Farmer*. "From the HOMEChem Frying Pan to the Outdoor Atmosphere: Chemical Composition, Volatility Distributions and Fate of Cooking Aerosol". *Environmental Science: Processes & Impacts*, 2023, 25: 314-325.
doi.org/10.1039/D2EM00250G
IF: 4.3 | JCI: Analytical Chemistry Q2 31/106 | CiteScore: 9.5

Published in 2022:

53. Masoud, CG, Y Li, DS Wang, EF Katz, PF DeCarlo, DK Farmer, **ME Vance**, M Shiraiwa, L Hildebrandt Ruiz. "Molecular composition and gas-particle partitioning of indoor cooking aerosol: Insights from a FIGAERO-CIMS and kinetic aerosol modeling". *Aerosol Science & Technology*, 2022, 56(12): 1156-1173. doi.org/10.1080/02786826.2022.2133593
IF: 5.2, JCI: Chemical Engineering Q1 39/160, Environmental Sciences Q2 116/334
(This is the journal of the American Association for Aerosol Research, AAAR)
52. Sankhyan, S[#], K Zabinski[#], RE O'Brien, S Coyan[#], S Patel[#], **ME Vance***. "Aerosol emissions and their volatility from heating different cooking oils at multiple temperatures". *Environmental Science: Atmospheres*, 2022, 2: 1364-1375. doi.org/10.1039/D2EA00099G
IF: NA (new journal as of 2022), JCI: NA (new journal)
51. Bottorff, B, C Wang, E Reidy, C Rosales, D Farmer, **ME Vance**, J Abbatt, P Stevens*. "Comparison of simultaneous measurements of indoor nitrous acid: Implications for the spatial distribution of indoor HONO emissions". *Environmental Science & Technology*, 2022, 56(19): 13573-13583.
doi.org/10.1021/acs.est.2c02196
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334
50. Hodshire, AL, E Carter, J Mattila, V Ilacqua, J Zambrana, JPD Abbatt, A Abeleira, C Arata, P DeCarlo, A Goldstein, L Hildebrandt Ruiz, **ME Vance**, C Wang, D Farmer*. "Detailed Investigation of the Contribution of Gas-Phase Air Contaminants to Exposure Risk during Indoor Activities." *Environmental Science & Technology*, 2022, 56(17): 12148-12157.
doi.org/10.1021/acs.est.2c01381
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334
49. Sankhyan, S[#], JK Witteman[#], S Coyan[#], S Patel[#], **ME Vance***. "Assessment of PM_{2.5} concentrations, transport, and mitigation in indoor environments using low-cost air quality monitors and a portable air cleaner." *Environmental Science: Atmospheres*, 2022, 2: 647-658.
doi.org/10.1039/D2EA00025C
IF: NA (new journal), JCI: NA (new journal)
48. Wang, L, T Lin, H Da Costa, S Zhu, T Stockman, A Kumar, J Weaver, M Spede, D Milton, J Hertzberg, D Toohey, **ME Vance**, SL Miller, J Srebric*. "Characterization of Aerosol Plumes from Singing and Playing Wind Instruments Associated with the Risk of Airborne Virus Transmission". *Indoor Air*, 2022, 32(6): e13064. doi.org/10.1111/ina.13064
IF: 5.8, JCI: Environmental Engineering Q1 16/75
(This was the journal of the International Society for Indoor Air Quality and Climate, ISIAQ)
47. Aksenov*, AA, RA Salido, AV Melnik, C Brennan, A Brejnrod, AM Caraballo-Rodríguez, JM Gauglitz, F Lejzerowicz, DK Farmer, **ME Vance**, R Knight, PC Dorrestein. The molecular impact of life in an indoor environment. *Science Advances*, 2022, 8(25): eabn8016.
doi.org/10.1126/sciadv.abn8016
IF: 13.6, JCI: Multidisciplinary Sciences Q1 9/134

Published in 2021:

46. Mattila, JM, C Arata, A Abeleira, Y Zhou, C Wang, EF Katz, AH Goldstein, JPD Abbatt, PF DeCarlo, **ME Vance**, DK Farmer*. "Contrasting chemical complexity of indoor and outdoor reactive organic carbon." *Environmental Science & Technology*, 2021, 56(1): 109-118.
doi.org/10.1021/acs.est.1c03915
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334
45. Patel, S[#], D Rim, S Sankhyan[#], **ME Vance***. "Dynamics Modeling and Estimation of Emission Rates sub-500 nm Particles During the HOMEChem Study." *Environmental Science: Processes & Impacts*, 2021, 23: 1706 - 1717. doi.org/10.1039/D1EM00259G
IF: 4.3 | JCI: Analytical Chemistry Q2 31/106 | CiteScore: 9.5

44. Sankhyan, S[#], S Patel[#], EF Katz, PF DeCarlo, DK Farmer, WW Nazaroff, **ME Vance***. "Indoor black and brown carbon from cooking activities and outdoor penetration: Insights from the HOMEChem study." *Environmental Science: Processes & Impacts*, 2021, 23: 1476-1487.
doi.org/10.1039/D1EM00283J
IF: 4.3 | JCI: Analytical Chemistry Q2 31/106 | CiteScore: 9.5
43. Sankhyan, S[#], K Heinselman, P Ciesielski, T Barnes, M Himmel, H Teed[#], S Patel[#], **ME Vance***. "Filtration performance of masks and face coverings and the reusability of cotton masks after repeated washing and drying cycles." *Aerosol and Air Quality Research*, 2021, 21(11): 210117.
doi.org/10.4209/aaqr.210117
IF: 4.0, JCI: Environmental Sciences Q2 132/334
42. Stockman, T, S Zhu, A Kumar, L Wang, S Patel[#], J Weaver, M Spede, D Milton, JR Hertzberg, DW Toohey, **ME Vance**, J Srebbric, SL Miller*. "Measurements and Simulations of Aerosol Released while Singing and Playing Wind Instruments." *ACS Environmental Au*, 2021, 1(1): 71-84.
doi.org/10.1021/acsenvironau.1c00007 **ACS Environmental Au Best Paper Award 2021-2022**
IF: 3.31
41. Arata, C, PK Misztal, Y Tian, DM Lunderberg, K Kristensen, **ME Vance**, DK Farmer, WW Nazaroff, AH Goldstein*. "Volatile Organic Compound Emissions During HOMEChem". *Indoor Air*, 2021, 31 (6): 2099-2117. doi.org/10.1111/ina.12906
IF: 5.8, JCI: Environmental Engineering Q1 16/75
(This was the journal of the International Society for Indoor Air Quality and Climate, ISIAQ)
40. Boedicker, E, E Emerson, G McMeeking, S Patel[#], **ME Vance**, DK Farmer*. "Fates and spatial variations of submicron indoor particles during HOMEChem cooking events." *Environmental Science: Processes & Impacts*, 2021, 23(7): 1029-1039. doi.org/10.1039/D1EM00087J
IF: 4.3 | JCI: Analytical Chemistry Q2 31/106 | CiteScore: 9.5
39. Hayes, A[#], J Osio-Norgaard, S Miller, G Whiting*, **ME Vance***. "Air Pollutant Emissions from Multi Jet Fusion, Material-jetting, and Digital Light Synthesis Commercial 3D Printers in a Service Bureau". *Building and Environment*, 2021, 202: 108008. doi.org/10.1016/j.buildenv.2021.108008
IF: 7.4, JCI: Environmental Engineering Q1 10/75
38. Katz, EF, E Boedicker, WL Brown, P Campuzano-Jost, DA Day, DK Farmer, AH Goldstein, H Guo, L Hildebrandt Ruiz, JL Jimenez, DM Lunderberg, S Patel[#], K Patel, **ME Vance**, PF DeCarlo*. "Quantification of cooking organic aerosol in the indoor environment using Aerodyne aerosol mass spectrometers." *Aerosol Science & Technology*, 2021, 55(10): 1099-1114.
doi.org/10.1080/02786826.2021.1931013
IF: 5.2, JCI: Chemical Engineering Q1 39/160, Environmental Sciences Q2 116/334
(This is the journal of the American Association for Aerosol Research, AAAR)
37. Hayes, A[#], J Osio-Norgaard, S Miller, **ME Vance***, G Whiting*. "Influence of Powder Type on Aerosol Emissions in Powder-Binder Jetting with Emphasis on Lunar Regolith for In-Situ Space Applications." *ACS ES&T Engineering*, 2021, 1(2): 183-191. doi.org/10.1021/acsestengg.0c00045
IF: 7.4, CiteScore: 8.5, JCI: Environmental Engineering Q2 32/75
36. Brown, W*, D Day, H Stark, D Pagonis, J Krechmer, X Liu, D Price, E Katz, PF DeCarlo, C Masoud, D Wang, L Hildebrandt Ruiz, C Arata, D Lunderberg, A Goldstein, DK Farmer, **ME Vance**, JL Jimenez*. "Real-time organic aerosol chemical speciation in the indoor environment using extractive electrospray ionization mass spectrometry." *Indoor Air*, 2021, 31 (1): 141-155.
doi.org/10.1111/ina.12721
IF: 5.8, JCI: Environmental Engineering Q1 16/75
(This was the journal of the International Society for Indoor Air Quality and Climate, ISIAQ)
35. Tian, Y*, C Arata, E Boedicker, DM Lunderberg, S Patel[#], S Sankhyan[#], K Kristensen, PK Misztal, DK Farmer, **ME Vance**, A Novoselac, WW Nazaroff, AH Goldstein. "Indoor Emissions of Total and Fluorescent Supermicron Particles during HOMEChem." *Indoor Air*, 2021, 31 (1): 88-98.
doi.org/10.1111/ina.12731
IF: 5.8, JCI: Environmental Engineering Q1 16/75
(This was the journal of the International Society for Indoor Air Quality and Climate, ISIAQ)

Published in 2020:

34. Wang, C, B Bottorff, E Reidy, C Rosales, D Collins, A Novoselac, DK Farmer, **ME Vance**, P Stevens, J Abbatt*. "Cooking, bleach cleaning and air conditioning strongly impact levels of HONO

in a house." *Environmental Science & Technology*, 2020, 54(21): 13488-13497.

doi.org/10.1021/acs.est.0c05356

IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334

33. Ault, AP*, VH Grassian*, N Carslaw, DB Collins, H Destailats, DJ Donaldson, DK Farmer, JL Jimenez, VF McNeill, GC Morrison, RE O'Brien, M Shiraiwa, **ME Vance**, JR Wells, W Xiong. "Indoor Surface Chemistry: Developing a Molecular Picture of Reactions on Indoor Interfaces." *Chem*, 2020, 6(12): 3203-3218. doi.org/10.1016/j.chempr.2020.08.023
IF: 23.5, JCI: Chemistry, Multidisciplinary Q1 7/230
32. Or, VW, M Wade, S Patel#, MR Alves, D Kim, S Schwab, H Przelomski, R O'Brien, D Rim, RL Corsi, **ME Vance**, DK Farmer, VH Grassian*. "Glass Surface Evolution Following Gas Adsorption and Particle Deposition from Indoor Cooking Events as Probed by Microspectroscopic Imaging and Characterization." *Environmental Science: Processes & Impacts*, 2020, 22: 1698-1709.
doi.org/10.1039/D0EM00156B
IF: 4.3, CiteScore: 9.5, JCI: Analytical Chemistry Q1 13/86
31. Patel, S#, S Sankhyan#, EK Boedicker, PF DeCarlo, DK Farmer, AH Goldstein, EF Katz, WW Nazaroff, Y Tian, J Vanhanen, **ME Vance***. "Indoor Particulate Matter during HOMEChem: Concentrations, Size Distributions, and Exposures." *Environmental Science & Technology*, 2020, 54(12): 7107-7116. doi.org/10.1021/acs.est.0c00740
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334
30. Lunderberg, DM, K Kristensen, Y Tian, C Arata, PK Misztal, Y Liu, N Kreisberg, EF Katz, PF DeCarlo, S Patel#, **ME Vance**, WW Nazaroff, AH Goldstein*. "Surface emissions modulate indoor SVOC concentrations through volatility-dependent partitioning." *Environmental Science & Technology*, 2020, 54(11): 6751-6760. doi.org/10.1021/acs.est.0c00966
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334
29. Toth, S##, M Hannigan, **ME Vance**, ME, M Deceglie. "Predicting photovoltaic soiling from air quality measurements." *IEEE Journal of Photovoltaics*, 2020, 10(4): 1142-1147.
doi.org/10.1109/JPHOTOV.2020.2983990
IF: 3.0, JCI: Applied Physics Q2 69/160
28. Mattila, J, P Lakey, M Shiraiwa, C Wang, J Abbatt, C Arata, AH Goldstein, L Ampollini, E Katz, P DeCarlo, S Zhou, TF Kahan, F Cardoso Saldaña, L Hildebrandt Ruiz, A Abeleira, E Boedicker, **ME Vance**, DK Farmer*. "Multiphase chemistry controls inorganic chlorinated and nitrogenated compounds in indoor air during bleach cleaning." *Environmental Science & Technology*, 2020, 54(3): 1730-1739. doi.org/10.1021/acs.est.9b05767
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334
27. Wang, C, DB Collins, C Arata, AH Goldstein, JM Mattila, DK Farmer, A Novoselac, **ME Vance**, WW Nazaroff, JPD Abbatt*. "Surface reservoirs dominate dynamic gas-surface partitioning of many indoor air constituents." *Science Advances*, 2020, 6(8): eaay8973.
doi.org/10.1126/sciadv.aay8973 **Cover Article.**
IF: 13.6, JCI: Multidisciplinary Sciences Q1 9/134
26. Geitner, NK, CO Hendren, G Cornelis, R Kaegi, JR Lead, GV Lowry, I Lynch, B Nowack, E Petersen, E Bernhardt, S Brown, W Chen, C Garidel-Thoron, J Hanson, SL Harper, K Jones, F Von der Kammer, A Kennedy, J Kidd, CW Matson, C Metcalf, JA Pedersen, WJGM. Peijnenburg, JTK Quik, SM Rodrigues, J Rose, P Sayre, M Simonin, C Svendsen, RL Tanguay, N Tufenkji, T van Teunenbroek, G Thies, Y Tian, J Rice, A Turner, J Liu, J Unrine, **ME Vance**, JC White, MR Wiesner*. "Harmonizing Across Environmental Nanomaterial Testing Media for Increased Comparability of Nanomaterial Datasets." *Environmental Science: Nano*, 2020, 7: 13-36.
doi.org/10.1039/C9EN00448C
IF: 7.3, JCI: Environmental Sciences Q1 40/275

Published in 2019:

25. Farmer, DK*, **ME Vance**, J Abbatt, A Abeleira, MR Alves, C Arata, E Boedicker, S Bourne, F Cardoso-Saldaña, R Corsi, PF DeCarlo, AH Goldstein, VH Grassian, L Hildebrandt Ruiz, JL Jimenez, TF Kahan, EF Katz, J Mattila, W Nazaroff, A Novoselac, VW Or, RE O'Brien, S Patel#, S Sankhyan#, PS Stevens, Y Tian, C Wang, S Zhou, Y Zhou. "Overview of HOMEChem: House Observations of Microbial and Environmental Chemistry." *Environmental Science: Processes Impacts*, 2019, 21: 1280-1300. doi.org/10.1039/C9EM00228F **Part of ESPI Recent HOT Articles;**

Part of ESPI Best Papers for 2019.

IF: 4.3 | JCI: Analytical Chemistry Q2 31/106 | CiteScore: 9.5

24. Garcia, EB, C Alms, AW Hinman, C Kelly, A Smith, **ME Vance**, J Loncarek, LC Marr, D Cimini*. "Single-cell analysis reveals that silver nanoparticle exposure induces cell division defects in non-transformed human epithelial cells." *International Journal of Environmental Research and Public Health*, 2019, 16(11): 2061. doi.org/10.3390/ijerph16112061
IF: 4.6, JCI: Public, Environ & Occupational Health Q1 45/182

Published in 2018:

23. Adawi, HI, MA Newbold, J Reed, **ME Vance**, I Feitshans, LR Bickford, NA Lewinski* "Nano-Enabled Personal Care Products: Current Developments in Consumer Safety." *NanoImpact*, 2018, 11: 170 -179. doi.org/10.1016/j.impact.2018.08.002
IF: 4.9, JCI: Environmental Sciences Q2 82/275

Published in 2017:

22. **Vance, ME***, V Pegues, W Leng, S VanMonfrans, LC Marr "Aerosol emissions from fuse-deposition modeling 3D printers in a chamber and in real indoor environments." *Environmental Science & Technology*, 2017, 51 (17): 9516-9523. doi.org/10.1021/acs.est.7b01546
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334
21. Pourzahedi, L, **ME Vance**, MJ Eckelman* "Life Cycle Assessment and Release Studies for 15 Nanosilver-enabled Consumer Products: Investigating Hotspots and Patterns of Contribution." *Environmental Science & Technology*, 2017, 51 (12): 7148-7158. doi.org/10.1021/acs.est.6b05923
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334
20. Dale, JG*, SS Cox, **ME Vance**, LC Marr, M Hochella "Transformation of cerium oxide nanoparticles from a diesel fuel additive during combustion in a diesel engine." *Environmental Science & Technology*, 2017, 51 (4): 1973-1980. doi.org/10.1021/acs.est.6b03173
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334

Before joining CU Boulder:

19. Yang, Y, **ME Vance**, F Tou, A Tiwari, M Hochella* "Potentially Aerosolized Nanoparticles in road dust in Shanghai: identification, distribution and environmental implications." *Environmental Science: Nano*, 2016, 534 (3): 534-544 doi.org/10.1039/c6en00056h **Front Cover; Part of Top-10 most read papers in 2016.**
IF: 7.3, JCI: Environmental Sciences Q1 40/275
18. Baalousha, M*, Y Yang*, **ME Vance**, B Coleman, J Xu, J Blaszczyk, S McNeal, M Steele, E Bernhardt, MF Hochella "Outdoor urban nanomaterials: The emergence of a new, integrated, and critical field of study." *Science of the Total Environment*, 2016, 557: 740-753. doi.org/10.1016/j.scitotenv.2016.03.132
IF: 9.8, JCI: Environmental Sciences Q1 26/275
17. **Vance, ME***, E Vejerano, T Kuiken, S McGinnis, M Hochella, M Hull "Nanotechnology in the real world: Redeveloping the nanomaterial consumer products inventory." *Beilstein Journal of Nanotechnology*, 2015, 6: 1769-1780. doi.org/10.3762/bjnano.6.181 **Most accessed paper per year 2015-2018; Most cited paper for years 2015-2019.**
IF: 3.1, JCI: Applied Physics Q2 66/160
16. Tulve, NS*, AB Stefaniak, **ME Vance**, K Rogers, S Mwilu, RF LeBouf, D Schwegler-Berry, R Willis, TA Thomas, LC Marr "Characterization of silver nanoparticles in consumer products used by or near children or found in the home to predict children's potential exposure." *International Journal of Hygiene and Environmental Health*, 2015, 218(3): 345-357. doi.org/10.1016/j.ijheh.2015.02.002
IF: 6.0, JCI: Public, Environ & Occupational Health Q1 32/207
15. **Vance, ME**, LC Marr*. "Exposure to airborne engineered nanoparticles in the indoor environment." *Atmospheric Environment*, 2015, 106: 503-509. doi.org/10.1016/j.atmosenv.2014.12.056
IF: 4.2, CiteScore: 9.4, JCI: Environmental Sciences Q2 78/275
14. **Quadros, ME***, R Pierson IV, N Tulve, R Willis, K Rogers, T Thomas, LC Marr "Release of silver from nanotechnology-based consumer products for children." *Environmental Science & Technology*, 2013, 47(15): 8894-8901. doi.org/10.1021/es4015844
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334

13. Shores, CA, ME Klappmeyer, **ME Quadros**, LC Marr* “Sources and transport of black carbon at the California-Mexico border.” *Atmospheric Environment*, 2013, 70: 490-499.
doi.org/10.1016/j.atmosenv.2012.04.031
IF: 4.2, CiteScore: 9.4, JCI: Environmental Sciences Q2 78/275
12. **Quadros, ME**, LC Marr* “Silver nanoparticles and total aerosols emitted by nanotechnology-related consumer spray products.” *Environmental Science & Technology*, 2011, 45(24): 10713-10719.
doi.org/10.1021/es202770m
IF: 11.4, JCI: Environmental Engineering Q1 7/75, Environmental Sciences Q1 34/334
11. **Quadros, ME**, LC Marr* “Environmental and human health risks of aerosolized silver nanoparticles.” *Journal of the Air & Waste Management Association*, 2010, 60(7): 770-781.
doi.org/10.3155/1047-3289.60.7.770
IF: 2.7, JCI: Environmental Engineering Q3 47/75, Environmental Sciences Q3 170/275
10. Carmo Junior, GN, P Belli Filho, HM Lisboa, WN Schirmer*, **ME Quadros** “Odor assessment tools and odor emissions in industrial processes.” *Acta Scientiarum. Technology*, 2010, 32(3): 287-293.
doi.org/10.4025/actascitechnol.v32i3.4778
9. Schirmer, WN*, **ME Quadros** “Compostos orgânicos voláteis biogênicos emitidos a partir de vegetação e seu papel no ozônio troposférico urbano” (Biogenic volatile organic compounds from vegetation and their role in the urban tropospheric ozone). *Revista da Sociedade Brasileira de Arborização Urbana*, 2010, 5 (1): 25-42. doi.org/10.5380/revsbau.v5i1.66235
8. **Quadros, ME***, HM Lisboa, P Belli Filho “Efficiency evaluation of gas treatment equipment in terms of odor removal using dynamic olfactometry.” *Water Practice and Technology*, 2009, 2(4): 1-6.
doi.org/10.2166/wpt.2009.031
IF: 1.6, JCI: Water Resources Q4 102/131
7. **Quadros, ME***, HM Lisboa, et al. “Qualidade do ar interno em ambientes hospitalares” (Indoor air quality in hospitals). *Revista Tecnologia*, 2009, 30(1): 32-52.
6. **Quadros, ME***, HM Lisboa, et al. “Qualidade do ar em ambientes internos hospitalares: estudo de caso e análise crítica dos padrões atuais” (Indoor air quality in hospitals: a case study and a critical review of the current standards). *Revista Engenharia Sanitária e Ambiental*, 2009, 14(3): 431-437.
doi.org/10.1590/S1413-41522009000300017
5. **Quadros, ME***, WN Schirmer, HM Lisboa “A olfatometria como ferramenta na verificação da eficácia de neutralizador de odor industrial” (Olfactometry as a tool for the efficiency verification of industrial odor neutralizer). *Ambiencia*, 2008, 4(3): 367-382.
4. **Quadros, ME***, WN Schirmer “O uso da fotocatalise para a desinfecção e desodorização do ar interno” (Photocatalysis and its uses for indoor air deodorization and disinfection). *Ambiencia*, 2008, 4(2): 309-325.
3. Schirmer, WN*, **ME Quadros**, HM Lisboa et al. “Avaliação da força de retenção de compostos orgânicos (COV) em nanoestruturas de carbono ‘cup stacked” (Retention of air-phase VOCs in cupstacked carbon nanostructures). *Tecno-lógica*, 2008, 12(2): 31-36.
2. Schirmer, WN*, **ME Quadros**, HM Lisboa et al. “Análises olfatométricas para determinação das características do odor no manguezal do Itacuribi, município de Florianópolis, Santa Catarina” (Odor characterization of a wetland area in Florianópolis, Brazil through olfactometric analyses). *Revista Brasileira de Ciências Ambientais*, 2008, 2(1): 57-72. doi.org/10.18316/128
1. Schirmer, WN*, **ME Quadros**, HM Lisboa et al. “Características, natureza e métodos de amostragem/ análise de gases odorantes emitidos em processos industriais: Caso das lagoas de tratamento de efluentes” (Characteristics, nature and sampling/analysis methods for odorous gases from industrial processes: A case study on petrochemical wastewater treatment ponds). *Revista Brasileira de Ciências Ambientais*, 2007, 1(1): 35-52. doi.org/10.18316/168

Books and peer-reviewed study reports

1. National Academies of Sciences, Engineering, and Medicine. **2024**. Health Risks of Indoor Exposure to Fine Particulate Matter and Practical Mitigation Solutions. Washington, DC: The National Academies Press, 248 pages. ISBN: 978-0-309-71275-0. <https://doi.org/10.17226/27341>

Book chapters (4)

1. Kuiken, T*, **ME Quadros**, S McGinnis, MS Hull "Public's understanding, perceptions, and acceptance of nanotechnology through the lens of consumer products". In: *Nanoengineering: Global Approaches to Health and Safety Issues*, **2015**, 1 ed.; Dolez, P., Ed. Elsevier: Oxford; pp 151-171. ISBN 0444627456, 9780444627452
2. Hull, MS*, **ME Quadros**, R Born, J Provo, VK Lohani, RL Mahajan "Sustainable nanotechnology: A regional perspective". In: *Nanotechnology Environmental Health and Safety: Risks, Regulation, and Management*, **2014**, 2 ed.; M Hull, D Bowman. Eds. Elsevier: Oxford, 2014; pp 395 - 426. doi.org/10.1016/B978-1-4557-3188-6.00016-5
3. **Quadros, ME**, HM Lisboa* "Qualidade do ar interno" (Indoor Air Quality) and "Metodologias olfatométricas para avaliação do impacto odorante" (Olfactometric methodology for odor impact assessment). In: *Controle da Poluição Atmosférica (Atmospheric Pollution Control)* **2010**, Online textbook. ISBN 978-85-913483-0-5
4. **Quadros, ME**, D Paludo, FSP Sant'Anna* "Gestão Ambiental: o reúso de águas na indústria hoteleira" (Environmental Management: Water Reuse in the Hotel Industry). In: *Gestão Ambiental Urbana e Industrial (Urban and Industrial Environmental Management)* **2003**, CLC Frankenberg, MT Raya-Rodrigues, M Cantelli. Porto Alegre, EDIPUCRS, in Portuguese.

Journal Editorials, Reports, Magazine Articles, other non-refereed publications (5)

1. **The National Academies of Sciences, Engineering, and Medicine**. "Indoor Exposure to Fine Particulate Matter and Practical Mitigation Approaches: Proceedings of a Workshop". 2022 <https://doi.org/10.17226/26331>
2. Farmer, DK, **ME Vance** "Indoor air: sources, chemistry and health effects". Special issue editorial. *Environ. Sci.: Processes & Impacts*. **2019**, 21, 1227-1228. doi.org/10.1039/c9em90035g
3. **Vance, ME**, KC Scott "Consumer Exposure Studies I: General Products Consumer Exposure Studies I: General Products. In: Consumer Product Safety Commission (CPSC), National Nanotechnology Initiative (NNI). *Workshop Report: Quantifying Exposure to Engineered Nanomaterials (QEEN) from Manufactured Products*. **2016**, Arlington, VA. Available at: http://www.nano.gov/sites/default/files/pub_resource/queen_workshop_report_2016.pdf
4. Tulve, ST, R Willis, K Rogers, **ME Quadros**, LC Marr "A Preliminary Assessment of the Potential for Exposure to Silver Nanoparticles in Children's Consumer Products" (EPA and CPSC Interagency Agreement: EPA- IA-RW-61-92317001-0). *Final Report to the Consumer Product Safety Commission*. **2011**, 168p.
5. **Quadros, ME**, LC Marr "Exposure Assessment of Silver Nanoparticles in Select Children's Consumer Products" (RFQ-RT-10-00249). *Final Project Report to the Environmental Protection Agency*. **2011**, 118p.
6. **Quadros, ME** "Assessing Realistic Emissions of Airborne Nanomaterials from Consumer Products". *ICTAS Connection Newsletter*. **2011**, (10): 6-7.

Presentations

(179 in total, 139 after joining CU Boulder)

Invited Talks, Seminars, and Lectures (69 in total, 60 since joining CU Boulder)

- P.1 ME Vance. "Indoor and outdoor assessments of PM_{2.5} concentrations and personal exposures in Java, Indonesia." **Invited talk, Environmental Engineering Seminar Series, CU Boulder**. Boulder, 4-Oct-2024
- P.2 ME Vance, S Schwink, L Mael, et al. "Impacts of Aging and Relative Humidity on Biomass Burning Smoke in an Indoor Environment." **Invited talk, Symposium: Chemical Footprint of Wildfires: Impacts on Soil, Water, and & Air Quality. ACS Fall Meeting**, Denver, 21-Aug-2024
- P.3 ME Vance. "Indoor fine particulate matter (PM_{2.5}): Emissions, dynamics, and personal exposure." **Invited talk, President's Council of Advisors on Science and Technology (PCAST)**. Virtual, 11-Jul-2024

- P.4 ME Vance, S Schwink, L Mael, et al. "Impacts of Aging and Relative Humidity on Biomass Burning Smoke in an Indoor Environment." **Invited talk. Workshop: Expanding our perspectives: measurement/modeling discussions of indoor chemistry. Indoor Air 2024**, Honolulu, 11-Jul-2024
- P.5 ME Vance, DK Farmer. "Lessons learned from HOMEChem and CASA concerning indoor aerosols." **Invited talk. Workshop: When does indoor air chemistry matter? Indoor Air 2024**, Honolulu, 8-Jul-2024
- P.6 ME Vance. "Breathing in focus: Exploring indoor and outdoor PM_{2.5} levels and personal exposures." **Invited Seminar. Power Talk, Indonesia International Institute for Life Sciences.** Jakarta, Indonesia, 22-May-2024.
- P.7 ME Vance. "Indoor fine particulate matter: Concentrations, transport and personal exposure in test houses and real environments." **Invited seminar: Graduate Institute of Environmental Engineering, National Taiwan University.** Taipei, Taiwan, 9-May-2024.
- P.8 ME Vance, "Indoor Air Quality: Measurements and Health Effects." **Invited lecture: Environmental Engineering Class of Environmental Laboratory II, Universitas Trisakti.** Jakarta, Indonesia, 30-Apr-2024.
- P.9 ME Vance, "Measuring particulate matter where the people are: Ambient and Indoor microenvironmental assessments of PM_{2.5} concentrations, transport, and personal exposures." **Invited seminar: Department of Civil and Environmental Engineering, National University of Singapore.** Singapore, 27-Mar-2024.
- P.10 ME Vance, "Quantifying personal exposure to air pollution". **Invited seminar: The 107th IPB Talk on Complexity and Sustainability Sciences.** Bogor, Indonesia, 15-Mar-2024.
- P.11 ME Vance, "Measuring personal exposure to fine particulate matter using low-cost sensors". **Invited talk: 8th Annual Meeting on GHGs and AQ Joint Monitoring in Indonesia.** Bogor, Indonesia, 14-Mar-2024.
- P.12 ME Vance, "Measuring particulate matter where the people are: Ambient and Indoor microenvironmental assessments of PM_{2.5} concentrations, transport, and personal exposures". **Invited seminar. Queensland University of Technology's International Laboratory for Air Quality and Health.** Brisbane, Australia, 18-Dec-2023.
- P.13 ME Vance, "Measuring particulate matter where the people are: Ambient and Indoor microenvironmental assessments of PM_{2.5} concentrations, transport, and personal exposures". **Invited seminar: Environmental Futures Seminar. University of Wollongong Centre for Atmospheric Chemistry, School of Earth, Atmospheric and Life Sciences.** Wollongong, Australia, 13-Dec-2023.
- P.14 ME Vance, "Measuring particulate matter where the people are: Ambient and Indoor microenvironmental assessments of PM_{2.5} concentrations, transport, and personal exposures". **Invited seminar: School of Natural Sciences, Macquarie University.** Sydney, Australia, 8-Dec-2023.
- P.15 ME Vance, "Quantifying personal exposure to particulate matter using low-cost sensors". **Invited seminar: IPB University Bogor Department of Geophysics and Meteorology.** Bogor, Indonesia, 1-Nov-2023.
- P.16 ME Vance, "Physical properties of particulate matter in residential environments". **Invited Seminar: Caltech Environmental Science and Engineering Seminar Series.** Pasadena, CA, 7-June-2023.
- P.17 ME Vance, "Assessing the Transport of Wildfire-Generated Particulate Matter into Homes and Developing Practical Interventions to Reduce Human Exposure (WildPM)". **Invited talk: Interventions and Communication Strategies to Reduce Health Risks of Wildland Fire Smoke Exposures Grantee Meeting.** Virtual. 11-May-2022.
- P.18 ME Vance, "Project overview: Assessing the Transport of Wildfire-Generated Particulate Matter Into Homes and Developing Practical Interventions to Reduce Human Exposure (WildPM)".

- Invited talk: Colorado Regional Air Monitoring and Messaging Group (RAMM).** Virtual. 2-May-2022
- P.19 ME Vance, "It's coming from inside the house: Aerosol emissions, transport, and fate from everyday indoor activities". **Invited seminar: Frontiers in Atmospheric Chemistry Seminar Series**, organized by multiple universities (MIT, U. Toronto, UC Davis, CSU, Wageningen U.). Virtual. 28-Apr-2022
- P.20 ME Vance, "Recent collaborative advances in indoor air: some results from the HOMEChem study". **Invited talk: Webinar - 30+ Years of Knowledge Creation: Indoor Air 1991-2021. International Society for Indoor Air Quality and Climate (ISIAQ).** Virtual. 19-Apr-2022
- P.21 ME Vance, "Cooking and cleaning during the HOMEChem study". **Invited talk at: Workshop - Impacts of Cooking and Cleaning on Indoor Air quality: Towards Healthy Buildings for the Future. University of York.** Virtual. 26-Jan-2022.
- P.22 ME Vance, "Indoor aerosols in a residential environment: Some results from the HOMEChem study". **Invited seminar: Civil & Environmental Engineering Department. Rutgers University.** Virtual. 3-Nov-2021.
- P.23 ME Vance, "Science Community in the Chemistry of Indoor Environments". **Invited talk: Team Research Forum on Indoor Air Quality. University of California, Davis.** Virtual. 29-Oct-2021.
- P.24 ME Vance, "Indoor Air Quality: An overview of Aerosol Research by the Vance Group". **Invited seminar: Environmental Engineering Program. University of Colorado Boulder.** Boulder, CO. 1-Oct-2021.
- P.25 ME Vance, "Outdoor and indoor air quality and COVID-19". **Invited talk: Aerosol Science and Engineering and Public Health: Focus on COVID-19 Workshop. Association of Environmental Engineering and Science Professors (AEESP).** Virtual. 14-Jul-2021.
- P.26 ME Vance, "Indoor Particulate Matter from Everyday Activities: Some insights from the HOMEChem study". **Invited seminar: 9th Annual Donora Memorial Lecture, Carnegie Mellon University.** Virtual. 3-Jun-2021.
- P.27 ME Vance, "Indoor Particulate Matter from Everyday Activities: Insights from the HOMEChem study". **Invited seminar: Department of Civil and Environmental Engineering, Virginia Tech.** Virtual. 23-Apr-2021.
- P.28 ME Vance, "Indoor particulate matter from everyday domestic sources". **Invited Lecture: Environmental Studies Program Senior Capstone Course. Colorado College.** Virtual. 15-Apr-2021
- P.29 ME Vance, "Fine particulate matter emissions from cooking". **Invited talk: Indoor Exposure to Fine Particulate Matter and Practical Mitigation Approaches – A Workshop. The National Academies of Sciences, Engineering, and Medicine (NASEM).** Virtual. 14-Apr-2021
- P.30 ME Vance, "Indoor aerosols and how to limit your exposure: Some insights from the HOMEChem experiment." **Invited seminar: Department of Environmental Engineering Sciences, University of Florida.** Virtual. 9-Apr-2021.
- P.31 ME Vance, "Indoor aerosols". **Invited lecture: Building for Health, Harvard School of Public Health graduate course.** Virtual. 10-Mar-2021.
- P.32 ME Vance, "Indoor particulate matter and how to limit your exposure: Some insights from the HOMEChem experiment". **Invited seminar: Civil, Architectural, and Environmental Engineering Department, Drexel University.** Virtual. 26-Feb-2021.
- P.33 ME Vance, "Indoor aerosol dynamics during cooking and cleaning activities: Insights from the HOMEChem study". **Invited talk: Atmospheric Chemical Mechanisms Conference.** Virtual. 16-Nov-2020.
- P.34 ME Vance, "Filtration and inhalation resistance behavior of respirators and masks". **Invited talk: The Aerosol Society (UK and Ireland).** Virtual. 30-Sep-2020.

- P.35 ME Vance, "Air quality in a home environment: Insights from the HOMEChem Study". **Invited seminar: Department of Chemistry, College of Wooster.** Virtual. 15-Sep-2020.
- P.36 ME Vance, "HOMEChem: House Observations of Microbial and Environmental Chemistry – Key results to date". **Invited seminar: California Department of Toxic Substances Control.** Virtual. 31-Aug-2020.
- P.37 ME Vance, "Filtration performance of masks, respirators, and alternative materials: Background and preliminary results". **Presentation to the Collaborative of Air Quality Research (CAQR), Department of Mechanical Engineering, CU Boulder.** Virtual. 29-Jul-2020.
- P.38 ME Vance, "Indoor aerosol dynamics during cooking and cleaning activities: Insights from the HOMEChem study". **Invited seminar: National Center for Atmospheric Research (NCAR).** Boulder, CO. 23-Sep-2019. Recording: <https://youtu.be/YSIDXK-2jzc>
- P.39 ME Vance, "HOMEChem: a collaborative study on the chemistry of the home environment". **Invited talk: AAAS Chemistry in Indoor Environments Symposium.** Washington, DC. 19-Sep-2019. <youtu.be/8ljPT3-krtg>
- P.40 ME Vance, "HOMEChem: A study on the chemistry of a home environment". **Invited talk: Public Congressional Briefing hosted by AAAS: "Safe to Breathe? New Discoveries About Indoor Air"**. Washington, DC. 18-Sep-2019. Recording: <https://youtu.be/LZyrDFvGZxw>
- P.41 ME Vance, "Early results from HOMEChem, a collaborative field campaign on indoor chemistry." **Invited seminar: Energy Technologies Area Seminar, Lawrence Berkeley National Lab (LBNL).** Berkeley, CA. 20-May-2019
Recording: <vimeo.com/340472368>
- P.42 ME Vance, "Indoor air quality and chemistry in our home environments". **Invited Talk: Colorado Café Scientifique,** Denver, CO. 23-May-2019
- P.43 ME Vance, "Quantifying human exposure to everyday particulate matter: A study on emissions from 3D printers". **Invited Seminar: Mechanical Engineering Program, Engineering and Technology Department, University of Wisconsin Stout.** Menomonie, WI. 26-Apr-2019
- P.44 ME Vance, "Estimating the release of - and exposure to - silver from nanotechnology-based consumer products for children". Invited talk, **Society of Toxicology 58th Annual Meeting.** Special Workshop: "Risk Assessment of Consumer Products and Articles: Critical Considerations and Case Studies for Characterizing and Quantifying Consumer-Relevant Exposures to Chemicals and Nanomaterials". Baltimore, MD. 13-Mar-2019
- P.45 ME Vance, "HOMEChem: A collaborative indoor chemistry study". **Invited talk: AAAS Annual Meeting.** Special Symposium: "Homes at the Center of Chemical Exposure: Uniting Chemists, Engineers, and Health Scientists". Washington, DC. 17-Feb-2019.
- P.46 ME Vance, "Investigating domestic indoor sources of air pollutants through the HOMEChem study". **Invited talk: NSF Workshop "Evolutions in Urban Chemistry: Growing Influence of Non-Traditional Emission Sources"**. Boulder, CO. 16-Jan-2019.
- P.47 ME Vance, "Particulate matter emissions during HOMEChem". **Invited talk: 2018 Chemistry of Indoor Environment Science Meeting.** Boulder, CO. 26-Oct-2018.
- P.48 ME Vance, "Everyday indoor activities as sources of nanoscale particles and processes". **Invited talk: Workshop: Workshop on the NanoChemistry of Indoor Environments (NanoCIE).** New York, NY. 12-Jul-2018.
- P.49 ME Vance, DK Farmer, "HOMEChem, a collaborative field study investigating the chemistry of indoor environments". **HOMEChem Open house event to over 50 external visitors.** Austin, TX. 22-Jun-2018.
- P.50 ME Vance, "Building a community through HOMEChem, a collaborative field study investigating the chemistry of indoor environments". **Invited talk: Workshop: - Molecular Insights into Chemical Reactions on Indoor Surfaces.** Ann Arbor, MI. 8-May-2018.

- P.51 ME Vance, "Investigating incidental nanoparticles emissions from everyday activities: A study on 3D printers". **Invited seminar: Virginia Tech Center for Sustainable Nanotechnology. Institute for Critical Technology and Applied Science. Virginia Tech.** 19-Apr-2018.
- P.52 ME Vance, "Incidental nanoparticle emissions from everyday activities: A study on 3D printers". **Invited seminar: Center for Environmental Nanoscience and Risk. Arnold School of Public Health. University of South Carolina.** Simultaneously broadcast to Clemson University. 28-Feb-2018.
- P.53 ME Vance, "Investigating emissions of ultrafine aerosols from consumer products: A study on 3D printers". **Invited seminar: Analytical & Environmental Chemistry Division and Atmospheric Chemistry Program Seminar (Jointly sponsored by the Department of Chemistry and Biochemistry and CIRES). University of Colorado Boulder.** 11-Sep-2017.
- P.54 ME Vance, "Experiências em qualidade do ar e nanotecnologia ambiental". **Invited seminar: Department of Environment Engineering, Universidade Federal de Santa Catarina.** Florianópolis, Brazil. 10-Aug-2017.
- P.55 ME Vance, "Investigating emissions of ultrafine aerosols from everyday consumer products". **Invited seminar: Department of Chemistry, University of Denver.** Denver, CO. 25-May-2017.
- P.56 ME Vance, "Oh, the places you – and air pollution – will go". **Keynote speech, Weld County High School Air Quality Research Symposium.** Greeley, CO. 8-Mar-2017.
- P.57 ME Vance, "Understanding people's exposure to ultrafine aerosols". **Invited seminar: Environmental Engineering Program. University of Colorado Boulder.** 27-Jan-2017.
- P.58 ME Vance, "Nanotechnology: Causing or solving environmental problems?" **Departmental seminar, department of Mechanical Engineering. University of Colorado Boulder.** 13-Oct-2016.
- P.59 ME Vance, "Exposure to Aerosol Emissions from Desktop 3D Printers". **Invited presentation: AIHA-RMS/ASSE Fall Technical Conference.** Arvada, CO. 21-Sep-2016
- P.60 ME Vance, "Quantifying people's exposure to nanoscale pollutants". **Invited talk to the Mechanical Engineering Strategic Advisory Board. University of Colorado Boulder.** 10-Sep-2016.
- Before joining CU Boulder:
- P.61 ME Vance, "Quantifying people's everyday exposure to ultrafine atmospheric pollutants". **Departmental seminar, Department of Mechanical Engineering. University of Colorado Boulder.** 25-Feb-2016.
- P.62 ME Vance, "Investigating people's everyday exposure to ultrafine atmospheric pollutants". **Departmental seminar, Department of Civil, Environmental, and Construction Engineering. University of Central Florida.** 18-Feb-2016.
- P.63 ME Vance, "Nanotechnology: The good, the bad, and the tiny". **TEDx Virginia Tech.** 19-Nov-2015. Recording: <https://youtu.be/Z8fWHZ9M2wA>
- P.64 ME Vance, "Microbe-mineral interactions and why we care about environmental nanotechnology". **Invited lecture to 26 high school students participating at Virginia Tech's NanoCamp.** 5-Aug-2015
- P.65 ME Vance, "Data visualization". **Invited seminar to the VTSuN Group, Virginia Tech.** 6-Apr-2015
- P.66 ME Vance, "Potential exposure to nanomaterials from nanotechnology-enabled consumer products". **Invited seminar to the CDC NCEH/ATSDR Nanotechnology Interest Group.** 5-Mar-2015
- P.67 ME Vance, "An inventory of nanotechnology in consumer products". **Invited lecture for Nanoscience and the Environment (NANO3124) undergraduate course. Virginia Tech.** 4-Mar-2015

- P.68 ME Vance, "Nanotechnology in consumer products". **Invited webinar for the National Nanotechnology Applications and Career Knowledge (NACK) network**. 31-Oct-2014
Recording: <http://goo.gl/Ft6xVT>
- P.69 ME Vance, "Flujos de Emisiones, Carbón Negro, y Nanopartículas". **Invited Public Lecture, Universidad Tecnológica de Tijuana**. Tijuana, Mexico. 3-Jun-2010

Conference Platform Presentations (68 in total, 54 after joining CU Boulder)

#Vance group member, *presenter.

- P.70 **Vance, ME***, B Budianto, G Immanuel, H Nara, S Hashimoto, Y Terao, R Boer. *Personal Exposures to Fine Particulate Matter in Java, Indonesia Using Low-Cost Sensors*. Platform presentation, AAAR 42nd Annual Conference, Albuquerque, NM, 2024.
- P.71 Schwink, S[#], T Hao[#], M Schmid[#], **ME Vance**. *Secondary Organic Aerosol Formation Potential of Consumer Products Used Indoors*. Platform presentation, AAAR 42nd Annual Conference, Albuquerque, NM, 2024.
- P.72 Farmer, D.K^{*}, **ME Vance**. *Volatile Organic and Inorganic Compounds: Sources, impacts, and strategies to improve indoor air from the HOMEChem and CASA studies*. Platform presentation, Indoor Air Conference, Honolulu, 2024.
- P.73 **Vance, ME***, DK Famer. *Lessons learned from HOMEChem and CASA concerning indoor aerosols*. Platform presentation, Indoor Air Conference, Honolulu, 2024.
- P.74 O'Brien, R^{*}, C Shirilla, A Hrdina, E Legaard, K Mayer, **ME Vance**, D Poppendieck, DK Farmer. *Chemical characteristics of indoor aerosol particles and surface films*. Platform presentation, Indoor Air Conference, Honolulu, 2024.
- P.75 O'Brien, R^{*}, C Shirilla, E Legaard, S Sankhyan[#], MQ Dibley, K Mayer, E Franklin, DB Millet, **ME Vance**, D Poppendieck, D Farmer. *Complex Organic Mixtures in Indoor and Outdoor Surface Films: Sources and Reactivity*. Platform presentation, AGU Fall Meeting, San Francisco, 2023.
- P.76 Mishra, N^{*}, **ME Vance**, A Novoselac, S Patel[#]. *Optimizing Personal Exposure to Particulate Matter, Energy Consumption and Thermal Comfort Inside a Test House*. Platform presentation, AAAR 40th Annual Conference, Portland, OR, 2023.
- P.77 Thakur, AK^{*}, J Gingrich, **ME Vance**, S Patel[#]. *Insights into Low-Cost Particle Sensors Using Size-Resolved Scattering Intensity of Indoor Aerosols*. Platform presentation, AAAR 40th Annual Conference, Portland, OR, 2023.
- P.78 Webb, M, G Morrison, S Zimmerman, M Link, D Poppendieck, **ME Vance**, DK Farmer, B Turpin^{*}. *Assessing the Influence of Humidity and Surface Reservoirs on Indoor Ammonia Dynamics at the CASA Experiment: A Modeling Study*. Platform presentation, AAAR 40th Annual Conference, Portland, OR, 2023.
- P.79 Huynh, HN^{*}, J Ditto, J Yu, M Link, D Poppendieck, DK Farmer, **ME Vance**, J Abbatt. *Assessing VOC Emission Rates from an Indoor Surface Using a Flux Chamber and PTR-MS*. Platform presentation, AAAR 40th Annual Conference, Portland, OR, 2023.
- P.80 O'Brien, R^{*}, A Hrdina, C Shirilla, E Heery, K Mayer, D Poppendieck, **ME Vance**, DF Farmer. *Chemical Characteristics of Indoor Aerosol Particles and Surface Films*. Platform presentation, AAAR 40th Annual Conference, Portland, OR, 2023.
- P.81 Hayes, A[#], V Sundaram, G Williams, S Venkatesh, C Isenhardt, A Yervez, C Myles, V Sebulsky, J Tsai, K Jayaram, **ME Vance**, G Whiting. *Meeting Schools Where They Are: Integrating Engineering Outreach Curriculum in the Classroom Without Forcing an Agenda*. Platform presentation, ASEE Rocky Mountain Section Regional Conference, Golden, CO, 2023.
- P.82 O'Brien, R, DK Farmer, D Poppendieck, **ME Vance**. *Chemical characteristics of indoor aerosol particles and surface films*. Platform presentation, AGU Fall Meeting, Chicago, IL, 2022.
- P.83 Alves, M, DK Farmer, DM Lunderberg, WW Nazaroff, D Poppendieck, **ME Vance**, AH Goldstein. *Composition and Behavior of Smoke-Related Indoor Gas- and Particle-Phase SVOCs during the CASA 2022 Campaign*. Platform presentation, AGU Fall Meeting, Chicago, IL, 2022.

- P.84 Li, Jienan, DK Farmer, L Garofalo, VH Grassian, M Link, G Morrison, S Pandit, K Reidger, B Turpin, **M Vance**. *Wildfire VOC Partitioning, Surface Cleaning, and Air Cleaning*. Platform presentation, AGU Fall Meeting, Chicago, IL, 2022.
- P.85 Mael, LE^{**}, Hatch, AC^{*}, **ME Vance**. *Impacts of Professional Cleaning Activities on Indoor Particulate Matter Following a Wildfire Event*. Platform presentation, AAAR 40th Annual Conference, Raleigh, NC, 2022
- P.86 Mael, LE^{**}, KJ Mayer, AB Martin[#], DK Farmer, D Poppendieck, **ME Vance**. *Impacts of Aging and Relative Humidity on Wildfire Smoke in Indoor Environments*. Platform presentation, AAAR 40th Annual Conference, Raleigh, NC, 2022
- P.87 Mayer, KJ, J Li, LA Garofalo, LE Mael[#], AB Martin[#], MF Link, D Poppendieck, **ME Vance**, DK Farmer. *The Chemistry of Wildfire Smoke in the Indoor Environment during the CASA Campaign*. Platform presentation, AAAR 40th Annual Conference, Raleigh, NC, 2022
- P.88 Farmer, DK^{*}, K Mayer, LE Mael[#], LA Garofalo, J Li, K Rediger, M Link, D Poppendieck, **ME Vance**. *(Not) Burning down the house: Investigating the fate of wildfire smoke in homes*. Invited presentation, AAAR 40th Annual Conference, Raleigh, NC, 2022
- P.89 Wilkinson, C^{*}. DK Farmer, D Poppendieck, **ME Vance**, O'Brien, RC. *Chemical characteristics of aerosol particles and surface films during the CASA field campaign*. AAAR 40th Annual Conference, Raleigh, NC, 2022
- P.90 Webb, M, G Morrison, N Chang, K Baumann, DK Farmer, D Poppendieck, **ME Vance**, B Turpin. *Dynamics of particle- and gas-phase total water-soluble organic carbon at the CASA indoor air study*. AAAR 40th Annual Conference, Raleigh, NC, 2022
- P.91 Katz, E, H Guo, P Campuzano-Jost, D Day, W Brown, EK Boedicker, MA Pothier, D Lunderberg, S Patel[#], K Patel, P Hayes, A Avery, L Hildebrandt Ruiz, A Goldstein, **M Vance**, DK Farmer, JL Jimenez, P DeCarlo^{*}. *Aerosol Mass Spectrometer Quantification of Cooking Organic Aerosol Indoors and Implications for Outdoor Reduced Aerosol*. Platform presentation, AAAR 39th Annual Conference, Virtual, 2021
- P.92 Sankhyan, S^{**}, J Witteman[#], S Coyan[#], S Patel[#], **M Vance**. *Assessment of PM_{2.5} Concentration and Transport in Indoor Environments Using Low-Cost Sensors*. Platform presentation, AAAR 39th Annual Conference, Virtual, 2021
- P.93 Sankhyan, S^{**}, K Heinselman, P Ciesielski, H Teed, T Barnes, S Patel[#], **M Vance**. *Filtration Efficiency and Inhalation Resistance of Cloth Mask Combinations and the Effects of Washing and Drying on Performance*. Platform presentation, AAAR 39th Annual Conference, Virtual, 2021
- P.94 **Vance, ME^{*}**, DK Farmer, J Bakker-Arkema, S Patel[#]. *IndoorChem: Building a Science Community in the Chemistry of Indoor Environments*. Platform presentation, AAAR 39th Annual Conference, Virtual, 2021
- P.95 Stockman, T^{*}, S Zhu, A Kumar, L Wang, S Patel[#], J Weaver, M Spede, DK Milton, J Hertzberg, D Toohey, **M Vance**, J Srebric, S Miller. *Measurements and Simulations of Aerosol Released while Singing and Playing Wind Instruments*. Platform presentation, AAAR 39th Annual Conference, Virtual, 2021
- P.96 Kumar, AL^{*}, T Stockman, J Hertzberg, SL Miller, DK Milton, J Srebric, S Zhu, S Patel[#], **M Vance**, D Toohey, S Zhu, L Wang. *Flow Visualization and Aerosols In Performance*. Video presentation, 19th International Symposium on Flow Visualization, Virtual, September 14-16, 2021.
- P.97 Kumar, AL^{*}, T Stockman, J Hertzberg, SL Miller, D Milton, J Srebric, S Zhu, L Wang, **M Vance**, D Toohey and S Patel[#]. *Flow Visualization and Aerosols In Performance*. Platform presentation, Summer Biomechanics, Bioengineering, and Biotransport Conference (SB3C2021), Virtual, June 2021 <https://sb3c.org/2021-virtual-conference/program-book-proceedings-book/>
- P.98 Kumar, AL^{*}, J Hertzberg, T Stockman, S Miller, S Patel[#], **M Vance**, D Toohey, DK Milton, S Zhu, L Wang, J Srebric. *Flow Visualization and Aerosol Emissions from Musical Instruments*. Platform presentation, International Virtual Meeting on Measurements of Aerosols from Singing or Playing Wind Instruments, Virtual, March 23, 2021.

- P.99 Kumar, AL*, T Stockman, S Miller, S Patel#, DW Toohey, **ME Vance**, J Hertzberg. *Aerosols in performance*. Platform presentation, American Physical Society Division of Fluid Dynamics meeting, Virtual, Abstract published in Bulletin of the American Physical Society, W17.00005. 2020.
- P.100 Katz, EF, H Guo, P Campuzano-Jost, DA Day, WL Brown, E Boedicker, M Pothier, DM Lunderberg, K Patel, S Patel#, L Hildebrandt Ruiz, **ME Vance**, DK Farmer, AH Goldstein, JL Jimenez, PF DeCarlo. *Indoor source characterization and quantification of cooking organic aerosol contributes to more accurate ambient source apportionment with aerosol mass spectrometers*. Platform presentation, AGU Fall Meeting, Virtual, 2020
- P.101 Hodshire, A*, A Abeleira, L Ampollini, C Arata, J Mattila, MA Pothier, C Wang, J Abbatt, E Carter, P DeCarlo, AH Goldstein, WW Nazaroff, **ME Vance**, DK Farmer. *Now we're cooking: How do activities in the home impact exposure?* Platform presentation, AGU Fall Meeting, Virtual, 2020
- P.102 Sankhyan, S**, J Witteman#, S Patel#, **ME Vance**. *Assessment of PM_{2.5} concentration and transport in indoor environments using low-cost sensors*. Platform presentation, AAAR 38th Annual Conference, Virtual, 2020
- P.103 Patel, S**#, S Sankhyan#, D Rim#, A Novoselac, DK Farmer, **ME Vance**. *Modeling indoor aerosol dynamics during HOMEChem*. Platform presentation, AAAR 38th Annual Conference, Virtual, 2020
- P.104 Kumar, AL*, T Stockman, J Hertzberg, S Miller, **ME Vance**, S Patel#, D Toohey. *Visualization of Flows from Musical Instruments*. Platform (video) presentation, Rocky Mountain Fluid Mechanics Research Symposium, Virtual, 2020. <https://vimeo.com/444987280>.
- P.105 Patel, S**#, **ME Vance**. *Release of aerosols from fuse-deposition modeling 3D printers and associated human exposure*. Invited talk, Society of Toxicology 59th Annual Meeting. Special Workshop: "Society of Toxicology Toxicological, Exposure and Risk Assessment of Emissions from 3D Printers". Virtual, 2020
- P.106 Sankhyan, S**, **ME Vance**. *Indoor black and brown carbon from cooking activities*. Platform presentation, Graduate Engineering Annual Research and Recruitment Symposium (GEARRS). Department of Mechanical Engineering, University of Colorado, Boulder, CO. 2020
- P.107 Sankhyan, S**, **ME Vance**. *Indoor black and brown carbon from cooking activities and outdoor penetration*. Platform presentation, 9th Annual Young Scientist Symposium on Atmospheric Research. Fort Collins, CO. 2019
- P.108 Sankhyan, S**, S Patel#, DK Farmer, **ME Vance**. *Indoor Black and Brown Carbon from Cooking Activities and Outdoor Penetration*. Platform presentation, AAAR 37th Annual Conference. Portland, OR. 2019
- P.109 Patel, S**#, S Sankhyan#, Y Tian, AH Goldstein, DK Farmer, **ME Vance**. *Insights on Aerosol Emissions during HOMEChem*. Platform presentation, AAAR 37th Annual Conference. Portland, OR. 2019
- P.110 DeCarlo, P*, A Avery, E Katz, M Waring, **ME Vance**, DK Farmer. *Outside-In and Other Sources of Aerosols in the Indoor Environment*. Platform presentation, AAAR 37th Annual Conference. Portland, OR. 2019
- P.111 Boedicker, EK, DK Farmer, **ME Vance**. *Spatial Distribution of Indoor Aerosol during HOMEChem Cooking Events*. Platform presentation, AAAR 37th Annual Conference. Portland, OR. 2019
- P.112 Gingrich, J, S Patel#, E Graham, EK Boedicker, DK Farmer, R Corsi, **ME Vance**. *Evaluation of Low-Cost Particulate Matter Sensors in a Test House*. Platform presentation, AAAR 37th Annual Conference. Portland, OR. 2019
- P.113 **Vance, ME**, S Patel#, S Sankhyan#, Y Tian, DK Farmer, AH Goldstein, J Vanhanen. *House Observations of Microbial and Environmental Chemistry (HOMEChem): Insights into Particulate Matter Concentrations and Exposure*. Platform presentation, ISES-ISIAQ (International Societies of Exposure Science and Indoor Air Quality and Climate) Joint Conference. Kaunas, Lithuania. 2019

- P.114 Farmer, DK*, **ME Vance** et al., *The perils of housecleaning and other tales from the mop*. Platform presentation, European Geosciences Union (EGU) General Assembly, Vienna, Austria. 2019
- P.115 Toth, S*#, M Hannigan, **ME Vance**, M Deceglie. *Investigating the use of low-cost particulate matter sensors to inform photovoltaic soiling*. Platform presentation, Graduate Engineering Annual Research and Recruitment Symposium (GEARRS). Department of Mechanical Engineering, University of Colorado, Boulder, CO. 2019
- P.116 Tiwari, A*, **ME Vance**. *Particulate Emissions from 3D Printing*. Platform presentation, AIHA UMS Fall 2018 Professional Development Conference, Roseville, MN. 2018
- P.117 Toth, S*#, M Hannigan, **ME Vance**, M Deceglie, L Micheli, M Muller. *Exploring the use of PM Sensors to Understand PV Soiling*. Platform presentation, NREL 2018 International PV Soiling Workshop, Golden, CO. 2018
- P.118 Toth, S*#, M Hannigan, **ME Vance**, M Deceglie, L Micheli, MA Muller. *A preliminary exploration of the use of PM sensors to understand PV soiling*. Platform presentation, American Solar Energy Society (ASES) 2018 Conference, Boulder, CO. 2018
- P.119 **Vance, ME***, DK Farmer, A Novoselac, R Corsi, L Hildebrandt Ruiz, J Abbatt, PF DeCarlo, P Stevens, TF Kahan, AH Goldstein, WW Nazaroff, JL Jimenez, P Ziemann, R Knight, PC Dorrestein. *An overview and early results from the HOMEChem Indoor Air Chemistry Field Campaign*. Platform presentation, Indoor Air Conference, Philadelphia, PA. 2018
- P.120 **Vance, ME***, Z Linden#, I Beltran#. *Nanoparticle-surface interactions: Implications for nanoscale dust deposition and resuspension*. Platform presentation, 1st Pan-American Congress of Nanotechnology (Pannano). Guarujá, Brazil. 2017
- P.121 **Vance, ME***, Z Linden#, D Pfothner, M Hannigan. *Investigations into the Composition of Aerosols Emitted by 3D Printing Process*. Platform presentation, 36th Annual Conference of the American Association for Aerosol Research (AAAR), Raleigh, NC. 2017
- P.122 **Vance, ME***, V Pegues, W Leng, LC Marr, S Van Montfrans. *Quantifying the exposure to aerosol emissions from desktop 3D printers*. Platform presentation, Association of Environmental Engineering & Science Professors (AEESP) Research and Education Conference, Ann Arbor, MI. 2017
- P.123 Hochella, MF*, Y Yang, **ME Vance**, AJ Tiwari. *Nanoparticles in road dust from impervious urban surfaces: Distribution, identification, and environmental implications in a first study of its type*. Platform presentation, Geological Society of America Annual Meeting, Denver, CO. GSA Abstracts with Programs Vol. 48, No. 7. 2016
- Before joining CU Boulder:
- P.124 **Vance, ME***, Y Yang, AJ Tiwari, F Tou, MF Hochella. *Identification of potentially aerosolized nanoparticles in road dust from Shanghai*. Platform presentation, 251st ACS National Meeting, San Diego, CA. 2016
- P.125 **Vance, ME***, Tulve, N. S.; Willis, R.; Rogers, K.; Thomas, T.A.; LC Marr *Quantifying the release of silver from nanotechnology-based consumer products for children*. Platform presentation, Quantifying Exposure to Engineered Nanomaterials (QEEN) from Manufactured Products Workshop, Arlington, VA. 2015
- P.126 **Vance, ME***, V Pegues, J Page, AJ Prussin, LC Marr. *Aerosol emissions from desktop 3D printers*. Platform presentation, Association of Environmental Engineering & Science Professors Research and Education Conference, New Haven, CT. 2015
- P.127 **Vance, ME***; MF Hochella. *Nanotechnology in the real world: Redeveloping the nanotechnology-based consumer products inventory*. Platform presentation, CEINT Annual Meeting, Durham, NC. 2015
- P.128 **Quadros, ME**, T Kuiken*, SP McGinnis, MS Hull, MF Hochella. *Keeping track of nanotechnology in the real world: Consumer Products Inventory 2.0*. Platform presentation, 247th ACS National Meeting, Dallas, TX. 2014

- P.129 **Quadros, ME***, T Kuiken, SP McGinnis. *Reinventing the Inventory of Nanotechnology Consumer Products*. Platform presentation, 2nd Sustainable Nanotechnology Organization Conference, Santa Barbara, CA. 2013
- P.130 **Quadros, ME***, LC Marr. *Aerosol emissions from silver nanotechnology consumer products*. Platform presentation, 30th Annual Conference of the American Association for Aerosol Research (AAAR), Orlando, FL. 2011
- P.131 **Quadros, ME***, LC Marr. *Aerosol emissions from silver nanotechnology consumer products*. Platform presentation, 3rd International Conference on the Environmental Implications of Nanotechnology, Durham, NC. 2011
- P.132 **Quadros, ME***, LC Marr. *Emission of airborne nanoparticles from silver nanotechnology consumer products*. Platform presentation, 2nd International Conference on the Environmental Implications of Nanotechnology, Los Angeles, CA. 2010
- P.133 **Quadros, ME**, PB Filho, HM Lisboa*. Efficiency evaluation of gas treatment equipment in terms of odor removal using dynamic olfactometry. Platform presentation, 3rd IWA Odour and VOCs Conference: Measurement, Regulation and Control Techniques, Barcelona. 2008
- P.134 **Quadros, ME***, WN Schirmer*, GR Miranda*. *Minicurso: Mudanças Climáticas Globais, Créditos de Carbono e Energias Renováveis* (Short course on Climate Change, Carbon Credits, and Renewable Energy Sources). Platform presentation, 6^a Semana de Ensino, Pesquisa e Extensão - SEPEX, UFSC. 2007
- P.135 **Quadros, ME***, HM Lisboa., PB Filho, GR Miranda, WN Schirmer. *Determinação da eficiência de lavador de gases para remoção de odores via avaliações físico-químicas e olfatométricas*. 24^o Congresso Brasileiro de Engenharia Sanitária e Ambiental, Belo Horizonte, Brazil. 2007
- P.136 **Quadros, ME***, TFF Moura, HM Lisboa. *Análise de correlação entre o fluxo de odor e o fluxo de COV em uma instalação com processo de compostagem de biossólidos*. 24^o Congresso Brasileiro de Engenharia Sanitária e Ambiental, Belo Horizonte, Brazil. 2007
- P.137 **Quadros, ME***, HM Lisboa, WN Schirmer, GR Miranda. *Uso do metano como parâmetro indicador da concentração de odor emitida por aterros sanitários*. IV Simpósio de Engenharia Ambiental, Ribeirão Preto, Brazil. 2004

Conference Posters (42 in total, 25 after joining CU Boulder)

#Vance group member, *presenter.

- P.138 Martin, AB[#], SM Zimmerman, L Mael[#], D Poppendiek, DK Farmer, **ME Vance***. Investigating the Transport of Fine Particulate Matter From a Point-Source in a Multi-Story House With Different Modeling Approaches. Poster presentation, AAAR 42nd Annual Conference, Albuquerque, NM, 2024.
- P.139 S Schwink^{**}, To Hao[#], **ME Vance**. Secondary Organic Aerosol Formation Potential of Consumer Products Used Indoors. Poster presentation, ACS Fall Meeting, Denver, CO, 18-Aug-2024.
- P.140 Mael, L, S Schwink^{**}, T Dunnington[#], N Gotlib[#], **ME Vance**. Impacts of Aging and Relative Humidity on Physical Properties of Wildfire Smoke. Poster presentation, AAAR 40th Annual Conference, Portland, OR, 2023. **Winner, student poster competition.**
- P.141 Lin, EZ*, S Pandit, D Kim, E Johnson, S Liu, Y Zhou, VH Grassian, **ME Vance**, DK Farmer, KJG Pollitt. *Unveiling Airborne Chemical Signatures: Characterization of Household Activities with Passive Air Samplers*. Chemistry of Indoor Environments Capstone Meeting, Washington DC, 2023.
- P.142 Martin, A^{**}, **ME Vance**. DIY Air Cleaning: A simplified method for measuring the clean air delivery rate of do-it-yourself portable air filters. National Conference on Undergraduate Research Annual Conference, Held Virtually, 2021
- P.143 Sankhyan, S^{**}, K Zabinski[#], S Patel[#], **ME Vance**. Investigating aerosol emissions and their volatility from the use of different cooking oils. Poster presentation, AAAR 38th Annual Conference, Held Virtually, 2020

- P.144 Sankhyan, S^{**}, H Teed[#], S Patel[#], **ME Vance**. Investigating the filtration efficiencies of non-standard fabric filters. Poster presentation, AAAR 38th Annual Conference, Held Virtually, 2020
- P.145 Witteman, J[#], Sankhyan, S[#], S Patel[#], **ME Vance**. Using low-cost sensors to assess PM2.5 concentrations, pollutant transport, and air cleaning efficiency in home environments. Council on Undergraduate Research's Virtual Undergraduate Research Week. LinkedIn, 2020
- P.146 Toth, S^{**}, Hannigan, M., **ME Vance**, M Deceglie. Predicting daily photovoltaic soiling from air quality measurements. Photovoltaic Reliability Workshop (PVRW). Lakewood, CO. 2020. **Second place, student poster competition.**
- P.147 Lunderberg, DM^{*}, K Kristensen, C Arata, Y Tian, PK Misztal, EF Katz, PF DeCarlo, S Patel[#], **ME Vance**, WW Nazaroff, AH Goldstein. Indoor abundances of airborne semi volatile organic compounds (SVOCs) are modulated by volatility-dependent partitioning processes. Berkeley Atmospheric Sciences Center (BASC) Symposium. Berkeley, CA. 2020
- P.148 Patel, S^{**}, S Sankhyan[#], **ME Vance**. Insights on Particulate Matter Formation and Evolution during a 3D Printer Operation. AAAR 37th Annual Conference. Portland, OR. 2019
- P.149 Katz, E^{*}, P DeCarlo, A Novoselac, JL Jimenez, W Brown, R O'Brien, DK Farmer, **ME Vance**. An Overview of Aerosol Sources and Chemistry from the HOMEChem Field Campaign. AAAR 37th Annual Conference. Portland, OR. 2019
- P.150 Lin, E^{*}, **ME Vance**, DK Farmer, KG Pollitt. Characterization of SVOCs Derived from Indoor Cooking and Cleaning Activities. AAAR 37th Annual Conference. Portland, OR. 2019
- P.151 Sankhyan, S^{**}, S Patel[#], **ME Vance**. Investigating Aerosol Emissions from Cooking Oils. AAAR 37th Annual Conference. Portland, OR. 2019
- P.152 Toth, S^{**}, M Hannigan, **ME Vance**, Deceglie, M. Enhanced photovoltaic soiling in an urban environment. Proceedings of the 46th Photovoltaic Specialists Conference (PVSC). Chicago, IL. 2019 Published in Conference Proceedings. doi.org/10.1109/PVSC40753.2019.8980735
- P.153 Katz, E^{*}, D Lunderberg, Y Tian, A Goldstein, **ME Vance**, D Farmer, P DeCarlo. HOMEChem (House Observations of Microbial and Environmental Chemistry) preliminary high-resolution aerosol mass spectrometry results from an indoor air field measurement campaign. Eastern Analytical Symposium. Princeton, NJ. 2018
- P.154 Sankhyan, S^{**}, S Patel[#], **ME Vance**. Relationships *between indoor activities and light absorbing aerosol emissions*. 2018 Sloan CIE Science Meeting, Boulder, CO. 2018
- P.155 Bakker-Arkema, J[#], **ME Vance**. *Building a Community through Science Writing and Social Media*. 2018 Sloan CIE Science Meeting, Boulder, CO. 2018
- P.156 Gingrich, J^{*}, S Patel[#], Graham, E., Shafer, J., R Corsi, **ME Vance**. *Evaluation of low-cost air quality monitors during the HOMEChem campaign*. 2018 Sloan CIE Science Meeting, Boulder, CO. 2018
- P.157 Sankhyan, S^{**}, S Patel[#], **ME Vance**. *Relationships between indoor and outdoor black and brown carbon emissions during HOMEChem study*. Research Week Symposium, Boulder, CO. 2018
- P.158 Alamri, F^{**}, **ME Vance**. *The Impacts of Urban Air Pollution and Rainfall on The Light Transmissivity of Solar Panel Coverings*. NREL 2018 International PV Soiling Workshop, Golden, CO. 2018
- P.159 Alamri, F^{**}, **ME Vance**. *Investigating the Impacts of Urban Air Pollution and Rainfall on The Light Transmissivity of Solar Panel Coverings*. Community Building Colorado-Style Conference, Boulder, CO. 2018
- P.160 Toth, S^{**}, M Hannigan, **ME Vance**, Deceglie, M., Micheli, L., Muller, M. *Using Low-Cost Particulate Matter Sensors to Monitor Photovoltaic Panel Soiling*. 10th International Aerosol Conference, St. Louis, MO. 2018
- P.161 Sankhyan, S^{**}, S Patel[#], I Beltran[#], **ME Vance**. *Investigating Aerosol Emissions from Cooking Oils through a Controlled Chamber Experiment*. 10th International Aerosol Conference, St. Louis, MO. 2018

P.162 **Vance, ME***, Pegues, V., Van Montfrans, S., Tiwari, A.J., LC Marr *Aerosol Emissions of 3d Printers in a Chamber Study and Real Indoor Environments*. 35th Annual Conference of the American Association for Aerosol Research (AAAR), Portland, OR. 2016

Before joining CU Boulder:

P.163 **Vance, ME***; P Vikesland, FM Michel, W Leng, M Hull, W Reynolds, M Murayama, LC Marr, A Pruden, MF Hochella. NNCI: *The Virginia Tech National Center for Earth and Environmental Nanotechnology Infrastructure, NCE²NI*. NSF Nanoscale Science and Engineering Grantees Conference, Arlington, VA. 2015

P.164 **Vance, ME***; V Pegues, J Page, AJ Prussin, LC Marr. *Incidental nanoparticle emissions from desktop 3D printers*. 3rd Gordon Research Conference in Environmental Nanotechnology, West Dover, VT. 2015

P.165 Pourzahedi, L.*; **ME Vance**, MJ Eckelman. *Environmental LCA of Nanosilver-enabled Products*. 3rd Gordon Research Conference in Environmental Nanotechnology, West Dover, VT. 2015

P.166 **Vance, ME***, LC Marr. *Potential exposure to engineered nanoparticles in domestic environments*. 1st Gordon Research Seminar in Environmental Nanotechnology, West Dover, VT. 2015

P.167 **Vance, ME***, LC Marr. Quantifying human exposure to ultrafine aerosols emitted from consumer products in indoor environments. ASCE Department Heads Conference, Blacksburg, VA. 2015

P.168 Page, JM*, LC Marr. AJ Prussin II, **ME Vance**. *Nanoparticle emissions from three-dimensional printers*. Annual Biomedical Research Conference for Minority Students, San Antonio, TX. 2014

P.169 Tolve, N*, K Rogers, R Willis, **ME Quadros**, LC Marr. *Potential exposure to silver nanoparticles in children's consumer products*. 1st ISES-ISEE-ISIAQ 2013 joint conference on Environment and Health, Basel, Switzerland. 2013

P.170 **Quadros, ME***, N Tolve, R Willis, K Rogers, LC Marr. *Release of silver from children's consumer products enhanced with nanoparticles*. 2nd Gordon Research Conference in Environmental Nanotechnology, Stowe, VT. 2013. **Winner, student poster competition.**

P.171 **Quadros, ME**, S Hall, D Telionis* *Frequency Response of Sensors for CO₂ Flux Measurements*. 9th International Carbon Dioxide Conference, Beijing, China. 2013

P.172 **Quadros, ME***, LC Marr. *Exposure assessment of aerosols emitted by nanotechnology consumer products*. 29th Annual Conference of the American Association for Aerosol Research (AAAR), Portland, OR. 2010. **Winner, student poster competition.**

P.173 **Quadros, ME***, LC Marr. *Emission of airborne nanoparticles from silver nanotechnology consumer products*. 26th Annual GSA Research Symposium, Blacksburg, VA. 2010

P.174 **Quadros, ME***, LC Marr. Emission of airborne nanoparticles from silver nanotechnology consumer products. 1st ICTAS Research Day, Blacksburg, VA. 2010

P.175 **Quadros, ME***, CT Faria, LC Marr. *A thermophoretic sampler for collecting airborne nanoparticles*. 1st International Conference on the Environmental Implications of Nanotechnology, Washington, DC. 2009

P.176 **Quadros, ME***, HM Lisboa. *Estudo em túnel viário para realização do inventário de emissões de poluentes atmosféricos por fonte veicular*. 24^o Congresso Brasileiro de Engenharia Sanitária e Ambiental, Belo Horizonte, Brazil. 2007

P.177 **Quadros, ME***, P Belli Filho*, WN Schirmer, HM Lisboa. *Utilização da olfatosmetria dinâmica na verificação da eficácia de neutralizador de odor industrial*. XXX Congreso Asociación Interamericana de Ingeniería Sanitaria y Ambiental, Montevideo, Uruguay. 2006

P.178 Schirmer, WN, **ME Quadros**, P Belli Filho*, HM Lisboa. Verificação da eficiência de neutralizador de odor de uso industrial por cromatografia gasosa /espectrometria de massa. XXX Congreso Asociación Interamericana de Ingeniería Sanitaria y Ambiental, Montevideo, Uruguay. 2006

P.179 **Quadros, ME***, FSP Sant'Anna. Dimensionamento de reservatório para utilização de água da chuva. XII Seminário de Iniciação Científica da UFSC, Florianópolis, Brazil. 2002
Winner, student poster competition.

Sponsored Research

Total Since Joining CU Boulder: \$4.6M

As Principal Investigator

Total: \$3.1M, Vance share: \$2.1M

Current:

- 2021 – 2024 **Environmental Protection Agency (EPA)**. *STAR Early Career: Assessing the Transport of Wildfire-Generated Particulate Matter into Homes and Developing Practical Interventions to Reduce Human Exposure (WildPM)*. \$549,000. PI: Vance.
- 2021 – 2026 **National Science Foundation (NSF)**. *CAREER: Physical transformations of aerosols after transport between indoor and outdoor environments*. \$507,672. PI: Vance.
- National Science Foundation (NSF)**. *Career-Life-Balance Supplement*. \$31,596. PI: Vance.
- 2019 – 2022 **The Alfred P. Sloan Foundation**. *To continue the development of community building and data infrastructure for the Chemistry of the Indoor Environments (CIE) program*. \$375,000 (Vance share: \$99,240). PI: Vance. Co-PI: D.K. Farmer (Colorado State University).
- 2018 – 2022 **Department of Energy - National Renewable Energy Laboratory (NREL)**. *Reducing Uncertainty of Fielded Photovoltaic Performance "PV Powerplant Soiling"* \$234,607 (Vance share: \$117,304). PI: Vance. Co-PI: M. P. Hannigan.

Past:

- 2021 – 2022 **Medtronic**. *Experimental Assessment of Test Method for Plume Removal Efficiency* \$20,068. PI: Vance.
- 2020 – 2021 **Department of Energy - National Renewable Energy Laboratory (NREL)**. *Performance of mask filter materials for filtration and inhalation resistance*. \$83,287. PI: Vance.
- 2018 – 2018 **NNCI NanoEarth MUNI User Support Grant**. *Investigating the impacts of rainfall and air pollution on the efficiency of photovoltaic systems*. \$1,500 in travel, laboratory analyses and technical support. PI: Vance.
- 2018 – 2018 **CU Boulder CEAS Water-Energy Nexus IRT**. *Investigating the impacts of rainfall and air pollution on the efficiency of photovoltaic systems*. \$2,500 (Vance share: \$1,250). PI: Vance. Co-PI: M.P. Hannigan.
- 2017 – 2019 **The Alfred P. Sloan Foundation**. *Initiating the development of community building and data infrastructure for the Chemistry of Indoor Environments program through HOMEChem, an interdisciplinary collaborative field experiment*. \$1,251,611 (Vance share: \$700,902). PI: Vance. Co-PI: D.K. Farmer (Colorado State University).
- 2016 - 2016 **Alfred P. Sloan Foundation**. *Building a Science Community in the field of Chemistry of Indoor Environments*. \$50,000. PI: Vance.
- 2016 - 2016 **CU Boulder Engineering Excellence Fund (EEF)**. *Team-Based Learning for Engineering Education*. \$840. PI: Vance.

As Co-Principal Investigator or Senior Personnel

Total since 2016: \$1.5M, Vance share: \$0.33M

Current and Past:

- 2022 – 2024 **National Science Foundation (NSF)**. *RAPID: Sustained Air Quality Impacts of the Marshall Fire in Boulder County*. \$200,000 (Vance share: \$41,879). PI: Joost de Gouw
Co-PIs: Michael Hannigan, Marina Vance, Colleen Reid.
- 2022 – 2022 **CU Boulder CIRES**. *Indoor Air Quality in Homes Impacted by Smoke from the Marshall Fire (HOME SOS)*. \$43,000 (Vance share: \$8,200). PI: Joost de Gouw. Co-PIs: Christine Wiedinmyer, Michael Hannigan, Marina Vance, Colleen Reid.

- 2020 – 2023 **The Alfred P. Sloan Foundation.** *To advance community building and data infrastructure needs of the CIE program through the collaborative Chemical Assessment of Surfaces and Air (CASA) Experiment.* \$1,050,000 (Vance share: \$280,000). PI: Delphine K. Farmer (CSU). Co-PI: Marina Vance.
- 2020 – 2023 **The Alfred P. Sloan Foundation.** *To measure the levels of poly-fluoroalkyl substances (PFAS) in indoor facilities and examine their rates of transformation under conditions commonly found in indoor facilities.* PI: Kyle Doudrick (Notre Dame). \$50,000 (Vance share: materials and supplies, shipping costs). Co-PIs: Graham Peaslee (Notre Dame), Marina Vance.
- 2021 – 2021 **CU Boulder Mechanical Engineering DEI Action Grant.** *Early Engineering Exposure for Underprivileged Youth (Boulder Triple E Fair).* \$10,000. PI: Gregory Whiting. Co-PI: Marina Vance, Austin Hayes (PhD student).
- 2020 – 2020 **National Federation of High School Associations.** *Aerosol generation from playing band instruments and risk of infectious disease transmission.* \$118,326 (Vance share: 29,582). PI: Shelly Miller. Co-PIs: Marina Vance, Jean Hertzberg, Darin Toohey.
- 2018 – 2018 **The Alfred P. Sloan Foundation.** *Workshop on the NanoChemistry of Indoor Environments (NanoCIE).* \$30,746 (Vance share: travel support). PI: Rein Ulijn (CUNY). Co-PIs: Vicki Grassian (UCSD), Kyle Doudrick (Notre Dame), Marina Vance (CU).

Before joining CU Boulder:

- 2015 – 2020 **National Science Foundation (NSF).** *The Virginia Tech National Center for Earth and Environmental Nanotechnology Infrastructure (NanoEarth).* \$2,596,055.00. PI: Michael F. Hochella. Co-PIs: L. Marr, F. Michel, A. Pruden, P. Vikesland. Vance role: Senior Personnel. Assisted PI Hochella in writing this proposal and became the NanoEarth Deputy Director.
- 2010 – 2012 **Environmental Protection Agency (EPA).** *Exposure Assessment of Silver Nanoparticles in Select Children's Consumer Products.* \$69,653.00. PI: L. Marr. Vance role: Co-wrote this proposal with PI Marr and was the sole PhD student to carry out the work.

Teaching Experience

Faculty Course Questionnaires (FCQs) max score is 6.0 until Fall 2019, 5.0 afterwards.

Graduate Courses:

- Fall 2024 **MCEN 5161: Aerosols** (3 credits).
Graduate course, Mechanical Engineering, University of Colorado Boulder.
12 students. 4.2/5.0 FCQ course average, FCQ 4.4/5.0 instructor average.
- Spring 2022 **MCEN 5161: Aerosols** (3 credits).
Graduate course, Mechanical Engineering, University of Colorado Boulder.
12 students. 4.6/5.0 FCQ course average, FCQ 4.9/5.0 instructor average.
- Spring 2018 **MCEN 5228-019: Nanotechnology for Environmental Sustainability** (3 credits).
Graduate technical elective course. Mechanical Engineering, University of Colorado Boulder.
9 students. 5.0/6.0 FCQ course overall, FCQ 5.4/6.0 instructor overall.
- Spring 2017 **MCEN 5228-019: Nanotechnology for Environmental Sustainability** (3 credits).
Graduate technical elective course. Mechanical Engineering, University of Colorado Boulder.
12 students. 5.4/6.0 FCQ course overall, FCQ 5.8/6.0 instructor overall.
New course development.

Undergraduate Courses:

- Spring 2023 **MCEN 3047: Data Analysis and Experimental Methods** (4 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
103 students. 3.9/5.0 FCQ course average, FCQ 3.8/5.0 instructor average.

Lead instructor, responsible for lectures. Co-taught with Prof. Cara Welker, responsible for lab sections

- Fall 2021 **MCEN 3047: Data Analysis and Experimental Methods** (4 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
126 students. 4.2/5.0 FCQ course average, FCQ 4.3/5.0 instructor average.
Lead instructor, responsible for lectures and 2 lab sections.
- Spring 2021 **MCEN 3047: Data Analysis and Experimental Methods** (4 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
108 students. 4.2/5.0 FCQ course average, FCQ 4.3/5.0 instructor average.
Lead instructor, responsible for lectures and 2 lab sections.
COVID-19 Pandemic adaptation: Redeveloped all lab modules to be performed at home by students with kits assembled from affordable materials purchased by students.
Developed four YouTube videos for this course that can be viewed here:
<https://bit.ly/VanceYouTube>
- Fall 2019 **MCEN 3047: Data Analysis and Experimental Methods** (4 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
72 students. 5.1/6.0 FCQ course overall, FCQ 5.0/6.0 instructor overall.
Responsible for two lab sections
- Spring 2019 **MCEN-4045: Mechanical Engineering Design Project 2** (4 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
20 students. 5.5/6.0 FCQ course overall, FCQ 5.3/6.0 instructor overall.
Director to 3 senior design teams.
- Fall 2018 **MCEN 3047: Data Analysis and Experimental Methods** (4 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
75 students. 4.7/6.0 FCQ course overall, FCQ 5.1/6.0 instructor overall.
Responsible for two lab sections
- Fall 2018 **MCEN-4045: Mechanical Engineering Design Project 1** (3 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
20 students. FCQs not assessed for project directors in the fall semester.
Director to 3 senior design teams.
- Spring 2018 **MCEN-4045: Mechanical Engineering Design Project 2** (4 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
20 students. 5.3/6.0 FCQ course overall, FCQ 5.4/6.0 instructor overall.
Director to 3 senior design teams.
- Fall 2017 **MCEN-4045: Mechanical Engineering Design Project 1** (3 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
20 students. FCQs not assessed for project directors in the fall semester.
Director to 3 senior design teams.
- Spring 2017 **MCEN-4045: Mechanical Engineering Design Project 2** (4 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
23 students. 5.5/6.0 FCQ course overall, FCQ 5.5/6.0 instructor overall.
Director to 3 senior design teams.
- Fall 2016 **MCEN-4045: Mechanical Engineering Design Project 1** (3 credits).
Undergraduate course, Mechanical Engineering, University of Colorado Boulder.
23 students. FCQs not assessed for project directors in the fall semester.
Director to 3 senior design teams.

Before joining CU Boulder:

- Spring 2012 **CEE-4144: Air Resources Engineering** (3 credits).
Civil and Environmental Engineering, Virginia Tech.
23 students. Student evaluations: Completion of course objectives: 95/100.
Instructor, Via Academic Prep Fellow. This was a competitive teaching experience awarded to students in the department who are committed to becoming faculty members.

Fall 2007 **ENS-3126: Atmospheric Pollution Control** (3 credits).
 Environmental Engineering, Universidade Federal de Santa Catarina, Brazil.
 40 students. Course not assessed every year.
Lecturer for 1/3 of the semester (covering industrial ventilation), also responsible for developing, assigning, and grading all homework, quizzes, and the exam for this section of the course.

Spring 2007 **ENS-3126: Atmospheric Pollution Control** (3 credits).
 Environmental Engineering, Universidade Federal de Santa Catarina, Brazil.
 40 students. Course not assessed every year.
Lecturer for 1/3 of the semester (covering industrial ventilation), also responsible for developing, assigning, and grading all homework, quizzes, and the exam for this section of the course.

Related teaching activities

2019-2020 **MCEN-4045: Mechanical Engineering Design Project 1 & 2** (7 credits).
 Undergraduate course, Mechanical Engineering, Colorado Mesa University Partnership Program. 3 students.
Project client to a senior design project entitled: "Development and construction of an adaptable air treatment enclosure for 3D printers and other office equipment"
One of the students (Alan Carrasco) went on to become a summer REU in the Vance Lab after this experience.

2018-2019 **MCEN-4045: Mechanical Engineering Design Project 1 & 2** (7 credits).
 Undergraduate course, Mechanical Engineering, Colorado Mesa University Partnership Program. 2 students.
Project client to a senior design project entitled: "Development and construction of a collision type atomizer to generate sub-micron aerosol"

2017-2018 **MCEN-4045: Mechanical Engineering Design Project 1 & 2** (7 credits).
 Undergraduate course, Mechanical Engineering, Colorado Mesa University Partnership Program. 2 students.
Project client to a senior design project entitled: "Development and construction of a thermometer for analyzing nanoscale particulate matter"
One of the students (Kwasi Kyeremeh-Dapaah) had been a summer REU in the Vance Lab in the previous summer and chose to be a team member in this senior design project.

Course Development

MCEN 5228-019 Nanotechnology for Environmental Sustainability (3 credits)

Graduate technical elective course. Mechanical Engineering, University of Colorado Boulder.
 Developed for teaching in Spring 2017. Taught again in Spring 2018.

Created a new multidisciplinary graduate course with students enrolled coming from the mechanical, material science, and environmental engineering programs. The course provides (1) an overview of traditional and emerging nanomaterials, their synthesis, and applications and (2) an overview of sustainability principles and challenges. The class was developed using the *Team-Based Learning* concept—in which the students prepare before each class by reading chapters and papers and watching videos, in order to spend the class period performing individual and team-based teaching and learning assessment activities. The course includes 3 individual student presentations and a research proposal-style final project.

MCEN 5161: Aerosols (3 credits)

Graduate course, Mechanical Engineering, University of Colorado Boulder.
 Developed for teaching in Spring 2022.

This course had been previously taught by D. Henze (2011, 2015) and S. Miller (2005). I re-developed all lectures and assignments and adapted the course to use a different textbook, *Aerosol Technology* (Hinds, 1999). The course included an experimental final project, hands-on sessions on

building sensors, an outreach experience for high-school students, and an additional project on video creation for science communication.

Students and Postdoctoral Scholars Advised and *Supervised

Postdoctoral Scholars

- 2022 – 2023 **Liora Mael**, CASA project. After finishing her postdoc at CU Boulder, Liora became a postdoctoral fellow at the Scientific Research and Analysis Laboratory, Winterthur Museum.
- 2018 – 2020 **Sameer Patel**, HOMEChem project. After finishing his postdoc at CU Boulder, Sameer became an Assistant Professor of Civil Engineering at IIT Gandhinagar.

PhD students

- 2024 – present **Rileigh Robertson**, Environmental Engineering.
- 2021 – present **Sofie Schwink**, Environmental Engineering.
2023 student poster competition winner, AAAR.
- 2018 – 2023 **Austin Hayes**, Mechanical Engineering (co-advised with G. Whiting). Dissertation title: “Additive Manufacturing for Wind Turbine Generators: How Safety, Hybrid Approaches, and Advanced Cooling Come Together to Create High-Power Density Generators.” PhD defense: 30 Aug 2023. Austin was a 2019 recipient of the NSF Graduate Research Fellowship Program (GRFP). After graduation, Austin received a Fulbright Scholar Award to Norway.
- 2019 – 2022 **Sumit (Sam) Sankhyan**, Mechanical Engineering. Dissertation title: “Aerosol Science and Engineering Research for Indoor Air Quality Improvement and Mitigating Exposure”. PhD defense: 17 Jun 2022.
After graduation, Sam became a Postdoctoral Associate at CU Boulder under Shelly Miller and then joined ERM Canada as an Air Quality Consultant.
- 2017 – 2021 **Sarah Toth**, Environmental Engineering (co-advised with M. Hannigan). Dissertation title: “Ambient Particular Matter and Photovoltaic Soiling Loss”. PhD defense: Jun 2021.
2018 recipient of Rocky Mountain States Section of the Air & Waste Manag Assoc Scholarship. 2020, 2nd place, student poster competition, PVRW.
After graduation, Sarah became an Associate at Rocky Mountain Institute.
- 2017 – 2020 **Julia Bakker-Arkema***, PhD student in the department of Chemistry, CU Boulder.
Advisor: Paul Ziemann. Supervised by Vance for 20% of Julia’s time on science communication efforts for the IndoorChem project.

MS thesis or MS report students

- 2022 – 2023 **Andrew B Martin**, Environmental Engineering. MS thesis title: “Transport and Implications of Point-Source PM_{2.5} Emissions in a Multi-Story House”. MS thesis defense: 28 Nov 2023.
After graduation, Andrew became a Physical Scientist Researcher/Scientist II at CDPHE.
- 2021 – 2023 **Brittany Nixon**, Mechanical Engineering (co-advised with M. Hannigan). MS thesis title: “Modeling photovoltaic soiling with co-located ambient particulate matter data.” MS thesis defense: 19 Apr 2023.
After graduation, Brittany became a Performance Engineer at AES Clean Energy.
- 2018 – 2019 **Sumit Sankhyan**, Mechanical Engineering. MS thesis title: “Indoor black and brown carbon from cooking activities and outdoor penetration: Insights from the HOMEChem study.” MS thesis defense: Apr 2019.
After graduation, Sumit became a PhD student in the Vance Lab.
- 2017 – 2018 **Faisal Alamri**, Mechanical Engineering. “MS thesis title: “Chemical characterization of natural soiling on solar panel glass covers in an urban environment”. MS thesis

defense: Nov 2018.

After graduation, Faisal became a Research Assoc at King Abdulaziz City for Sci and Technol.

2017 – 2018 **Zachary Linden**, Environmental Engineering. MS report: “Characterization of aerosol and VOC emissions from 3D printing processes in a controlled chamber environment”. MS report: Nov 2018. After graduation, Zack became an Environmental Engineer at Arcadis.

2017 – 2018 **Itza Beltran**, Mechanical Engineering. Worked in our laboratory for 1 year and later completed a coursework MS. After graduation, Itza became a Mechanical Engineering Intern at Particle Measuring Systems.

Before joining CU Boulder:

2015 – 2016 **Valerie Pegues***, Master of Public Health, Virginia Tech.

Undergraduate students

2024 – 2025 **Ethan Richter**, Discovery Learn Apprentice (DLA), CU Boulder

2024 – 2025 **Henrik Helmig**, Discovery Learn Apprentice (DLA), CU Boulder

2023 – 2024 **Maximilian Schmid**, CU Summer Program for Undergraduate Research (SPUR), Summer 2023, and continued on as a student researcher in the lab until Dec 2024.

2023 – 2024 **Tony Hao**, Discovery Learn Apprentice (DLA), CU Boulder

2022 **Nicholas Gotlib**, Discovery Learn Apprentice (DLA), CU Boulder

2022 **Thomas Dunnington**, CU Summer Program for Undergraduate Research (SPUR), Summer 2022, and continued on as a student researcher in the lab until Spring 2023.

2021 – 2022 **Ashley Fowler**, Discovery Learn Apprentice (DLA), 2021 – 2022 academic year, and continued on as a student researcher in the lab through Summer 2022.

2021 – 2022 **Austin Spafford**, student researcher, CU Boulder

2021 – 2022 **Steven Coyan**, CU Summer Program for Undergraduate Research (SPUR), Summer 2021, and continued on as a student researcher in the lab until Summer 2022.

2021 **Adjoa Sakwa**, Research Experience for Community College Students (RECCS) program, Summer 2021.

2020 – 2021 **Andrew Martin**, Discovery Learn Apprentice (DLA), CU Boulder, and continued on as a student researcher in the lab and then became an MS student in the lab in Jan 2022.

2020 **Hannah Teed**, student researcher, CU Boulder.

2019 **Kayley Zabinski**, CU Summer Program for Undergraduate Research (SPUR).

2019 **Alan Carrasco**, Summer Research Experience, CU Boulder / Colorado Mesa University.

2018 – 2020 **Julia Witteman**, Student Researcher in the lab, then became a Discovery Learn Apprentice (DLA), CU Boulder.

2019 **Devin Lindsey**, Earn-Learn Apprentice, CU Boulder.

2018 – 2019 **Gage Van Natta**, Discovery Learn Apprentice, CU Boulder.

2017 **Kwasi Kyeremeh-Dapaah**, Summer Research Experience, CU Boulder / Colorado Mesa University.

Before joining CU Boulder:

2014 **Julian Page***, Summer Research Experience for Undergraduates, Virginia Tech.

2011 **Raymond Pierson***, Sumer Research Experience for Undergraduates, Virginia Tech.

2007 **Fabrcio J. Vieira**, Undergraduate Honor’s Thesis, UFSC.

2007 **Magnun M. Vieira**, Undergraduate Honor’s Thesis, UFSC.

2007 – 2008 **Valéria Vidal de Oliveira***, Undergraduate Researcher, UFSC.

- 2007 – 2008 **Isabel M. Moreira***, Undergraduate Researcher, UFSC.
 2006 – 2007 **Priscila B. de Campos***, Undergraduate Researcher, UFSC.

Graduate Student Committee member

- 2024 – 2025 **Jonathan Silberstain, PhD.** Mechanical Engineering, CU Boulder.
 2021 – 2022 **Corey Trujillo, PhD.** Mechanical Engineering, CU Boulder.
 2019 – 2021 **Kristen Okorn, PhD.** Environmental Engineering, CU Boulder. “Facilitating Community Understanding of Air Quality.” Advisor: M. Hannigan.
 2017 – 2019 **Aaron Lamplugh, PhD.** Mechanical Engineering, CU Boulder. “Volatile Organic Compounds: Exposure and Mitigation in Colorado Nail Salons” Advisor: L. Montoya.
 2017 – 2018 **Ashley Collier, PhD.** Mechanical Engineering, CU Boulder. “Enabling Community-based Air Quality Science through the Development of Sensor Systems, Resources, and Partnerships”. Advisor: M. Hannigan.
 2016 – 2018 **Preateek Man Shrestha, PhD.** Mechanical Engineering, CU Boulder. “Impacts of Energy-Efficiency Retrofits on Ventilation and Indoor Air Quality in Low-Income Households”. Advisor: S. Miller.
 2016 – 2018 **Samantha McNeal, PhD.** Environmental Health Sciences, Center for Environmental Nanoscience and Risk (CENR), Arnold School of Public Health University of South Carolina. Advisor: J. Lead.
 2017 – 2018 **Ryan Militello-Hourigan, MS.** Mechanical Engineering, CU Boulder. “The impacts of cooking and an assessment of indoor air quality in Colorado passive and tightly constructed homes”. Advisor: S. Miller.
 2016 – 2017 **Joanna Gordon Casey, PhD.** Mechanical Engineering, CU Boulder. “Improving Low-Cost Measurement Techniques to Investigate the Connections Between Fossil Fuels and Air Quality: From Oil and Gas Production to Home Heating”. Advisor: M. Hannigan.
 2016 **Ricardo Piedrahita, PhD.** Mechanical Engineering, CU Boulder. “On the assessment of air pollution and behavior within a cookstove intervention study in Northern Ghana and development of improved measurement techniques”. Advisor: M. Hannigan.

Before joining CU Boulder:

- 2007 **Magnun M. Vieira, B.S.** Environmental Engineering, UFSC. Honor’s thesis: “Efficiency evaluation of a wet scrubber for the treatment of a Florianopolis restaurant’s gas effluents”.
 2007 **Caroline C. Dalago, B.S.** Environmental Engineering, UFSC. Honor’s thesis: “Tetrahydrothiophene removal from natural gas using activated carbon”.
 2006 **Cristian Marquezi, B.S.** in Environmental Engineering, UFSC. Honor’s thesis: “Using the HYSPLIT model to identify the origin of acid rain on the coast of Santa Catarina (Brazil)”.

Engineering and Other Work Experience

- 2011 **Engineering Consultant**, Aeroprobe Corp. Blacksburg, VA.
 NASA-funded project to measure the frequency response of two small-scale CO₂ sensors inside a wind tunnel. These sensors are to be assembled inside a probe at the nose of an unmanned aerial vehicle.
 2004 – 2007 **Lead Engineering Consultant**, Laboratório de Controle da Qualidade do Ar, Brazil.
 I was a leading engineer on 14 air quality and odor impact assessment contracts with a wide variety of industries.
 2003 **Engineering Intern**, Odotech, Inc. Montreal, Canada.

Odotech is a French-speaking spin-off company of the Université de Montréal. I collected air samples in multiple industries and analyzed them for odor concentration using the Odile olfactometer to perform odor impact assessments.

- 2002 – 2003 **Engineering Intern**, Socioambiental Engenharia, Florianópolis, Brazil.
Part of the team responsible for the transition of environmental programs from the construction of the Cana Brava hydropower plant to its operational phase.
- 2002 – 2006 **Multilingual agent**, Portuguese/English/French/Spanish, Florianópolis, Brazil.
Part of the support team in over a dozen international conferences and corporate events.

Professional Leadership & Service

Leadership in peer-reviewed journals

- 2022 – present **Aerosol Science and Technology (AAAR Society Journal)**. Editorial Advisory Board Member.
- 2021 – present **Environmental Science: Atmospheres (Royal Society of Chemistry Journal)**. Advisory Board Member.
- 2020 – 2023 **ES&T Engineering (American Chemical Society Journal)**. Early Career Board Member.
- 2018 – 2019 **Environmental Science: Processes & Impacts (Royal Society of Chemistry Journal)**. Special issue editor “Indoor air: sources, chemistry and health effects”. Issue 21, 2019. Seven of this issue’s 17 papers were included in the “Best Papers of 2019” collection from ESPI.

Manuscript and book chapter reviewer (2013 – present)

- Environmental Science & Technology
- ES&T Engineering
- Atmospheric Environment
- Aerosol Science & Technology
- Environmental Science: Nano
- Environmental Science: Atmospheres
- Environmental Science: Processes & Impacts
- Environmental Pollution
- Building and Environment
- International Journal of Nanomedicine
- Atmosphere
- Critical Reviews in Environ. Sci. and Technology
- NanoImpact
- Nanotoxicology
- Environmental Science and Pollution Research
- International J. of Occupational and Environmental Health
- International J. of Environ. Research and Public Health
- Journal of Physical Chemistry
- Nanotechnology for Environmental Engineering
- BioMed Research International
- Waste and Biomass Valorization
- Wiley Books

Proposal reviewer

- 2021 DOE STTR; NSF Environmental Engineering (CBET) CAREER proposals.
- 2016 EPA STAR Graduate Fellowship.
- 2016 NSF Environmental Engineering (CBET) unsolicited proposals.

Service to National Academies of Science, Engineering, and Medicine (NASEM)

- 2021 - 2023 “Indoor Exposure to Fine Particulate Matter and Practical Mitigation Approaches – A NASEM Consensus Study.” Committee Member.
- 2020 - 2021 “Indoor Exposure to Fine Particulate Matter and Practical Mitigation Approaches – A Workshop.” Committee Member.

Service to American Association for Aerosol Research (AAAR)

- 2022 **40th AAAR Conference**. Special symposium organizer: “Biomass combustion: outdoor/indoor transport and indoor air quality”; Internet Communications Committee Member.

- 2021 **39th AAAR Conference.** Special symposium organizer: “Translating aerosol research for societal impact: Science communication and public outreach”; Internet Communications Committee Member.
- 2020 **38th AAAR Conference.** Chair of the Indoor Aerosols and Aerosol Exposure Working Group. Technical Committee Member; Internet Communications Committee Member.
- 2019 **37th AAAR Conference.** Special Symposium co-organizer: “The air we breathe: indoor aerosol sources and chemistry”; Vice-Chair of the “Indoor Aerosols and Aerosol Exposure” working group.
- 2018 **10th International Aerosols Conference (IAC).** Platform session chair and poster judge: “Indoor Aerosols”. St Louis, MO
- 2017 **36th AAAR Conference.** Platform session chair: Indoor Aerosols, poster judge, Raleigh, NC.
- 2016 **35th AAAR Conference.** Platform session chair: Indoor Aerosols, Portland, OR.
- 2011 **30th AAAR Conference.** Poster session judge and student plenary assistant, Orlando, FL.
- 2010 **29th AAAR Conference.** Student plenary assistant, Portland, OR.

Service to Alfred P. Sloan Foundation Program on Chemistry of Indoor Environments (CIE)

- 2021 **Second Chemistry of Indoor Environments (CIE) Science Meeting (IndoorChem2021).** Chair. Organized the second science meeting for the CIE network, a 5-day conference held virtually in Jan – May 2021 for ~400 participants. Organizer and co-chair with Delphine Farmer, Colorado State University.
- 2020 **Sloan CIE Field Experts Workshop.** Co-chair, March 26 - 27 2020 (held virtually due to the COVID-19 pandemic). 12 participants. Organizer and co-chair with Delphine Farmer, Colorado State University.
- 2018 **First Chemistry of Indoor Environments Science Meeting.** Chair. Organized the first meeting for the CIE network, a 102-participant, 3-day conference held in Boulder, CO in 24-26-Oct-2018. Co-chaired with Delphine Farmer, Colorado State University.
- 2017 **Sloan Foundation NanoChemistry of Indoor Environments Workshop (NanoCIE).** Workshop organizer along with Prof. Rein Uljin (CUNY), Prof. Vicki Grassian (UCSD), Prof. Kyle Doudrick (Notre Dame). New York, NY. 12-Jul-2018.

Service to International Society for Indoor Air Quality and Climate (ISIAQ)

- 2018 - 2020 **ISAQ.** Elected Vice-chair of the Scientific and Technical Committee 12: Source, monitoring and evaluation: Aerosols.
- 2019 **ISES-ISIAQ joint meeting.** Poster judge.
- 2018 **Indoor Air 2018.** International scientific advisory committee, podium session chair.

Service to Other Societies

- 2024 **American Chemical Society, ACS Fall Meeting.** Workshop: Elevating Indoor Chemistry. Organizer along with Delphine Farmer. Denver, CO.
- 2022 **American Thoracic Society,** Workshop: Health consequences and the relative contribution of indoor versus outdoor pollutants. Discussion Leader. Virtual.
- 2017 **1st Pan-American Congress of Nanotechnology,** poster judge, Guarujá, Brazil.
- 2015 **Consumer Product Safety Commission (CPSC),** National Nanotechnology Initiative (NNI) Quantifying Exposure to Engineered Nanomaterials from Manufactured Products Workshop (QEEN), platform session chair: Consumer Exposure Studies I - General Products. Arlington, VA.
- 2013 – 2016 **Center for the Environmental Implications of Nanotechnology (CEINT) Scholars Steering Committee,** Virginia Tech representative.

Institutional Service – Department of Mechanical Engineering

- 2023 Faculty search committee member.
- 2021 – 2022 Diversity, Equity, and Inclusion (DEI) committee member.
- 2020 – 2021 External relations committee member.
- 2017 – 2019 Graduate education committee member.
- 2017 – 2018 Graduate Education Recruitment and Research Symposium (GEARRS) faculty co-chair (2017) and chair (2018)
- 2016 – 2017 External relations committee member.
- 2016 – 2017 Faculty search committee member.

Institutional Service – Environmental Engineering Program

- 2024 Associate director for graduate education.
- 2023 Graduate seminar organizer.
- 2016 – 2022 Graduate education committee member, air quality grad application reviewer, undergraduate advisor.

Institutional Service – College of Engineering

- 2016 – 2017 Inclusive excellence committee member.

Other Service, before joining CU Boulder:

- 2016 **Institute for Critical Technology and Applied Science (ICTAS)** junior faculty award proposal reviewer.
- 2011, 2012 **Interdisciplinary Graduate Education Program (IGEP)**, advisory board member.
- 2012 **Graduate Student Assembly Research Symposium**, committee member, abstract reviewer, poster judge.
- 2012 **2nd Interdisciplinary Research Symposium**, co-organizer, poster session chair.
- 2012 **2nd Interdisciplinary Research Day**, co-organizer, round-table moderator.
- 2011 **Graduate Student Assembly Research Symposium**, abstract reviewer.
- 2011, 2012 **CEE-EWR Open House** student volunteer and student host.
- 2011 **First Virginia Tech Interdisciplinary Research Symposium**, co-organizer.
- 2011 **First Interdisciplinary Research Day**, co-organizer.
- 2011 **CEE-EWR Open House** student host.
- 2010 – 2013 **Interdisciplinary Research Honor Society (IDR)**, co-founder and member. First Interdisciplinary Honor Society in the world. Along with building this organization from the ground up, I helped organize two annual events: IDR Day (120+ attendees) and Interdisciplinary Research Symposium (~300 attendees).
- 2009 – 2013 **Brazilian Association at Virginia Tech**, president (2009 – 2010); board member (2008 – 2013).

Outreach & Engagement

Media coverage

Interviewed for many news articles that can be found here:

<http://www.colorado.edu/lab/vance/news-archive>

Web and social media

- 2017 - present Creator of the www.IndoorChem.org website, YouTube channel, and associated social media accounts.
- 2013 - 2016 Responsible for the VTSuN and NanoEarth websites and associated social media accounts.

Outreach Events

- 2022 **Mechanical Engineering Triple E Fair**, Science outreach booth for high school students. Boulder, CO
- 2019 **Café Scientifique**, Invited speaker at a science café in Denver, CO.
- 2016 **USA Science Festival**, Outreach booth for the Sustainable Nanotechnology Organization (SNO) and VTSuN at the largest science festival in the country. Washington, DC.
- 2015 **TEDx Virginia Tech**, invited speaker: The good, the bad, and the tiny. Blacksburg, VA.
- 2015 **EPA Ntl Sustainable Design Competition**, Outreach Booth, Washington, DC.
- 2015 **VT Nanocamp**. 3-day summer camp for 26 high school students. Blacksburg, VA.
- 2014, 2015 **Virginia Science Festival**, Outreach booth for VTSuN. Blacksburg, VA.
- 2013, 2014 **TEDx Virginia Tech**, Outreach booth for VTSuN. Blacksburg, VA.
- 2014 **Kid's Tech University**, ages 9 – 12, Virginia Tech. Blacksburg, VA.

Professional Membership

- 2017 - present International Society of Indoor Air Quality and Climate (ISIAQ)
- 2015 - present Association of Environmental Engineering & Science Professors (AEESP)
- 2013 - 2019 Sustainable Nanotechnology Organization (SNO)
- 2012 - present American Chemical Society (ACS)
- 2012 - present Academic Excellence and Leadership (AEL) Honor Society of Graduate Students
- 2010 - present American Association for Aerosol Research (AAAR)
- 2010 - present Iota Delta Rho (IDR), Interdisciplinary Research Honor Society (founding member)

Languages

Portuguese (native), English (fluent), Spanish (intermediate, *out of practice*), French (intermediate, *out of practice*).