

Marina E. Vance

Assistant Professor · Mechanical Engineering · Environmental Engineering (courtesy) · University of Colorado Boulder
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EDUCATION

- 2008 – 2012 **Ph.D.** **Virginia Tech**, Civil and Environmental Engineering.
“Assessing the potential for human exposure to emissions from silver nanotechnology consumer products”. Advisor: Linsey Marr
- 2007 – 2008 **M.S.** **Universidade Federal de Santa Catarina** (UFSC, Brazil), Environmental Engineering.
“Indoor air quality in hospital environments: chemical and microbiological parameters”.
Advisors: Henrique M. Lisboa and Vetúria L. Oliveira
- 1999 – 2004 **B.S.** **Universidade Federal de Santa Catarina**, Sanitation and Environmental Engineering.
“Odor evaluation in landfills and certification of a CEN jury for olfactometry”.
Advisors: Thierry Pagé and Henrique M. Lisboa (top 5% of graduating class)

ACADEMIC APPOINTMENTS

- 2016 - present **Assistant Professor**, Department of Mechanical Engineering, 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).
- 2001 – 2002 **Undergraduate Research Assistant**, Environmental Engineering, UFSC (Brazil).

HONORS

- 2018 Outstanding Young Alumni, Via Department of Civil and Environmental Engineering, Virginia Tech.
- 2018 Most accessed and cited paper: “Nanotechnology in the real world: Redeveloping the nanomaterial consumer products inventory” *Beilstein Journal of Nanotechnology* (2015 – 2018).
- 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.
- 2015 Michigan University NextProf Engineering Workshop Selected Attendee.
- 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 group member, * corresponding)

Publication Metrics

[Google Scholar](#) h-index: 14
Web of Science h-index: 10

ResearcherID: [B-8711-2014](#)
(Maiden name: **Marina E Quadros**)

Manuscripts Submitted (2) and In Preparation (3)

1. N.K. Geitner, C.O. Hendren, G. Cornelis, R. Kaegi, J.R. Lead, G.V. Lowry, I. Lynch, B. Nowack, E. Petersen, E. Bernhardt, S. Brown, W. Chen, C. Garidel-Thoron, J. Hanson, S.L. Harper, K. Jones, F. von der Kammer, A. Kennedy, J. Kidd, C.W. Matson, C. Metcalf, J.A. Pedersen, W.J.G.M. Peijnenburg, J.T.K. Quik, S.M. Rodrigues, J. Rose, P. Sayre, M. Simonin, C. Svendsen, R.L. Tanguay, N. Tufenkji, T. van Teunenbroek, G. Thies, Y. Tian, J. Rice, A. Turner, J. Liu, J. Unrine, M.E. Vance, J.C. White, M.R. Wiesner*. Harmonizing Across Environmental Nanomaterial Testing Media for Increased Comparability of Nanomaterial Datasets. *Environmental Science: Nano*, Submitted.
2. Garcia, E.B., Alms, C., Hinman, A.W., Kelly, C., Smith, A., Vance, M., Loncarek, J., Marr, L.C., Cimini, D.* Single-cell analysis reveals that silver nanoparticle exposure induces cell division defects in non-transformed human epithelial cells. *Particle and Fibre Toxicology*, Submitted.
3. Sankhyan, S., S. Patel, M.E.Vance*. Indoor black and brown carbon from cooking activities and outdoor penetration: Insights from the HOMEChem study In prep. for *Environmental Science: Processes and Impacts*.
4. Patel, S., S. Sankhyan, J. Vanhanen, M. E. Vance*. Indoor aerosol emissions during the HOMEChem study: sources, evolution, and estimated exposure. In prep. for *Environmental Science & Technology*.
5. Farmer, D.K.*, M.E. Vance, J. Abbatt, A. Abeleira, M. R. Alves, C. Arata, E. Boedicker, S. Bourne, F. Cardoso-Saldaña, R. Corsi, P.F. DeCarlo, A.H. Goldstein, V.H. Grassian, L. Hildebrandt Ruiz, J.L. Jimenez, T. F. Kahan, E.F. Katz, J. Mattila, W. Nazaroff, A. Novoselac, V.W. Or, R. E. O'Brien, S. Patel, S. Sankhyan, P. S. Stevens, Y. Tian, C. Wang, S. Zhou, Y. Zhou. Overview of the House Observations of Microbial and Environmental Chemistry (HOMEChem) study. In prep. for *Environmental Science: Processes and Impacts*.

Peer-Reviewed Journal Publications in English (16)

1. Adawi, H.I., Newbold, M.A., Reedz, J., Vance, M.E., Feitshans, I., Bickford, L.R., Lewinski, N.A. (2018) "Nano-Enabled Cosmetics: Current Developments in Consumer Safety" *NanoImpact*, 11, 170 -179
<http://dx.doi.org/10.1016/j.impact.2018.08.002>
2. Vance, M.E.*, Pegues, V. Leng, W., VanMonfrans, S., Marr, L.C. (2017) "Aerosol emissions from fuse-deposition modeling 3D printers in a chamber and in real indoor environments". *Environmental Science & Technology*, 51 (17), 9516-9523. <http://dx.doi.org/10.1021/acs.est.7b01546>
3. Pourzahedi, L., Vance, M.E., Eckelman, M.J.* (2017) "Life Cycle Assessment and Release Studies for 15 Nanosilver-enabled Consumer Products: Investigating Hotspots and Patterns of Contribution". *Environmental Science & Technology*, 51 (12), 7148-7158. <http://dx.doi.org/10.1021/acs.est.6b05923>
4. Dale, J.G.* , Cox, S.S., Vance, M.E., Marr, L.C., Hochella, M. (2017). "Transformation of cerium oxide nanoparticles from a diesel fuel additive during combustion in a diesel engine". *Environmental Science & Technology*, 51 (4), 1973-1980. <http://dx.doi.org/10.1021/acs.est.6b03173>

Before joining CU Boulder:

5. Yang, Y., Vance, M.E., Tou, F., Tiwari, A., Hochella, M.* (2016) "Potentially Aerosolized Nanoparticles in road dust in Shanghai: identification, distribution and environmental implications". *ES:Nano*, 534 (3)
<http://dx.doi.org/10.1039/c6en00056h>

Front Cover

Top-10 most read papers in 2016 for ES:Nano

6. Baalousha, M.* , Yang, Y.* , Vance, M.E., Coleman, B., Xu, J., Blaszcak, J., McNeal, S., Steele, M., Bernhardt, E., Hochella, M.F. (2016) " Outdoor urban nanomaterials: The emergence of a new, integrated, and critical field of study". *Science of the Total Environment*, 557, 740-753. <http://dx.doi.org/10.1016/j.scitotenv.2016.03.132>
7. Vance, M.E.*, Vejerano, E. Kuiken, T., McGinnis, S., Hochella, M., Hull, M. (2015) "Nanotechnology in the real world: Redeveloping the nanomaterial consumer products inventory" *Beilstein Journal of Nanotechnology*, 6, 1769-1780. <http://dx.doi.org/10.3762/bjnano.6.181>
Most accessed BJANO paper per year for 2015 - 2018.
Most cited ever BJANO paper.
8. Tolve, N.S.* , Stefaniak, A.B., Vance, M.E., Rogers, K., Mwilu, S., LeBouf, R.F., Schwegler-Berry, D., Willis R., Thomas T.A., Marr, L.C. (2015) "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*, 218(3): 345-357. <http://dx.doi.org/10.1016/j.ijheh.2015.02.002>

9. Vance, M.E., Marr, L.* (2015) "Exposure to airborne engineered nanoparticles in the indoor environment". *Atmospheric Environment* 106: 503-509. <http://dx.doi.org/10.1016/j.atmosenv.2014.12.056>
10. Quadros, M.E.*, Pierson IV, R., Tulve, N., Willis, R., Rogers, K., Thomas, T., Marr, L. C. (2013) "Release of silver from nanotechnology-based consumer products for children". *Environmental Science & Technology* 47(15): 8894-8901. <http://dx.doi.org/10.1021/es4015844>
11. Shores, C.A. Klapmeyer, M.E., Quadros, M.E., Marr, L.C.* (2013) "Sources and transport of black carbon at the California-Mexico border". *Atmospheric Environment* 70: 490-499. <http://dx.doi.org/10.1016/j.atmosenv.2012.04.031>
12. Quadros, M.E. and Marr, L.* (2011) "Silver nanoparticles and total aerosols emitted by nanotechnology-related consumer spray products". *Environmental Science & Technology* 45(24): 10713-10719. <http://dx.doi.org/10.1021/es202770m>
13. Quadros, M.E. and Marr, L.* (2010) "Environmental and human health risks of aerosolized silver nanoparticles". *Journal of the Air & Waste Management Association* 60(7): 770-781. <http://dx.doi.org/10.3155/1047-3289.60.7.770>
14. Carmo Junior, G. N., Belli Filho, P., Lisboa, H.M., Schirmer, W.N.* , Quadros, M.E. (2010) "Odor assessment tools and odor emissions in industrial processes". *Acta Scientiarum. Technology* 32(3): 287-293. <http://dx.doi.org/10.4025/actascitechnol.v32i3.4778>
15. Quadros, M. E.*, H. M. Lisboa, Belli Filho, P. (2009) "Efficiency evaluation of gas treatment equipment in terms of odor removal using dynamic olfactometry." *Water Practice and Technology* 2(4): 1-6. <http://dx.doi.org/10.2166/wpt.2009.031>

Journal articles in Brazilian peer-reviewed journals published in Portuguese (8)

16. Schirmer, W.N.* and Quadros, M.E. (2010) "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* 5 (1): 25-42.
17. Quadros, M. E.* , H. M. Lisboa, et al. (2009) "Qualidade do ar interno em ambientes hospitalares (Indoor air quality in hospitals)". *Revista Tecnologia* 30(1): 32-52.
18. Quadros, M. E.* , H. M. Lisboa, et al. (2009) "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* 14(3): 431-437. <http://dx.doi.org/10.1590/S1413-41522009000300017>
19. Quadros, M. E.* , W. N. Schirmer, H. M. Lisboa (2008) "A olfatométrica como ferramenta na verificação da eficácia de neutralizador de odor industrial (Olfactometry as a tool for the efficiency verification of industrial odor neutralizer)". *Ambiencia* 4(3): 367-382.
20. Quadros, M. E.* and W. N. Schirmer (2008) "O uso da fotocatalise para a desinfecção e desodorização do ar interno (Photocatalysis and its uses for indoor air deodorization and disinfection)". *Ambiencia* 4(2): 309-325.
21. Schirmer, W. N.* , Quadros, M.E., H. M. Lisboa et al. (2008) "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* 12(2): 31-36.
22. Schirmer, W. N.* , Quadros, M.E., H. M. Lisboa et al. (2008) "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* 2(1): 57-72.
23. Schirmer, W. N.* , Quadros, M.E., H. M. Lisboa et al. (2007) "Characteristics, nature and sampling/analysis methods for odorous gases from industrial processes: A case study on petrochemical wastewater treatment ponds". *Revista de Ciências Ambientais* 1(1): 35-52.

Book chapters (4)

24. Kuiken, T. *; Quadros, M. E.; McGinnis, S.; Hull, M., (2015) Public's understanding, perceptions, and acceptance of nanotechnology through the lens of consumer products. In *Nanoengineering: Global Approaches to Health and Safety Issues*, 1 ed.; Dolez, P., Ed. Elsevier: Oxford; pp 151-171. ISBN 0444627456, 9780444627452
25. Hull, M. S. *; Quadros, M. E.; Born, R.; Provo, J.; Lohani, V. K.; Mahajan, R. L., (2014) Sustainable nanotechnology: A regional perspective. In *Nanotechnology Environmental Health and Safety: Risks, Regulation, and Management*, 2 ed.; Hull, M.; Bowman, D., Eds. Elsevier: Oxford, 2014; pp 395 - 426. <http://dx.doi.org/10.1016/B978-1-4557-3188-6.00016-5>
26. Quadros, M. E. and Lisboa, H.M.L. * (2010) "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). Self-published online textbook, in Portuguese. ISBN 978-85-913483-0-5
27. Quadros, M. E., D. Paludo, Sant'Anna, F.S.P. * (2003). "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). C. L. C. Frankenberg, M. T. Raya-Rodrigues and M. Cantelli. Porto Alegre, EDIPUCRS, in Portuguese.

Reports, Magazine Articles, other non-refereed publications (4)

28. Vance, M.E., Scott, K.C. 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*. July 7–8, 2015. Arlington, VA. Available at: http://www.nano.gov/sites/default/files/pub_resource/qeen_workshop_report_2016.pdf
29. Tolve, S.T., Willis, R., Rogers, K., Quadros, M.E., Vance, L.C. *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. 168p. 30 November 2011.
30. Quadros, M.E., Vance, L.C. *Exposure Assessment of Silver Nanoparticles in Select Children's Consumer Products* (RFQ-RT-10-00249). Final Project Report to the Environmental Protection Agency. 118p. 19 October 2011.
31. Quadros, M.E. (2011) *Assessing Realistic Emissions of Airborne Nanomaterials from Consumer Products*. ICTAS Connection Newsletter (10): 6-7. <http://www.ictas.vt.edu/communication/pdf/conn10.pdf>

PRESENTATIONS**(Vance group member, *presenter)****Invited Talks, Seminars, and Lectures (26)**

- P.1 "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.2 "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.3 "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.4 "Particulate matter emissions during HOMEChem". Invited talk, 2018 Chemistry of Indoor Environment Science Meeting. Boulder, CO. 26-Oct-2018.
- P.5 "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.6 "HOMEChem, a collaborative field study investigating the chemistry of indoor environments". Marina Vance and Delphine Farmer. HOMEChem Open house event to over 50 external visitors. Austin, TX. 22-Jun-2018.

- P.7 “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.8 “Investigating incidental nanoparticles emissions from everyday activities: A study on 3D printers”. Seminar, Virginia Tech Center for Sustainable Nanotechnology. Institute for Critical Technology and Applied Science. Virginia Tech. 19-Apr-2018.
- P.9 “Incidental nanoparticle emissions from everyday activities: A study on 3D printers”. 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.10 “Investigating emissions of ultrafine aerosols from consumer products: A study on 3D printers”. 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.11 “Experiências em qualidade do ar e nanotecnologia ambiental”. Seminar, Department of Environment Engineering, Universidade Federal de Santa Catarina, Florianópolis, Brazil. 10-Aug-2017.
- P.12 “Investigating emissions of ultrafine aerosols from everyday consumer products”. Seminar, Department of Chemistry, University of Denver. Denver, CO. 25-May-2017.
- P.13 “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.14 “Understanding people’s exposure to ultrafine aerosols”. Seminar, Environmental Engineering Program. University of Colorado Boulder. 27-Jan-2017.
- P.15 “Nanotechnology: Causing or solving environmental problems?” Departmental seminar, department of Mechanical Engineering. University of Colorado Boulder. 13-Oct-2016.
- P.16 “Exposure to Aerosol Emissions from Desktop 3D Printers”. Invited presentation, AIHA-RMS/ASSE Fall Technical Conference. Arvada, CO. 21-Sep-2016
- P.17 “Quantifying people’s exposure to nanoscale pollutants”. Seminar to the Mechanical Engineering Strategic Advisory Board. University of Colorado Boulder. 10-Sep-2016.

Before joining CU Boulder:

- P.18 “Quantifying people’s everyday exposure to ultrafine atmospheric pollutants”. Departmental seminar, Department of Mechanical Engineering. University of Colorado Boulder. 25-Feb-2016.
- P.19 “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.20 “Nanotechnology: The good, the bad, and the tiny”. TEDx Virginia Tech. 19-Nov-2015. Recording available at <https://youtu.be/Z8fWHZ9M2wA>
- P.21 “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.22 “Data visualization”. Invited seminar to the VTSuN Group, Virginia Tech. 6-Apr-2015
- P.23 “Potential exposure to nanomaterials from nanotechnology-enabled consumer products”. Invited seminar to the CDC NCEH/ATSDR Nanotechnology Interest Group. 5-Mar-2015
- P.24 “An inventory of nanotechnology in consumer products”. Invited lecture for Nanoscience and the Environment (NANO3124). Virginia Tech. 4-Mar-2015
- P.25 “Nanotechnology in consumer products”. Invited webinar for the National Nanotechnology Applications and Career Knowledge (NACK) network. 31-Oct-2014
Webinar recording available at: <http://goo.gl/Ft6xVT> Slides at: <http://goo.gl/HynbRZ>
- P.26 “Flujos de Emisiones, Carbón Negro, y Nanopartículas”. Invited Public Lecture, Universidad Tecnológica de Tijuana, Mexico. 3-Jun-2010

Conference Oral Presentations (23)

- P.27 Farmer, D.K.*; Vance, M.E., et al., "The perils of housecleaning and other tales from the mop" European Geosciences Union (EGU) General Assembly, Vienna, Austria. 2019
- P.28 Tiwari, A.*; Vance, M.E. "Particulate Emissions from 3D Printing" AIHA UMS Fall 2018 Professional Development Conference, Roseville, MN. 2018
- P.29 Toth, S.*; Hannigan, M.; Vance, M.E. Deceglie, M., Micheli, L., Muller, M. *Exploring the use of PM Sensors to Understand PV Soiling*. NREL 2018 International PV Soiling Workshop, Golden, CO. 2018
- P.30 Toth, S.*; Hannigan, M.; Vance, M.E. Deceglie, M., Micheli, L., Muller, M. *A preliminary exploration of the use of PM sensors to understand PV soiling*. American Solar Energy Society (ASES) 2018 Conference, Boulder, CO. 2018
- P.31 Vance, M.E.*; Farmer, D.K., Novoselac, A., Corsi, R., Hildebrandt Ruiz, L., Abbatt, J., DeCarlo, P.F., Stevens, P., Kahan, T.F., Goldstein, A.H., Nazaroff, W.W., Jimenez, J.L., Ziemann, P.J., Knight, R., Dorrestein, P.C., *An overview and early results from the HOMEChem Indoor Air Chemistry Field Campaign*. IndoorAir, Philadelphia, PA. 2018
- P.32 Vance, M.E.*; Linden, Z.; Beltran, I. *Nanoparticle-surface interactions: Implications for nanoscale dust deposition and resuspension*. 1st Pan-American Congress of Nanotechnology (Pannano). Guarujá, Brazil. 2017
- P.33 Vance, M.E.*; Linden, Z.; Pfothenauer, D.; Hannigan, M. *Investigations into the Composition of Aerosols Emitted by 3D Printing Process*. 36th Annual Conference of the American Association for Aerosol Research (AAAR), Raleigh, NC. 2017
- P.34 Vance, M.E.*; Pegues, V.; Leng, W.; Marr, L.C.; Van Montfrans, S. *Quantifying the exposure to aerosol emissions from desktop 3D printers*. Association of Environmental Engineering & Science Professors (AEESP) Research and Education Conference, Ann Arbor, MI. 2017
- P.35 Hochella Jr., M.F.*; Yang, Y.; Vance, M.E.; Tiwari, A.J. *Nanoparticles in road dust from impervious urban surfaces: Distribution, identification, and environmental implications in a first study of its type*. Geological Society of America Annual Meeting, Denver, CO. GSA Abstracts with Programs Vol. 48, No. 7. 2016
- Before joining CU Boulder:
- P.36 Vance, M.E.*; Yang, Y.; Tiwari, A.J.; Tou, F.; Hochella, M.F. *Identification of potentially aerosolized nanoparticles in road dust from Shanghai*. 251st ACS National Meeting, San Diego, CA. 2016
- P.37 Vance, M.E.*; Tulse, N. S.; Willis, R.; Rogers, K.; Thomas, T.A.; Marr, L.C. *Quantifying the release of silver from nanotechnology-based consumer products for children*. Quantifying Exposure to Engineered Nanomaterials (QEEN) from Manufactured Products Workshop, Arlington, VA. 2015
- P.38 Vance, M.E.*; Pegues, V.; Page, J.; Prussin, A.J.; Marr, L.C. *Aerosol emissions from desktop 3D printers*. Association of Environmental Engineering & Science Professors Research and Education Conference, New Haven, CT. 2015
- P.39 Vance, M.E.*; Hochella, M.F. *Nanotechnology in the real world: Redeveloping the nanotechnology-based consumer products inventory*. CEINT Annual Meeting, Durham, NC. 2015
- P.40 Quadros, M. E.; Kuiken, T.*; McGinnis, S. P.; Hull, M. S.; Hochella, M. F. *Keeping track of nanotechnology in the real world: Consumer Products Inventory 2.0*. 247th ACS National Meeting, Dallas, TX. 2014
- P.41 Quadros, M.E.*; Kuiken, T. McGinnis, S. *Reinventing the Inventory of Nanotechnology Consumer Products*. 2nd Sustainable Nanotechnology Organization Conference, Santa Barbara, CA. 2013
- P.42 Quadros, M. E.*; Marr, L.C. *Aerosol emissions from silver nanotechnology consumer products*. 30th Annual Conference of the American Association for Aerosol Research (AAAR), Orlando, FL. 2011
- P.43 Quadros, M. E.*; Marr, L.C. *Aerosol emissions from silver nanotechnology consumer products*. 3rd International Conference on the Environmental Implications of Nanotechnology, Durham, NC. 2011
- P.44 Quadros, M. E.*; Marr, L.C. *Emission of airborne nanoparticles from silver nanotechnology consumer products*. 2nd International Conference on the Environmental Implications of Nanotechnology, Los Angeles, CA. 2010

- P.45 Quadros, M.E., Belli Filho, P., Lisboa, H.M.* Efficiency evaluation of gas treatment equipment in terms of odor removal using dynamic olfactometry. 3rd IWA Odour and VOCs Conference: Measurement, Regulation and Control Techniques, Barcelona. 2008
- P.46 Quadros, M.E.*, Schirmer, W.N.*, Miranda G.R.* *Minicurso: Mudanças Climáticas Globais, Créditos de Carbono e Energias Renováveis* (short course in World Climate Change, Carbon Credits, and Renewable Energy Sources). 6ª Semana de Ensino, Pesquisa e Extensão - SEPEX, UFSC (2007)
- P.47 Quadros, M.E.*, Lisboa, H.M., Filho, P.B., Miranda, G.R., Schirmer, W.N. *Determinação da eficiência de lavador de gases para remoção de odores via avaliações físico-químicas e olfatométricas*. 24º Congresso Brasileiro de Engenharia Sanitária e Ambiental, Belo Horizonte, Brazil. 2007
- P.48 Quadros, M.E.*, Moura, T.F.F., Lisboa, H.M. *Análise de correlação entre o fluxo de odor e o fluxo de COV em uma instalação com processo de compostagem de biossólidos*. 24º Congresso Brasileiro de Engenharia Sanitária e Ambiental, Belo Horizonte, Brazil. 2007
- P.49 Quadros, M.E.*, Lisboa, H.M., Schirmer, W.N., Miranda, G.R. *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 (27)

- P.50 Katz, E.*, Lunderberg, D., Tian, Y., Goldstein, A., Vance, M., Farmer, D., DeCarlo, P. *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.51 Sankhyan, S.*, Patel, S., Vance, M.E., *Relationships between indoor activities and light absorbing aerosol emissions*. 2018 Sloan CIE Science Meeting, Boulder, CO. 2018
- P.52 Bakker-Arkema, J., Vance, M. *Building a Community through Science Writing and Social Media*. 2018 Sloan CIE Science Meeting, Boulder, CO. 2018
- P.53 Gingrich, J., Patel, S., Graham, E., Shafer, J., Corsi, R., Vance, M. *Evaluation of low-cost air quality monitors during the HOMEChem campaign*. 2018 Sloan CIE Science Meeting, Boulder, CO. 2018
- P.54 Sankhyan, S.*, Patel, S., Vance, M.E., *Relationships between indoor and outdoor black and brown carbon emissions during HOMEChem study*. Research Week Symposium, Boulder, CO. 2018
- P.55 Alamri, F.*, Vance, M. *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.56 Alamri, F.*, Vance, M. *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.57 Toth, S.*, Hannigan, M., Vance, M.E., 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.58 Sankhyan, S., Patel, S., Beltran, I., Vance, M.E.*. *Investigating Aerosol Emissions from Cooking Oils through a Controlled Chamber Experiment*. 10th International Aerosol Conference, St. Louis, MO. 2018
- P.59 Vance, M.E.*, Pegues, V., Van Montfrans, S., Tiwari, A.J., Marr, L.C. *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.60 Vance, M.E.*; Vikesland, P.J.; Michel, F.M.; Leng, W.; Hull, M.; Reynolds, W.; Murayama, M.; Marr, L.C.; Pruden, A.; Hochella, M.F. *NNCI: The Virginia Tech National Center for Earth and Environmental Nanotechnology Infrastructure, NCE²NI*. NSF Nanoscale Science and Engineering Grantees Conference, Arlington, VA. 2015
- P.61 Vance, M.E.*; Pegues, V.; Page, J.; Prussin, A.J.; Marr, L.C. *Incidental nanoparticle emissions from desktop 3D printers*. 3rd Gordon Research Conference in Environmental Nanotechnology, West Dover, VT. 2015
- P.62 Pourzahedi, L.*; Vance, M.E., Eckelman, M. J. *Environmental LCA of Nanosilver-enabled Products*. 3rd Gordon Research Conference in Environmental Nanotechnology, West Dover, VT. 2015

- P.63 Vance, M.E.*, Marr, L.C. *Potential exposure to engineered nanoparticles in domestic environments* . 1st Gordon Research Seminar in Environmental Nanotechnology, West Dover, VT. 2015
- P.64 Vance, M.E.*, Marr, L.C. *Quantifying human exposure to ultrafine aerosols emitted from consumer products in indoor environments* . ASCE Department Heads Conference, Blacksburg, VA. 2015
- P.65 Page, J.M.* , Marr, L.C., Prussin II, A.J., Vance, M.E. *Nanoparticle emissions from three-dimensional printers* . Annual Biomedical Research Conference for Minority Students, San Antonio, TX. 2014
- P.66 Tolve, N.* , Rogers, K., Willis, R., Quadros, M.E., Marr, L.C. *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.67 Quadros, M.E.*, Tolve, N., Willis, R., Rogers, K., Marr, L.C. *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.68 Quadros, M.E., Hall, S., Telionis, D.* *Frequency Response of Sensors for CO₂ Flux Measurements* . 9th International Carbon Dioxide Conference, Beijing, China. 2013
- P.69 Quadros, M. E.*, Marr, L.C. *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.70 Quadros, M. E.*, Marr, L.C. *Emission of airborne nanoparticles from silver nanotechnology consumer products* . 26th Annual GSA Research Symposium, Blacksburg, VA. 2010
- P.71 Quadros, M. E.*, Marr, L.C. *Emission of airborne nanoparticles from silver nanotechnology consumer products* . 1st ICTAS Research Day, Blacksburg, VA. 2010
- P.72 Quadros, M. E.*, Faria, C.T., Marr, L.C. *A thermophoretic sampler for collecting airborne nanoparticles* . 1st International Conference on the Environmental Implications of Nanotechnology, Washington, DC. 2009
- P.73 Quadros, M.E.*, Lisboa, H.M. *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.74 Quadros, M.E., Belli Filho, P.* , Schirmer, W.N., Lisboa, H.M. *Utilização da olfatométrica dinâmica na verificação da eficácia de neutralizador de odor industrial* . XXX Congreso Asociación Interamericana de Ingeniería Sanitaria y Ambiental, Montevideo, Uruguay. 2006
- P.75 Schirmer, W.N., Quadros, M.E., Belli Filho, P.* , Lisboa, H.M. *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.76 Quadros, M.E.*, Sant'Anna, F.S.P. *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

As Principal Investigator (Total: \$1.55M, Vance share: \$875K)

- 2018 – 2021 **Department of Energy - National Renewable Energy Laboratory (NREL).** Reducing Uncertainty of Fielded Photovoltaic Performance “PV Powerplant Soiling” \$234,607 (Vance share: 50%). PI: Vance. Co-PI: M. P. Hannigan (CU).
- 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.* \$1,251,611.00 (Vance share: 56%) PI: Vance. Co-PI: Delphine K. Farmer (Colorado State University). Collaborators: A. Novoselac, R. Corsi, L. Hildebrandt (UT Austin), P. Stevens (U. Indiana Bloomington), P. DeCarlo (Drexel), T. Kahan (Syracuse U.).
- 2016 – ongoing **Aleph Objects, Inc.** *Measurement of environmental emissions from 3D printing processes.* Continual funding (Vance share: 50%). PI: Vance. Co-PI: M. P. Hannigan (CU).

- 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. Funding period: 10 months 607 (Vance share: 50%). PI: Vance. Co-PI: M. P. Hannigan (CU).
- 2016 - 2016 **Alfred P. Sloan Foundation.** *Building a Science Community in the field of Chemistry of Indoor Environments.* Total to CU: \$50,000 (100% credit).
- 2016 - 2016 **CU Boulder Engineering Excellence Fund (EEF).** *Team-Based Learning for Engineering Education.* \$420 + \$420 matched by CU Boulder Engineering Plus Program (100% credit).

As Co-Principal Investigator or Senior Personnel (Total: \$2.7M, Vance share: \$391k)

- 2018 - 2018 **The Alfred P. Sloan Foundation.** *Workshop on the NanoChemistry of Indoor Environments (NanoCIE).* PI: Rein Ulijin (CUNY). Co-PIs: Vicki Grassian (UCSD), Kyle Doudrick (Notre Dame), Marina Vance (CU). \$30,746 (Vance share: travel support).
- Before joining CU Boulder:
- 2015 - 2020 **National Science Foundation.** The Virginia Tech National Center for Earth and Environmental Nanotechnology Infrastructure (NanoEarth). \$2,596,055.00 (Vance share: 15%). PI: Michael F. Hochella. Co-PIs: L. Marr, F. Michel, A. Pruden, P. Vikesland. My role: Senior Personnel. I assisted PI Hochella in writing this proposal and became the NanoEarth Deputy Director.
- 2010 - 2012 **Environmental Protection Agency.** *Exposure Assessment of Silver Nanoparticles in Select Children's Consumer Products.* \$69,653.00. PI: L. Marr. My role: I co-wrote this proposal with PI Marr and I was the sole PhD student who carried out this research project.

STUDENTS ADVISED AND *SUPERVISED

PhD students

- 2017 - present **Sarah Toth**, Environmental Engineering (co-advised with M. Hannigan).
- 2018 - present **Jonathan Gingrich***, PhD student at UT-Austin (I am leading a manuscript being written by Jonathan)
- 2017 - present **Julia Bakker-Arkema***, PhD student in the department of Chemistry, CU Boulder (I supervise Julia for 20% of her time in science communication efforts for IndoorChem).

MS students

- 2018 - present **Sumit Sankhyan**, Mechanical Engineering.
- 2017 - 2018 **Faisal Alamri**, Mechanical Engineering. "Chemical characterization of natural soiling on solar panel glass covers in an urban environment". MS Thesis, Nov, 2018.
- 2017 - 2018 **Zachary Linden**, Environmental Engineering. "Characterization of aerosol and VOC emissions from 3D printing processes in a controlled chamber environment". MS Report, Nov, 2018.

Before joining CU Boulder:

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

Undergraduate students

- 2018 - 2019 **Julia Witteman**, Environmental Engineering student, CU Boulder.
- 2019 - present **Devin Lindsey**, Earn-Learn Apprentice (IndoorChem Project), 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***, Summer 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.

Committee member

- 2017 - present **David Pfothenouer, PhD Student**, Mechanical Engineering, CU Boulder. Adviser: M. Hannigan.
- 2017 - present **Aaron Lamplugh, PhD Student**, Mechanical Engineering, CU Boulder. Adviser: L. Montoya.

- 2016 – present **Samantha McNeal, PhD Student**, Environmental Health Sciences, Center for Environmental Nanoscience and Risk (CENR), Arnold School of Public Health University of South Carolina. Adviser: J. Lead.
- 2017 – 2018 **Ashley Collier, PhD Student**, Mechanical Engineering, CU Boulder. “Enabling Community-based Air Quality Science through the Development of Sensor Systems, Resources, and Partnerships”. Adviser: M. Hannigan.
- 2016 – 2018 **Preateek Man Shrestha, PhD Student**, Mechanical Engineering, CU Boulder. “Impacts of Energy-Efficiency Retrofits on Ventilation and Indoor Air Quality in Low-INcome Households”. Adviser: S. Miller.
- 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”. Adviser: 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”. Adviser: M. Hannigan.
- 2016 – 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”. Adviser: M. Hannigan.
- Before joining CU Boulder:
- 2007 **Magnun M. Vieira, B.S.**, Environmental Engineering, UFSC. “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. “Tetrahydrothiophene removal from natural gas using activated carbon”.
- 2006 **Cristian Marquezi, B.S.** in Environmental Engineering, UFSC. “Using the HYSPLIT model to identify the origin of acid rain on the coast of Santa Catarina (Brazil)”.

TEACHING EXPERIENCE

Graduate:

MCEN 5228-019: Nanotechnology for Environmental Sustainability (3 credits). Mechanical Engineering, University of Colorado Boulder. Graduate technical elective course.
Taught: Spring 2017 (12 students), Spring 2018 (9 students).

Undergraduate:

MCEN 3047: Data Analysis and Experimental Methods (4 credits). Mechanical Engineering, University of Colorado Boulder. Responsible for two lab sections.
Taught: Fall 2018 (75 students).

MCEN-4045: Mechanical Engineering Design Project 1 (3 credits). Department of Mechanical Engineering, University of Colorado Boulder. Director to 3 senior design teams.
Taught: Fall 2016 (23 students), Fall 2017 (20 students), Fall 2018 (20 students).

MCEN-4085: Mechanical Engineering Design Project 2 (3-4 credits). Mechanical Engineering, University of Colorado Boulder. Director to 3 senior design teams.
Taught: Spring 2017 (23 students), Spring 2018 (20 students), Spring 2019 (20 students).

Before joining CU Boulder:

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

ENS-3126: Atmospheric Pollution Control (3 credits). Environmental Engineering, Universidade Federal de Santa Catarina, Brazil. 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. Taught: Spring 2007, Fall 2007.
40 students.

Course Development

Spring 2017

MCEN 5228-019 Nanotechnology for Environmental Sustainability, Graduate Course.

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.

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

Manuscript and book chapter reviewer

(2013 – present)

- Environmental Science & Technology
- Atmospheric Environment
- Aerosol Science & Technology
- Environmental Science: Nano
- Environmental Pollution
- Building and Environment
- International Journal of Nanomedicine
- Atmosphere
- Critical Reviews in Environ. Sci. and Technology
- Nanolmpact
- 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

- 2016 EPA STAR Graduate Fellowship.
2016 NSF Environmental Engineering (CBET) unsolicited proposals.

Leadership in the profession

- 2019 **37th American Association for Aerosol Research (AAAR)**. Special Symposium co-organizer: “The air we breathe: indoor aerosol sources and chemistry.”

- 2018 **2018 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.
- 2018 **10th International Aerosols Conference (IAC).** Platform session chair and poster judge: “Indoor Aerosols”. St Louis, MO
- 2018 - 2020 **American Association for Aerosol Research (AAAR).** Elected Vice-Chair of the “Indoor Aerosols and Aerosol Exposure” working group.
- 2018 - 2020 **International Society for Indoor Air Quality and Climate (ISIAQ).** Elected Vice-chair of the Indoor Aerosols Scientific and Technical Committee.
- 2018 - 2019 **Environmental Science: Processes & Impacts.** Guest Editor for a special issue in Indoor Chemistry.
- 2018 **IndoorAir 2018.** International scientific advisory committee; podium session chair.
- 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.
- 2017 **1st Pan-American Congress of Nanotechnology,** poster judge, Guarujá, Brazil.
- 2017 **36th American Association for Aerosol Research (AAAR) Annual Conference,** platform session chair: Indoor Aerosols, poster judge, Raleigh, NC.
- 2016 **35th American Association for Aerosol Research (AAAR) Annual Conference,** platform session chair: Indoor Aerosols, Portland, OR.
- Before joining CU Boulder:
- 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.
- 2011 **30th American Association for Aerosol Research (AAAR) Annual Conference,** poster session judge and student plenary assistant, Orlando, FL.
- 2010 **29th American Association for Aerosol Research (AAAR) Annual Conference,** student plenary assistant, Portland, OR.

Service at University of Colorado Boulder

- 2017 – 2019 **Department of Mechanical Engineering,** graduate education committee, member.
- 2016 – 2017 **College of Engineering,** inclusive excellence committee, member.
- 2016 – 2017 **Department of Mechanical Engineering,** faculty search committee, member.
- 2016 – 2017 **Environmental Engineering Program,** graduate education committee, member.
- 2016 – 2017 **Department of Mechanical Engineering,** external relations committee, member.

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, student representative.
- 2012 **Graduate Student Assembly (GSA) Research Symposium,** committee member, abstract reviewer, poster judge.
- 2012 **CEE-EWR Open House** student host.
- 2012 **2nd Virginia Tech Interdisciplinary Research Symposium,** co-organizer, poster session chair.
- 2012 **2nd Interdisciplinary Research Day,** co-organizer, round-table moderator.
- 2011 **Graduate Student Assembly (GSA) Research Symposium,** abstract reviewer.
- 2011 **CEE-EWR Open House** student volunteer.
- 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 – 2010 **Brazilian Association at Virginia Tech**, president.
 2008 – 2013 **Brazilian Association at Virginia Tech**, board member.

OUTREACH & ENGAGEMENT

Media coverage

Interviewed for over a dozen news articles that can be found here: <http://www.colorado.edu/lab/vance/news-archive>

Blog writing

- 2014 - 2016 **Environmental Science: Nano Blog**, Royal Society of Chemistry, writer. Available at: <http://blogs.rsc.org/en/author/vancem-ext/>
 2013 – 2016 **VTSuN Blog**, writer and editor, contributed in over 30 blog posts. Available at: <https://blogs.lt.vt.edu/sustainablenano>

Outreach Events

- 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**, speaker: The good, the bad, and the tiny. Blacksburg, VA.
 2015 **Virginia Science Festival**, Sustainable Nanotechnology outreach booth for VTSuN.
 2015 **EPA Ntl Sustainable Design Competition**, Outreach Booth for SNO and VTSuN, Washington, DC.
 2015 **VT Nanocamp**. 3-day environ. nanoscience experiment for 26 high school students. Blacksburg, VA.
 2014 **Virginia Science Festival**, Sustainable Nanotechnology outreach booth for VTSuN. Blacksburg, VA.
 2014 **TEDx Virginia Tech**, Sustainable Nanotechnology outreach booth for VTSuN. Blacksburg, VA.
 2014 **Kid's Tech University**, ages 9 – 12, Virginia Tech. Blacksburg, VA.
 2013 **TEDx Virginia Tech**, Sustainable Nanotechnology outreach booth for VTSuN. 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 - present Sustainable Nanotechnology Organization (SNO)
 2012 - present American Chemical Society (ACS)
 2010 - present American Association for Aerosol Research (AAAR)
 2010 - present Iota Delta Rho (IDR), Interdisciplinary Research Honor Society (founding member)
 2012 - present Academic Excellence and Leadership (AEL) Honor Society of Graduate Students

LANGUAGES

Portuguese (native), English (fluent), Spanish (intermediate, rusty), French (intermediate, rusty)