José Guillermo Cedeño Laurent, MSc, ScD

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EDUCATION

2014	**Doctor of Science in Environmental Health** HARVARD SCHOOL OF PUBLIC HEALTH - Boston, USA *Dissertation*: "Influence of Residential Indoor Environmental Quality on Students' Health". Committee members: John Spengler, Francesca Dominici, Christoph Reinhart
2010	**Master of Science (Energy Engineering)** RWTH AACHEN - Aachen, Germany *Thesis*: "Simulation of a Membrane-Amine Wash Hybrid Carbon Dioxide Separation Process"
2006	**Bachelor of Science in Mechanical Electrical Engineering** INSTITUTE OF TECHNOLOGY OF MONTERREY (ITESM) - Monterrey, Mexico

RESEARCH & PROFESSIONAL EXPERIENCE

07/2022 - present	**Assistant Professor**, Department of Environmental and Occupational Health and Justice, Rutgers School of Public Health, Piscataway, NJ USA
07/2017 - 06/2022	**Associate Director**, Healthy Buildings Program, Department of Environmental Health, T.H. Chan School of Public Health, Boston, USA
09/2016 - present	**Research Associate**, Department of Environmental Health, T.H. Chan School of Public Health, Boston, USA
10/2014 - 08/2016	**Postdoctoral Research Fellow**, Harvard Center for Health and the Global Environment, Boston, USA
10/2013 - 11/2013	**Research Intern**, International Center for Indoor Environment and Energy, Copenhagen, Denmark *Project*: Development of an algorithm for the continuous estimation of air exchange rates based on carbon dioxide and sound pressure level data.
04/2009 - 08/2010	**Research Graduate Assistant**, Jülich Research Center, Jülich, Germany (04/2009 - 08/2010) *Project*: Estimate the effects of contaminants in the flue gas emitted from IGCC and Oxyfuel power plants in a carbon dioxide sequestration project.
11/2006- 06/2007	**Research Intern**, National Institute of Nuclear Research, Toluca, México *Project*: Assist in the experimental design of structured package design for a carbon dioxide absorption column

RESEARCH FUNDING

Current

04/2019 - 12/2023	Magnolia Quality Development Corporation (MQDC) Thailand ($600,000; 30%) Principal Investigator, *Employee Health and Wellbeing: Intervention-based study moving into high-performance headquarters and residential buildings.*

Completed

08/2019 - 06/2022 REI Foundation ($300,000; 20%)
Principal Investigator, Use of ecologic momentary assessment to study dose-response relationships between nature and health.

06/2020 - 02/2021 Aviation for America ($2,000,000)
Co-Investigator, Aviation Public Health Initiative: Studying current aircraft, airline, and airport practices and their impact on public health during the COVID-19 pandemic.

05/2017 - 03/2020 United Technologies Research Fund
Research Associate, Global CogFx Study

01/2018 - 12/2019 Anthropocene Institute Fellowship ($50,000)
Principal Investigator, Long-term indoor air quality monitoring in Houston homes affected by Hurricane Harvey.

01/2017 - 12/2017 The Harvard University Climate Change Solutions Fund ($70,000)
Co-Principal Investigator, *New Benchmarking and Performance Simulation Methods for Buildings Based on Energy Use, Comfort and Health*

01/2015 - 12/2016 The Harvard University Climate Change Solutions Fund ($80,000)
Principal Investigator*, Sustainable Adaptation Measures to Extreme Heat Events*

09/2016 - 12/2016 Harvard National Institute of Environmental Health Sciences (NIEHS) Facility Access Fund
Principal investigator*, Heat Waves and Health*

09/2015 - 12/2015 Harvard National Institute of Environmental Health Sciences (NIEHS) Facility Access Fund ($8,000)
Co-Principal Investigator, *EEG measurement of office workers in green buildings*

GRANTS
In preparation

DOE BTO/EERE (Spring 2023)
Indoor environmental quality benefits of an automated framework to dimension and design central air retrofits in existing affordable housing
Role: Principal Investigator

NIH/NIA: R01 (application due February 2023)
Investigating the influence of the built environment on healthy sleep and its role as a protective and resilience factor among vulnerable populations
Role: Principal Investigator

The Wellcome Trust (Fall 2022)
Heat adaptation: evaluating interventions to help manage the health effects of heat
Role: Co-Principal Investigator

Not funded

CDC Foundation Emergency Response Funds ($400,000)
Rapid Modeling and Analysis of Healthy Building Strategies to Minimize Transmission of COVID-19 in Senior Living
Role: Principal Investigator

HSPH COVID-19 Special Acceleration Fund ($150,000)
Evidence-Based Plans for Reopening Schools
Role: Co-Principal Investigator

NIH/NIEHS: R01
Environmental Management of Dormitories and Student Health: The role of dormitories in exposure to flame retardant chemicals and non- chemical stressors during four years of campus life
Role: Co-Principal Investigator

NOAA/NSF: Belmont Forum Climate, Health, and Environment ($1,800,000)
Innovation of a 3-D Urbanization Index to Visualize the Global Urban Heat Island Effects on Human Health; Improving the understanding of mental health and productivity impacts of heat through smartphone-based exposure assessment
Role: Co-Principal Investigator

PUBLICATIONS

Articles in peer-reviewed journals

Zhu, S., Lin, T., **Cedeño-Laurent, J.G**., Spengler, J.D. and Srebric, J., 2022. Tradeoffs between ventilation, air mixing, and passenger density for the airborne transmission risk in airport transportation vehicles. Building and Environment, p.109186.

Bjerregaard, A.A., Petersen, M.W., Gormsen, L.K., Skovbjerg, S., Jørgensen, N.R., Linneberg, A., **Cedeño-Laurent, J.G**., Jørgensen, T. and Dantoft, T.M., 2021. Insulin Resistance Is Associated with Multiple Chemical Sensitivity in a Danish Population-Based Study—DanFunD. International Journal of Environmental Research and Public Health, 18(23), p.12654.

Blazquez, C., **Cedeño-Laurent, J.G**. and Nazif-Munoz, J.I., 2021. Differential impacts of ridesharing on alcohol-related crashes by socioeconomic municipalities: rate of technology adoption matters. BMC public health, 21(1), pp.1-12.

Jones, E.R., **Cedeño-Laurent, J.G.**, Young, A.S., Coull, B.A., Spengler, J.D. and Allen, J.G., 2021. Indoor humidity levels and associations with reported symptoms in office buildings. Indoor air.

Salimifard, P., Buonocore, J.J., Konschnik, K., Azimi, P., VanRy, M., **Cedeño-Laurent, J.G.**, Hernández, D. and Allen, J.G., 2022. Climate policy impacts on building energy use, emissions, and health: New York City local law 97. Energy, 238, p.121879.

Cedeño-Laurent, J.G., MacNaughton, P., Jones, E., Young, A.S., Bliss, M., Flanigan, S., Vallarino, J., Chen, L.J., Cao, X. and Allen, J.G., 2021. Associations between acute exposures to PM2. 5 and carbon dioxide indoors and cognitive function in office workers: a multicountry longitudinal prospective observational study. Environmental Research Letters, 16(9), p.094047**.**

Dodson, R.E., Setzer, R.W., Spengler, J.D., Brody, J.G., Rudel, R.A. and **Cedeño-Laurent, J.G**., 2021. Influence of living in the same home on biomonitored levels of consumer product chemicals. Journal of Exposure Science & Environmental Epidemiology, pp.1-7.

Young, A.S., Herkert, N., Stapleton, H.M., **Cedeño-Laurent, J.G**., Jones, E.R., MacNaughton, P., Coull, B.A., James-Todd, T., Hauser, R., Luna, M.L. and Chung, Y.S., 2021. Chemical contaminant exposures assessed using silicone wristbands among occupants in office buildings in the USA, UK, China, and India. Environment International, 156, p.106727.

Jones, E.R., **Cedeño-Laurent, J.G.**, Young, A.S., MacNaughton, P., Coull, B.A., Spengler, J.D. and Allen, J.G., 2021. The effects of ventilation and filtration on indoor PM2. 5 in office buildings in four countries. Building and Environment, p.107975.

Symanski E, Han HA, Han I, McDaniel M, Whitworth KW, McCurdy S, Perkison WB, Rammah A, Lewis PG, Delclos GL, Craft E., Bondy, M., **Cedeño-Laurent J.G.,** James, D., Responding to natural and industrial disasters: partnerships and lessons learned. Disaster medicine and public health preparedness. 2021 Mar 16:1-4.

Azimi P, Keshavarz Z, **Cedeño-Laurent J.G.**, Stephens B, Allen JG. Mechanistic transmission modeling of COVID-19 on the Diamond Princess cruise ship demonstrates the importance of aerosol transmission. Proceedings of the National Academy of Sciences. 2021 Feb 23;118(8).

Chu MT, Gillooly SE, Levy JI, Vallarino J, Reyna LN, **Cedeño-Laurent J.G.**, Coull BA, Adamkiewicz G. Real-time indoor PM2. 5 monitoring in an urban cohort: Implications for exposure disparities and source control. Environmental research. 2021 Feb 1;193:110561.

Tomasso LP, Yin J, **Cedeño-Laurent J.G.**, Chen JT, Catalano PJ, Spengler JD. The Relationship between Nature Deprivation and Individual Wellbeing across Urban Gradients under COVID-19. International journal of environmental research and public health. 2021 Jan;18(4):1511.

Williams AA, Baniassadi A, Izaga Gonzalez P, Buonocore JJ **Cedeño-Laurent J.G.**, Samuelson HW. Health and Climate Benefits of Heat Adaptation Strategies in Single-Family Residential Buildings. Front. Sustain. Cities. 2020 Oct 27;2:561828.

Nazif-Munoz JI**, Cedeño-Laurent, J.G.**, Browning M, Spengler J, Olvera Álvarez HA. Green, brown, and gray: associations between different measurements of land patterns and depression among nursing students in El Paso, Texas. International journal of environmental research and public health. 2020 Jan;17(21):8146.

Chu MT, Gillooly SE, Levy JI, Vallarino J, Reyna LN, **Cedeño-Laurent J.G.**, Coull BA, Adamkiewicz G. Real-time Indoor PM2. 5 Monitoring in an Urban Cohort: Implications for Exposure Disparities and Source Control. Environmental research. 2020 Dec 2:110561.

Brod, M., **Cedeño Laurent, J.G**., Kane, J., Colton, M.D., Gabel, C. and Adamkiewicz, G., 2020. Greener and Leaner: Lower Energy and Water Consumption, and Reduced Work Orders, in Newly Constructed Boston Public Housing. Atmosphere, Jan 2020.11(4), p.329.

Azimi P, Keshavarz Z, **Cedeño-Laurent, J.G**, Allen JG. Estimating the Nationwide Transmission Risk of Measles in US Schools and Impacts of Vaccination and Supplemental Infection Control Strategies 2. Research Square. March. 2020 Mar 10;10.

Cedeño-Laurent, J.G, Allen JG, McNeely E, Dominici F, Spengler JD. Influence of the residential environment on undergraduate students' health. Journal of Exposure Science & Environmental Epidemiology. 2019 Dec 3:1-8.

Guillén EE, Samuelson HW, **Cedeño-Laurent, J.G**. Comparing Energy and Comfort Metrics for Building Benchmarking. Energy and Buildings. 2019 Oct 18:109539.

Williams, A.A., Spengler, J.D., Catalano, P., Allen, J.G. and **Cedeño-Laurent, J.G**., 2019. Building Vulnerability in a Changing Climate: Indoor Temperature Exposures and Health Outcomes in Older Adults Living in Public Housing during an Extreme Heat Event in Cambridge, MA. International journal of environmental research and public health, 16(13), p.2373.

Cao, X., MacNaughton, P., Cadet, L. R., **Cedeño-Laurent, J. G**., Flanigan, S., Vallarino, J., ... & Allen, J. G. (2019). Heart rate variability and performance of commercial airline pilots during flight simulations. International Journal of Environmental Research and Public Health, 16(2), 237.

Alvarez, H.A.O., Provencio-Vasquez, E., Slavich, G.M., **Cedeño-Laurent, J.G**., Browning, M., McKee-Lopez, G., Robbins, L. and Spengler, J.D., 2019. Stress and Health in Nursing Students: The Nurse Engagement and Wellness Study. Nursing Research.

Allen, J.G., MacNaughton, P., **Cedeño-Laurent, J.G**., Cao, X., Flanigan, S., Vallarino, J., Rueda, F., Donnelly-McLay, D. and Spengler, J.D., 2018. Airplane pilot flight performance on 21 maneuvers in a flight simulator under varying carbon dioxide concentrations. Journal of Exposure Science & Environmental Epidemiology, p.1.

Cedeño-Laurent, J. G., Williams, A., Oulhote, Y., Zanobetti, A., Allen, J. G., & Spengler, J. D. (2018). Reduced cognitive function during a heat wave among residents of non-air-conditioned buildings: An observational study of young adults in the summer of 2016. PLoS Medicine, 15(7), e1002605.

Cedeño-Laurent, J.G., A. Williams, P. MacNaughton, X. Cao, E. Eitland, J. Spengler, and J. Allen. "Building Evidence for Health: Green Buildings, Current Science, and Future Challenges." Annual Review of Public Health 39 (2018): 291-308.

MacNaughton P, Cao X, Buonocore J, **Cedeño-Laurent J.G**., Spengler J, Bernstein A, Allen J. Energy savings, emission reductions, and health co-benefits of the green building movement. Journal of Exposure Science & Environmental Epidemiology. 2018 Jan 30:1.

Cao, X., MacNaughton, P., **Cedeño-Laurent, J.G**., and Allen, J.G., 2017. Radon-induced lung cancer deaths may be overestimated due to failure to account for confounding by exposure to diesel engine exhaust in BEIR VI miner studies. PLoS ONE, 12 (9), e0184298.

Cedeño-Laurent, J.G., Samuelson, H.W. and Chen, Y., 2017, December. The impact of window opening and other occupant behavior on simulated energy performance in residence halls. In Building Simulation (Vol. 10, No. 6, 963-976). Tsinghua University Press.

Dodson, R.E., Rodgers, K.M., Carey, G., **Cedeño-Laurent, J.G**., Covaci, A., Poma, G., Malarvannan, G., Spengler, J.D., Rudel, R.A. and Allen, J.G., 2017. Flame retardant chemicals in college dormitories: flammability standards influence dust concentrations. Environmental Science & Technology, 51(9), 4860-4869.

MacNaughton, P., Satish, U., **Cedeño-Laurent, J.G**., Flanigan, S., Vallarino, J., Coull, B., Spengler, J.D. and Allen, J.G., 2017. The impact of working in a green certified building on cognitive function and health. Building and Environment, 114, 178-186.

Colton, M. D., **Cedeño-Laurent, J.G**., MacNaughton, P., Kane, J., Bennett-Fripp, M., Spengler, J., & Adamkiewicz, G. (2015). Health benefits of green public housing: Associations with asthma morbidity and building-related symptoms. American Journal of Public Health, 105(12), 2482-2489.

Allen, J. G., MacNaughton, P., **Cedeño-Laurent, J.G.,** Flanigan, S. S., Eitland, E. S., & Spengler, J. D. (2015). Green Buildings and Health. Current Environmental Health Reports, 2(3), 250-258.

Wu, C, McNeely, E., **Cedeño-Laurent, J.G**, Pan, W.C., Adamkiewicz, G., Dominici, F., Lung, S.C.C., Su, H., and Spengler, J.D. (2014). Linking Student Performance in Massachusetts Elementary Schools with the "Greenness" of School Surroundings Using Remote Sensing. PLoS ONE 9, no. 10 (2014): e108548.

Huang, Jianxiang, **Cedeño-Laurent, J.G**, and John D. Spengler. (2014). CityComfort+: A Simulation-Based Method for Predicting Mean Radiant Temperature in Dense Urban Areas. Building and Environment 80, 84-95.

Working papers

Eitland, E., **Cedeño-Laurent, J.G.**, Vallarino, J., Jia, C., Filine, E., MacNaughton, P., Spengler, J.D., Allen, J.G., Crossover Study of Smart Home Portable Air Purification on Average and Peak PM2.5 Concentrations in Small Urban Residences in Boston, MA (*Submitted to Environmental Science and Technology*)

Cedeño-Laurent, J.G., Cluett, R., Colton, M., Adamkiewicz, G., Thermal Comfort in Green Versus Conventional Multifamily Low-Income Public Housing. (*To be submitted to Building and Environment*)

Book chapters

Cedeño-Laurent, J.G., Allen, J.G., Spengler, J.D. Built Environment and Sleep, Book Chapter, Sleep Health and Society-from aetiology to public health Oxford University Press, 2018

Cedeño-Laurent J.G. The Impact of Heat Waves on Cognitive Function Among Young Adults. InWorld Scientific Encyclopedia of Climate Change: Case Studies of Climate Risk, Action, and Opportunity Volume 3 2021 (pp. 165-170).

PRESENTATIONS

Selected conference presentations

Cedeño-Laurent, J.G, " Harvard CogFx Study:Global Lessons from Healthy Buildings", Greenbuild 2020, Virtual, November 10, 2020.

Cedeño-Laurent, J.G, " AppLab platform: A researcher's tool to make smartphone-based data collection simple, safe and cost effective", APHA 2019, Philadelphia, USA, November 2-6 2019.

Cedeño-Laurent, J.G, "An investigation into buildings and air quality", Keynote Speaker, Greenbuild Mexico 2019, Mexico City, Mexico. June 20, 2019.

Cedeño-Laurent, J.G, " Reduced Cognitive Function during a Heat Wave among Young Adults in Non-Air Conditioned Buildings", ISES-ISEE 2018, Ottawa, Canada, August 26-29 2018.

Cedeño-Laurent, J.G., A. Williams, J. D. Spengler**.** "Impact of Heat Waves on Cognitive Function Among Young Adults". American Meteorological Society Meeting, Austin, Tx, January, 2018

Cedeño-Laurent, J.G., A. Williams, J. D. Spengler**.** "Air Conditioning Usage Patterns Among Affordable Housing Senior Residents During Extreme Heat Events". American Meteorological Society Meeting, Seattle, WA January 24, 2017

Cedeño-Laurent, J.G., P. MacNaughton, R. Sanchez-Pina, J. Vallarino, J. Spengler Open-source tool for the automated analysis of air exchange rates. Indoor Air, Ghent, Belgium 2016

A. Williams, A. K. Hard, S. Flanigan, A. Hem, J. D. Spengler, and **Cedeño-Laurent, J.G.** Adaptation Measures to Extreme Heat Events and their Effects on Sleep Quality and Health Among Senior Residents of Affordable Housing. American Meteorological Society Meeting, New Orleans, January 12, 2016

Cedeño-Laurent, J.G., C.D. Wu, E. McNeely**,** Adamkiewicz, G., S.C. Lung, F. Dominici, J. Spengler. Spatial relation between greenness and student performance in five cities of Massachusetts. *2013 Environment and health*, Basel, Switzerland, August 23th 2013

Invited presentations

Cedeño-Laurent, J.G. Modeling COVID-19 transmission in indoor spaces: from schools to airplanes. *12th World Air Forum,.* Seoul, Korea, September 09, 2021.

Cedeño-Laurent, J.G. Scalable research through low-cost sensor and Research Apps. *Exposure Assessment Class, Boston University School of Public Health.* Boston, MA, September 18, 2019.

Cedeño-Laurent, J.G. Use of smartphone apps in exposure assessment studies. *Big Data Center for Environment and Health, Aarhus University.* Sondenborg, Denmark, September 1, 2019.

Cedeño-Laurent, J.G. Harvard Sensors for Health. *Harvard Graduate School of Design Executive Education Course on Healthy Buildings.* Cambridge, MA, March 18, 2019.

Cedeño-Laurent, J.G., "Building to learn, learning to build: how sensors can shape our cities", LASS 2018 Users and Developers Conference, July 2018, Taipei, Taiwan.

Cedeño-Laurent, J.G., "Sensors and Health: new opportunities for improving exposure science", Disaster Risk Reduction with Systems Approach for Slow-Onset Climate Disasters, July 2017, Taipei, Taiwan.

Cedeño-Laurent, J.G., E.Eitland, P. MacNaughton, A. Williams, "For Health: How buildings impact the way we think and feel", Med|ED Facilities, 2017, Boston, MA

Cedeño-Laurent, J.G., "How Green Building Make Your Clients Smarter", ABX 2016, Boston, MA.

Cedeño-Laurent, J.G. Health and Sustainability in Buildings. *National System of Technology Institutes Annual Meeting.* Chiapas, Mexico; April 25, 2013.

TEACHING EXPERIENCE

Spring 2016 –2022	Co-instructor, Impacts of Buildings on Sustainability, Productivity and Health, Harvard T.H. Chan School of Public Health
Spring 2017	Teaching Assistant, Climate Solutions Living Lab, Harvard Law School
Spring 2015	Instructor, Sustainable Buildings, Harvard Extension School
09/2014 - 06/2015	Instructor, Applied Leadership in Sustainability and Renewable Energies

Fall 2014	Teaching Assistant, Indoor Environmental Quality and Health, Harvard School of Public Health
Spring 2014	Teaching Assistant, Analytical Methods and Exposure Assessment, Harvard School of Public Health
Summer 2013	Lead Teaching Assistant, Human Health and Global Environmental Change, HarvardX

MENTORING EXPERIENCE

08/2019 – Present	Pablo Taddei, PhD pre-candidate, HSPH (co-advisor)
08/2019 – Present	Linda Tommaso, PhD pre-candidate, HSPH (co-advisor)
08/2019 – 05/2020	Dijuan Liang, Master Student, HSPH (advisor)
03/2019 – 08/2019	Sarah Grisot, summer intern, INSA Lyon, France
08/2018 – 05/2019	Yue Li, Master Student, HSPH (advisor)
03/2018 – 08/2018	Adil Choukri, summer intern, INSA Lyon, France
06/2017 - 11/2020	Roberto Ramos, PhD Candidate, Autonomous University of Sinaloa, Mexico
03/2016 – 08/2016	Maella Gonzalez, summer intern, University of Yucatan, Mexico
06/2015 - 09/2019	Augusta Williams, ScD, HSPH (co-advisor)

SELECTED MEDIA COVERAGE

COVID-19 (Boston Globe), Thermal Health (Washington Post, The Guardian, Reuters, CNN, NPR), Disaster response (CBSNews)

PROFESSIONAL EXPERIENCE

06/2006 - 10/2006	**Project Engineer**, Summer Internship, Electrical motors department in Bosch México, Factory Team intern. ROBERT BOSCH MEXICO Toluca, México
03/2005 - 08/2005	**Intern**, MERCEDES-BENZ, Processes and application planning Bodywork Engineering. Rastatt, Germany

REVIEWING ACTIVITIES

Reviewer	Journal of Exposure Science and Environmental Epidemiology, Plos ONE, Building and Environment, Environmental Research, Energy, International Journal of Biometeorology, Climatic Change, Atmosphere
Grant Reviewer	Taiwanese National Academy of Sciences

PROFESSIONAL AFFILIATIONS

2014 - Present	International society of Exposure Science
2014 - Present	International Society of Indoor Air Quality and Climate
2013 - Present	International Society for Children's Health and the Environment

HONORS AND AWARDS

2013	Recipient of the Sustainability Awards from the Harvard Office for Sustainability
2012	Recipient of the Sustainability Awards from the Harvard Office for Sustainability

2010 - 2014	Harvard- Mexican National Council on Science and Technology (CONACYT) Fellowship
2007 - 2009	Mexican National Council on Science and Technology (CONACYT) and German Academic Exchange Service (DAAD) Fellowship, Full tuition funding
2006	Recipient of the acknowledgement "Engineer with outstanding performance" (90th percentile) from the National Center of Evaluation on Graduate Education, México

PATENTS

Cedeño-Laurent, J.G., J.D. Spengler, Lockley, S., SYSTEMS AND METHODS FOR DETERMINING AND/OR CONTROLLING SLEEP QUALITY, Patent Assignment, HU Case No.: HU 5506 Appln. No.: 62/563,923

ADDITIONAL SKILLS

Computational skills

- Extensive knowledge of R statistical software
- Comprehensive knowledge of SAS, Fortran, MatLab, EnergyPlus, Contam, Rhinoceros, DIVA for Rhino, Twilio, Qualtrics, AWS

Language skills

- Fluent in English and German
- Spanish native speaker