Christopher Tessum

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Professional Appointments

Assistant Professor—University of Illinois at Urbana-Champaign — 2020–present
Department of Civil and Environmental Engineering

Research Scientist—University of Washington — 2016–2019
Department of Civil and Environmental Engineering

Postdoctoral Associate—University of Minnesota — 2015–2016
Department of Bioproducts and Biosystems Engineering

Education

Ph.D., Civil, Environmental, and Geo- Engineering (public health minor)—University of Minnesota — 2009–2014

B.M.E., Mechanical Engineering (*cum laude*)—University of Minnesota — 2002–2006

Selected Peer-Reviewed Publications (*=corresponding author)

19. Wu, R., C.W. Tessum, Y. Zhang, C. Hong, Y. Zheng, X. Qin, S. Liu, and Q. Zhang (2021) Reduced-complexity air quality intervention modeling over China: the development of InMAPv1.6.1-China and a comparison with CMAQv5. 2. *Geosci. Model Dev*. **14**:12 7621–7638.

18. Balasubramanian, S., N.D. Hunt, N.G. Domingo, M. Gittlin, K. Colgan, J.D. Marshall, A.L. Robinson, I.M. Azevedo, S. Thakrar, M.A. Clark, C.W. Tessum, P.J. Adams, S.N. Pandis, and J.D. Hill (2021) The food we eat, the air we breathe: A review of the fine particulate matter-induced air quality health impacts of the global food system. *Environ. Res. Lett*. **16**:10 103004.

17. Domingo, N., S. Thakrar, S. Balasubramanian, K. Colgan, M. Clark, P. Adams, S. Pandis, D. Tilman, J. Marshall, C.W. Tessum, A.L. Goodkind, I.L. Azevedo, and J.D. Hill (2021) Air quality-related health damages of food. *Proc. Natl. Acad. Sci. U.S.A.* **118**:20 e2013637118.

16. Tessum, C.W.*, D.A. Paolella, S.E. Chambliss, J.S. Apte, J.D. Hill, and J.D. Marshall (2021) PM2.5 Polluters Disproportionately and Systemically Affect People of Color in the United States. *Science Adv*. **7**:18 eabf4491.

15. Kelp, M.M., D.J. Jacob, J.N. Kutz, J.D. Marshall, and C.W. Tessum* (2020) Toward stable, general machine-learned models of the atmospheric chemical system. *J. Geophys. Res. Atmos*. **125** e2020JD032759.

14. Thakrar, S.K., S. Balasubramanian, P.J. Adams, I. Azevedo, N.Z. Muller, S.N. Pandis, S. Polasky, P. Arden, A.L. Robinson, J.S. Apte, C.W. Tessum, J.D. Marshall, and J.D. Hill (2020) Reducing Mortality from Air Pollution in the United States by Targeting Specific Emission Sources. *Environ. Sci. Technol. Lett*. **7**:9 639–645.

13. Thind, M.P., C.W. Tessum, I.L. Azevedo, and J.D. Marshall (2019) Fine Particulate Air Pollution from Electricity Generation in the US: Health Impacts by Race, Income, and Geography. *Environ. Sci. Technol*. **53**:23 14010–14019.

12. Dimanchev, E.G., S. Paltsev, M. Yuan, D. Rothenberg, C.W. Tessum, J.D. Marshall, and N.E. Selin (2019) Health co-benefits of sub-national renewable energy policy in the US. *Environ. Res. Lett*. **14**:8 085012.

11. Goodkind, A.L., C.W. Tessum, J.S. Coggins, J.D. Hill, and J.D. Marshall (2019) Fine-scale damage estimates of particulate matter air pollution reveal opportunities for location-specific mitigation of emissions. *Proc. Natl. Acad. Sci. U.S.A.* **116**:18 8775–8780.

10. Hill, J.D., A.L. Goodkind, C.W. Tessum, S. Thakrar, D. Tilman, S. Polasky, T. Smith, N. Hunt, K. Mullins, M. Clark, and J.D. Marshall (2019) Air-quality-related health damages of maize. *Nat. Sustain*. **2** 397–403.

9. Tessum, C.W., J.S. Apte, A.L. Goodkind, N.Z. Muller, K.A. Mullins, D.A. Paolella, S. Polasky, N.P. Springer, S.K. Thakrar, J.D. Marshall, and J.D. Hill (2019) Inequity in consumption of goods and services adds to racial-ethnic disparities in air pollution exposure. *Proc. Natl. Acad. Sci. U.S.A.* **116**:13 6001–6006 (featured article).

8. Liu, L., T. Hwang, S. Lee, Y. Ouyang, B. Lee, S.J. Smith, C.W. Tessum, J.D. Marshall, F. Yan, K. Daenzer, and T.C. Bond (2019) Health and climate impacts of future United States land freight modelled with global-to-urban models. *Nat. Sustain*. **2** 105–112 (cover article).

7. Paolella, D., C.W. Tessum*, P. Adams, J.S. Apte, S. Chambliss, J.D. Hill, N. Muller, and J.D. Marshall (2018) Effect of Model Spatial Resolution on Estimates of Fine Particulate Matter Exposure and Exposure Disparities in the United States. *Environ. Sci. Technol. Lett*. **5**:7 436–441.

6. Tessum, C.W.*, J.D. Hill, and J.D. Marshall (2017) InMAP: A model for air pollution interventions. *PLoS ONE*. **12**:4 e0176131.

5. Tessum, C.W., J.D. Hill, and J.D. Marshall (2015) Twelve-month, 12 km resolution North American WRF-Chem v3.4 air quality simulation: performance evaluation. *Geosci. Model Dev*. **8**:4 957–973.

4. Tessum, C.W., J.D. Hill, and J.D. Marshall (2014) Life cycle air quality impacts of conventional and alternative light-duty transportation in the United States. *Proc. Natl. Acad. Sci. U.S.A.* **111**:52 18490–18495.

3. Hu, L., D.B. Millet, M. Baasandorj, T.J. Grif, K.R. Travis, C.W. Tessum, J.D. Marshall, W.F. Reinhart, T. Mikoviny, M. Müller, A. Wisthaler, M. Graus, C. Warneke, and J.D. Gouw (2014) Emissions of C6-C8 aromatic compounds in the United States: Constraints from tall tower and aircraft measurements. *J. Geophys. Res. Atmos*. 826–842.

2. Tessum, C.W., J.D. Marshall, and J.D. Hill (2012) A spatially and temporally explicit life cycle inventory of air pollutants from gasoline and ethanol in the United States. *Environ. Sci. Technol*. **46**:20 11408–11417.

1. Millet, D.B., E. Apel, D.K. Henze, J. Hill, J.D. Marshall, H.B. Singh, and C.W. Tessum (2012) Natural and anthropogenic ethanol sources in North America and potential atmospheric impacts of ethanol fuel use. *Environ. Sci. Technol*. **46**:15 8484–92.

Scientific, Technical, and Management Experience

Owner/Partner: CT Consulting LLC, Enviromind LLC 2008–2023

Automation Intern: Voith Paper AG 2006