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(a) Professional Preparation

Washington University, St. Louis, MO	Civil Engineering	B.S.	2008
Stanford University, Stanford, CA	Civil & Environmental Engineering	M.S.	2010
Stanford University, Stanford, CA	Civil & Environmental Engineering	Ph.D.	2014
University of California, Berkeley, CA	Civil & Environmental Engineering	Postdoc	2016

(b) Appointments

6/2016 - present	Assistant Professor, Department of Civil and Environmental Engineering, University of California, Davis
7/2014 - 6/2016	Postdoctoral Researcher, Department of Civil and Environmental Engineering, University of California, Berkeley

(c) Products Most Closely Related to the Proposed Project

1. **Miller, S.A.**, & F.C. Moore. (2020) "Climate and health damages of global concrete production." *Nature Climate Change*, 10: 439-443, doi.org/10.1038/s41558-020-0733-0
2. **Miller, S.A.** (2020). "The role of cement service-life on the efficient use of resources." *Environmental Research Letters*, 15: 024004. doi: 10.1088/1748-9326/ab639d
3. Kamau-Devers, K. & **S.A. Miller.** (2020) "The environmental attributes of wood fiber composites with bio-based or petroleum-based plastics." *The International Journal of Life Cycle Assessment*, doi.org/10.1007/s11367-020-01744-6
4. **Miller, S.A.** & R.J. Myers (2020). "Environmental impacts of alternative cement binders." *Environmental Science & Technology*, 54: 677-686, doi: doi.org/10.1021/acs.est.9b05550
5. Kamau-Devers, K., Z. Kortum, & **S.A. Miller.** (2019) "Bio-based poly(lactic acid) (PLA) wood polymer composites: Studies on sorption behavior, morphology, and heat conductance." *Construction and Building Materials*, 214: 290-302, doi.org/10.1016/j.conbuildmat.2019.04.098
6. **Miller, S.A.**, A. Horvath, & P.J.M. Monteiro. (2018). "Impacts of booming concrete production on water resources worldwide." *Nature Sustainability*, 1:69-76, doi: doi.org/10.1038/s41893-017-0009-5
7. **Miller, S.A.**, V.M. John, S.A. Pacca, & A. Horvath (2018). "Carbon dioxide reduction potential in the global cement industry by 2050." *Cement and Concrete Research*, 114: 115-124, doi: 10.1016/j.cemconres.2017.08.026
8. Monteiro. P.J.M., **S.A. Miller**, & A. Horvath. (2017). "Towards sustainable concrete." *Nature Materials*, 16 (7): 698-699, doi.org/10.1038/nmat4930
9. **Miller, S.A.,** P.J.M. Monteiro, C.P. Ostertag, & A. Horvath. (2016) "Comparison indices for design and proportioning of concrete mixtures taking environmental impacts into account." *Cement and Concrete Composites*, 68: 131-143. doi: 10.1016/j.cemconcomp.2016.02.002
10. **Miller, S.A.**, S.L. Billington & M.D. Lepech. (2016) "Influence of Carbon Feedstock on Potentially Net Beneficial Environmental Impacts of Bio-based Composites." *Journal of Cleaner Production*, 132: 266-278. doi: 10.1016/j.jclepro.2015.11.047

11. **Miller, S.A.**, A. Horvath, & P.J.M. Monteiro. (2016) "Readily implementable techniques can cut annual CO2 emissions from the production of concrete by over 20%." *Environmental Research Letters*, 11: 074029. doi: 10.1088/1748-9326/11/7/074029
12. **Miller, S.A.**, A. Horvath, P.J.M. Monteiro, & C.P. Ostertag. (2015) "Greenhouse gas emissions from concrete can be reduced by using age as a design factor." *Environmental Research Letters*, 10: 114017. doi: 10.1088/1748-9326/10/11/114017
13. **Miller, S.A.**, Srubar III, W. V., Billington, S.L., & M.D. Lepech. (2015) "Integrating durability-based service life predictions with environmental impact assessments of natural fiber-reinforced composite materials." *Resources, Conservation and Recycling*, 99: 72-83. doi: 10.1016/j.resconrec.2015.04.004
14. **Miller, S.A.**, M.D. Lepech, & S.L. Billington. (2013). "Application of multi-criteria material selection techniques to constituent refinement in biobased composites." *Materials & Design*, 52: 1043-1051, doi.org/10.1016/j.matdes.2013.06.046
15. **Miller, S. A.**, S.L. Billington, & M.D. Lepech. (2013). "Improvement in environmental performance of poly (β-hydroxybutyrate)-co-(β-hydroxyvalerate) composites through process modifications." *Journal of Cleaner Production*, 40: 190-198, doi.org/10.1016/j.jclepro.2012.08.033

(d) Synergistic Activities

1. **Service to the Scientific and Engineering Community (International)**. The PI is a contributing member in the *United Nations Environmental Programme SBCI Working Group on Low-CO_2 Cements Initiative*, an international collaboration of scientists developing a report that examines methods for reducing carbon dioxide emissions associated with concrete production and provides recommendations for mitigation globally.
2. **Service to the Scientific and Engineering Community (National)**. The PI serves on the American Concrete Institute the Sustainability of Concrete Committee, which develops reports and supports exchange of information related to environmental impact characterization and methods for reducing impacts associated with concrete production, use, and disposal.
3. **Development of Curricular Materials (University Level):** The PI developed *Designing Materials for the Environment (ECI 239)* at the University of California, Davis, a course in which students are exposed to methods for engineering more environmentally sustainable materials while meeting performance requirements.
4. **Development of Curricular Materials (High School Level).** The PI developed a high-school course, *Closing the Material Loop*, on environmental impacts of materials and products taught through Stanford University's *Splash* program, an organization that works to broaden the academic horizons of middle school and high school students from traditionally underserved communities in the Bay Area.
5. **Broadening Participation of Underrepresented Groups in STEM.** The PI is a current fellow with the University of California Davis' Center for Educational Effectiveness in their Course Redesign And Teaching Effectiveness (CREATE) program. As a CREATE Fellow, the PI focuses on redesigning undergraduate curriculum to enhance learning experiences for diverse student populations.