



Exponent®
Engineering & Scientific Consulting

Ian Williams, Ph.D., P.E.

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Professional Profile

Dr. Williams specializes in evaluating the design and performance of concrete structures and cement-based materials. He has experience investigating material failures and construction defects, and in the design of environmental and liquid-retaining structures.

Dr. Williams's areas of expertise include concrete composition and physical properties, concrete durability, and the evaluation of damage to structures caused by earthquakes, snow, wind, and other environmental factors. He also has research experience in fiber reinforced concrete, nonlinear finite element modeling, additive manufacturing of cementitious materials, building energy efficiency, and sustainability.

Prior to joining Exponent, Dr. Williams worked as a structural design engineer at CDM Smith where he was involved in the design of environmental structures and provided technical review of Hazard Mitigation Grant proposals for the Federal Emergency Management Agency (FEMA).

Academic Credentials & Professional Honors

Ph.D., Civil and Environmental Engineering, University of California, Berkeley, 2019

M.S., Civil and Environmental Engineering, University of California, Berkeley, 2014

B.S., Civil Engineering, Purdue University, 2013

Siemens Engineering for Change Design Challenge Winner, 2020

Outstanding Graduate Student Instructor Award, 2019

Strategic Research Fellowship, 2017

Licenses and Certifications

Professional Engineer Civil, California, #95742

Prior Experience

Structural Engineer, CDM Smith, 2020-2022

Postdoctoral Research Scholar, University of California, Berkeley, 2019

Professional Affiliations

American Concrete Institute (ACI)

Structural Engineers Association of California (SEAOC)

Languages

Spanish

Publications

Williams, I. D.; Arteta, C.; Shao, Y.; Ostertag, C. P. (2022) Hybrid fiber reinforced concrete special shear wall boundary element in compression. *Engineering Structures* (Vol. 252, 2022, 113726, ISSN 0141-0296) <https://doi.org/10.1016/j.engstruct.2021.113726>.

Aghdasi, P., Williams, I.D., Salazar, B., Panditi, N., Taylor, H. K., Ostertag, C. P. (2018) Lightweight Octet-Truss Engineered Composite (OTEC) for Façade and Flooring Systems. *Composite Structures* 2018.

Conference Proceedings:

Williams, I. D., Arteta, C. A., & Ostertag, C. P. (2018). Computational Buckling Response of Reinforcing Bars Embedded in Hybrid Fiber Reinforced Concrete (HyFRC). G. Meschke, B. Pichler, & J. G. Rots (Eds.), *Computational Modelling of Concrete Structures (EURO-C 2018)* (pp. 561–567). Taylor & Francis, London.

Williams, I. D., Arteta, C. A., & Ostertag, C. P. (2017). Experimental Response of a HyFRC Boundary Element Under Pure Compression. *16th World Conference on Earthquake Engineering 2017* (p. Paper 1092). Santiago, Chile.

Presentations

Williams ID, Aghdasi P, Salazar B, Panditi N, Taylor HK, Ostertag CP. Octet Truss Engineered Composite (OTEC). Oral Presentation, Digital Concrete, ETH Zurich, Switzerland, 2018.

Williams ID, Ostertag CP. Computational Buckling Response of Reinforcing Bars Embedded in Hybrid Fiber Reinforced Concrete (HyFRC). Oral Presentation, EURO-C Computational Modeling of Concrete Structures, Bad Hofgastein, Austria, 2018.

Duncan J, Williams ID, Ostertag CP. Hybrid Simulation and Seismic Testing of Environmentally Damaged Bridges. Oral Presentation, Pacific Earthquake Engineering Research Center Annual Meeting, Berkeley, CA, 2018.

Williams ID, Arteta C, Ostertag CP. Experimental Response of a HyFRC Boundary Element Under Pure Compression. Oral Presentation and Chairman of general session on Special Structures, 16th World Conference on Earthquake Engineering, Santiago, Chile, 2017.