

**SARAH L. BILLINGTON***UPS Foundation Professor**Bass University Fellow in Undergraduate Education*

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**PROFESSIONAL PREPARATION**

1992-97 **The University of Texas at Austin**, M.S.E. 1994, Ph.D. 1997, Structural Engineering  
 1990-91 **The Swiss Federal Institute of Technology**, Fulbright Fellowship, Civil Engineering, Zurich  
 1986-90 **Princeton University**, B.S.E., High Honors 1990, Civil Engineering, Certificate in  
 Architecture Studies

**PROFESSIONAL APPOINTMENTS**

Sept. 2021 – present **UPS Foundation Professor**, Civil & Environmental Eng., Stanford U, Stanford, CA  
 Sept 2021 – present **Chair**, Civil & Environmental Engineering, Stanford Univ., Stanford, CA  
 Sept. 2014 – present **Senior Fellow**, Woods Institute for the Environment, Stanford Univ., Stanford, CA  
 Sept. 2013 – present **Professor of Structural Engineering**, Stanford University, Stanford, CA  
 Sept 2009 – 2015 **Associate Chair**, Civil & Environmental Engineering, Stanford Univ., Stanford, CA  
 Sept 2005 – 2013 **Associate Professor of Structural Engineering**, Stanford University, Stanford, CA  
 Aug 2008-Apr 2009 **Visiting Professor**, Structural Mechanics, Faculty of Civil Engineering, Delft  
 University of Technology, The Netherlands  
 Sept 2006-07 **Co-founder and CTO**, CalStar Cement, Inc., Newark, CA (*later CalStar Products*)  
 Jan 2003-Aug 2005 **Clare Boothe Luce Assistant Professor of Structural Engineering**, Stanford  
 University, Stanford, CA  
 July 1997-Dec 2002 **Assistant Professor of Structural Engineering**, Cornell University, Ithaca, NY  
 Feb-Dec 1998 **Visiting Professor**, Computational Mechanics group of Prof. René de Borst, Faculty  
 of Civil Engineering, Delft University of Technology, The Netherlands  
 April-July 1992 **Structural Engineer**, Greiner Engineering, Inc., Timonium, Maryland  
 Sept-Oct 1991 **Construction Management Intern**, Elektrowatt Engineers, Laufenburg, Switzerland  
 June-Aug 1989 **Structural Engineering Intern**, Skidmore, Owings & Merrill, London, England  
 June-Aug 1988 **Structural Engineering Intern**, Skidmore, Owings & Merrill, Chicago, Illinois

**HONORS & AWARDS**

Bass University Fellow in Undergraduate Education, Stanford University, 2022 – present  
 First Place Paper Award, Second International Interactive Symposium on UHPC, Albany, NY, June 2019  
 Milligan Family University Fellow in Undergraduate Education, Stanford University, 2012-2022  
 Stanford Fellow, Oct. 2014 – June 2015  
 ACMA Composites 2011 Best in Track Technical Paper Award: Green  
 Elected Fellow, American Concrete Institute, March 2006  
 Fiona Ip Li '78 and Donald Li '75 Excellence in Teaching Award, College of Engineering, Cornell  
 University, June 2002  
 ACI Structural Engineering Award, April 2002 for co-authored paper (see publications list)  
 ARC Career Development Award (from ASCE's Civil Engineering Research Foundation), Nov. 2000  
 Invited participation in NAE's *Frontiers of Engineering* Conference, Sept. 2000  
 NSF Early Career Award, July 2000  
 University of Texas Graduate Research Fellowship, 1994-1997  
 National Science Foundation Graduate Research Fellowship, 1993-1996  
 W.R. Grace Fellowship from the American Concrete Institute, 1993  
 Endowed Presidential Graduate Scholarship, University of Texas 1992  
 Fulbright Fellowship, 1990-91 (Zürich, Switzerland)

## PUBLICATIONS

### Refereed

1. Altaf, B., Bloomfield, L.S.P., Karzai, D.N., Sawe, N.A., Murnane, E. L., Bencharit, L. Z., Landay, J. A., and S.L. Billington (2023). "Time Perception During the Pandemic: A Longitudinal Study Examining the Role of Indoor and Outdoor Nature Exposure for Remote Workers," *Building and Environment*, in press.
2. Becerik-Gerber, B., Lucas, G., Aryal, A., Awada, M., Berges, M., Billington, S., Boric-Lubecke, O., Ghahramani, A., Heydarian, A., Hoelscher, C., Jazizadeh, F., Khan, A., Langevin, J., Liu, R., Marks, F., Mauriello, M. L., Murnane, E., Noh, H., Pritoni, M., Roll, S., Schaumann, D., Seyedrezaei, M., Taylor, J. E., Zhao, J., Zhu, R. (2022) "The field of human building interaction for convergent research and innovation for intelligent built environments," *Scientific Reports*; **12**(1), 22092
3. Becerik-Gerber, B., Lucas, G., Aryal, A., Awada, M., Berges, M., Billington, S. L., Boric-Lubecke, O., Ghahramani, A., Heydarian, A., Jazizadeh, F., Liu, R., Zhu, R., Marks, F., Roll, S., Seyedrezaei, M., Taylor, J. E., Hoelscher, C., Khan, A., Langevin, J., Mauriello, M., Murnane, E., Noh, H., Pritoni, M., Schaumann, D., Zhao, J. (2022) "Ten questions concerning human-building interaction research for improving the quality of life," *Building and Environment*; **226**, 109681
4. Douglas I.P., Murnane E.L., Bencharit L.Z., Altaf B., Costa J.M.dR., Yang J., Ackerson M., Srivastava C., Cooper M., Douglas K., King J., Paredes P.E., Camp N.P., Mauriello M.L., Ardoin N.M., Markus H.R., Landay J.A., Billington S.L., (2022) "Physical workplaces and human well-being: A mixed-methods study to quantify the effects of materials, windows, and representation on biobehavioral outcomes," *Building and Environment*, **224**, 109516
5. Shao, Y., Nguyen, W., Bandelt, M. J., Ostertag, C.P. and S.L. Billington (2022) "Seismic Performance of High-performance Fiber-reinforced Cement-based Composite Structural Members: A Review," *ASCE Journal of Structural Engineering*, **148**(10).
6. Altaf, B., Bianchi, E., Douglas, I. P., Douglas, K., Byers, B., Paredes, P. E., Ardoin, N. M., Markus, H. R., Murnane, E. L., Bencharit, L. Z., Landay, J. A., & Billington, S. L. (2022). "Use of Crowdsourced Online Surveys to Study the Impact of Architectural and Design Choices on Wellbeing," *Frontiers in Sustainable Cities*, **4**.
7. Shao, Y., Tich, K.L., Boaro, S.B., and S.L. Billington, (2022) "Impact of Fiber Distribution and Cyclic loading on The Bond-Slip Behavior of Steel-reinforced UHPC," *Cement and Concrete Composites*, **126**, 104338
8. Shao, Y., and S.L. Billington, (2022) "Impact of UHPC Tensile Behavior on Steel Reinforced UHPC Flexural Behavior," *ASCE J. Structural Engineering*, **148**(1), 04021244
9. Shao, Y., and S.L. Billington (2021) "Impact of cyclic loading on longitudinally-reinforced UHPC flexural members with different fiber volumes and reinforcing ratios," *Engineering Structures*, **241**, 112454
10. Shao, Y., Hung, C-C., and S.L. Billington (2021). Gradual Crushing of Steel Reinforced HPFRCC Beams: Experiments and Simulations, *Journal of Structural Engineering*, **147**(8), 04021114.
11. Haham H., Riscoe, A., Frank, C.W., and Billington, S.L. (2021) "Effect of Bubble Nucleating Agents derived from Biochar on the Foaming Mechanism of Poly Lactic Acid Foams," *Applied Surface Sciences Advances*, **3**, 100059.
12. Haham, H., Shen, M.-Y., Billington, S.L., and C.W. Frank (2020) "Comparison of nanocrystalline cellulose dispersion versus surface nucleation in poly(hydroxybutyrate-co-hydroxyvalerate) crystallization," *SPE Polymers*, **1**(1), 15-25.

13. Shao, Y. and S.L. Billington (2020) "Flexural Performance of Steel-reinforced Engineered Cementitious Composites with Different Reinforcing Ratios and Steel Types," *Construction & Building Materials*, **231**, 117159.
14. Shao, Y. and S.L. Billington (2019) "Predicting the two predominant flexural failure paths of longitudinally reinforced high-performance fiber-reinforced cementitious composite structural members," *Engineering Structures*, **199**, 109581.
15. Nguyen, W., Bandelt, M.J., Trono, W., Billington, S.L., and C.P. Ostertag (2019) "Mechanics and failure characteristics of hybrid fiber-reinforced concrete (HyFRC) composites with longitudinal steel reinforcement," *Engineering Structures*, **183**, 243-254.
16. Zhang, Z., Hamledari, H., Billington, S. & Fischer, M. 4D Beyond Construction: Spatio-Temporal and Life-Cyclic Modeling and Visualization of Infrastructure Data. (2018), *J. Information Technology in Construction*, **23**, 285-304.
17. Frank, T.E., Lepech, M.D., and S.L. Billington (2018) "Finite element models of reinforced ECC beams subjected to various cyclic deformation," *Computers and Concrete*, **22**(3) 305-317. DOI: 10.12989/cac.2018.22.3.305
18. Bandelt, M.J., and S.L. Billington (2018) "Simulation of Deformation Capacity in Reinforced High-Performance Cementitious Composite Flexural Members," *ASCE Journal of Structural Engineering*, **144**(10): 04018188. DOI: 10.1061/(ASCE)ST.1943-541X.0002174.
19. Li, R.J., Gutierrez, J., Chung, Y.-L., Frank, C.W., Billington, S.L., and E.S. Sattely (2018) "A lignin-epoxy resin derived from biomass as an alternative to formaldehyde-based wood adhesives," *Green Chemistry*, **20**(7) 1459-1466.
20. Frank, T.E., Lepech, M.D., and S.L. Billington (2018) "Experimental testing of reinforced ECC beams subjected to various cyclic deformation histories," *ASCE Journal of Structural Engineering*, **144**(6), 04018052.
21. Frank, T.E., Lepech, M.D., and S.L. Billington (2017) "Experimental testing of reinforced concrete and reinforced ECC flexural members subjected to various cyclic deformation histories," *Materials & Structures*, **50**(5): 232-243.
22. Ryan, C.A., Billington, S.L., and C.S. Criddle (2017) "Biocomposite fiber-matrix treatments that enhance in-service performance can also accelerate end-of-life fragmentation and anaerobic biodegradation to methane," *Journal of Polymers and the Environment*, **26**(4): 1715-1726.
23. Bandelt, M.J., T.E. Frank, M.D. Lepech and S.L. Billington (2017) "Bond Behavior and Interface Modeling of Reinforced High-Performance Fiber-Reinforced Cementitious Composites." *Cement and Concrete Composites*, **83**(188-201).
24. Ryan, C.A., Billington, S.L., Criddle, C.S. (2017) "Methodology to assess end-of-life anaerobic biodegradation kinetics and methane production potential for composite materials," *Journal of Composites Part A*, **95**(388-399).
25. Ryan, C.A., Billington, S.L., Criddle, C.S. (2017) "Assessment of models for anaerobic biodegradation of a model bioplastic: poly(hydroxybutyrate-co-hydroxyvalerate)," *Bioresource Technology*, **227**(205-213).
26. Flint, M.M., Fringer, O., Billington, S.L., Freyberg, D., Diffenbaugh, N.S., (2017) "Historical analysis of hydraulic bridge collapses in the continental United States," *Journal of Infrastructure Systems*, **23**(3). *J. Infrastruct. Syst.*, **23**(3): 04017005
27. Bandelt, M.J., and S.L. Billington. (2016) "Impact of Reinforcement Ratio and Loading Type on the Deformation Capacity of High-Performance Fiber-Reinforced Cementitious Composites Reinforced with Mild Steel," *ASCE J. Structural Engineering*, **142**(10).

28. Bandelt, M.J., and S.L. Billington. (2016) "Bond Behavior of Steel Reinforcement in High-Performance Fiber-Reinforced Cementitious Composite Flexural Members." *Materials and Structures*, **49**:71-86.
29. Miller, S.A., Billington, S.L., and Lepech, M.D. (2016) "Influence of carbon feedstock on potentially net beneficial environmental impacts of bio-based composites," *Journal of Cleaner Production*, **132**: 266-278.
30. Miller, S.A., Srubar III, W.V., Billington, S.L., and 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.
31. Miller, S.A., Lepech, M.D., & S.L. Billington. (2015) "Static versus time-dependent material selection charts and application in wood flour composites." *Journal of Biobased Materials and Bioenergy*, **9**:273-283.
32. Srubar, W.V. III, Miller, S.A., Lepech, M.A., and Billington, S.L. (2014) "Incorporating spatiotemporal effects and moisture diffusivity into a multi-criteria materials selection methodology for wood-polymer composites," *Construction & Building Materials*, **71**:589-601.
33. Flint, M.M., Baker, J.W., & Billington, S.L. (2014), "A modular framework for performance-based durability engineering," *Structural Safety*, **50**: 78-93.
34. Moreno, D.M. Trono, W., Jen, G., Ostertag, C.P., and Billington, S.L., (2014) "Tension Stiffening in Reinforced High Performance Fiber Reinforced Cement-Based Composites," *Cement and Concrete Composites*, **50**(2014):36-46.
35. Eatherton, M.R., Ma, X., Krawinkler, H., Mar, D., Billington, S.L., Hajjar, J.F., Deierlein, G.G., (2014) "Design Concepts for Controlled Rocking of Self-Centering Steel Braced Frames," *ASCE Journal of Structural Engineering*, **140**(11): 04014082.
36. Michel, A.T., and Billington, S.L., (2014) "A Nonlinear Constitutive Model for Anisotropic Biobased Composite Materials," *ASCE J. Engineering Mechanics*, **140**(11): 04014083.
37. Lignos, D., Moreno, D., and Billington, S.L. (2014) "Seismic Retrofit of Steel Moment Resisting Frames with High Performance Fiber Reinforced Concrete Infill Panels: Large Scale Hybrid Simulation Experiments," *ASCE Journal of Structural Engineering*, **140**(3), 04013072.
38. Flint, M.M., Michel, A., Billington, S.L., Geiker, M.R. (2014) "Influence of temporal resolution and processing of exposure data on modeling of chloride ingress and reinforcement corrosion in concrete," *RILEM Materials & Structures*, (2014) **47**:729-748.
39. Kyriakides, M.A., and Billington S.L., (2014) "Behavior of Unreinforced Masonry Prisms and Beams Retrofitted with Engineered Cementitious Composites," *RILEM Materials & Structures*, **47**(9): 1573-1587.
40. Kyriakides, M.A., Billington, S.L., (2014) "Cyclic response of Non-Ductile Reinforced Concrete Frames with Unreinforced Masonry Infills Retrofitted with Engineered Cementitious Composites," *ASCE Journal of Structural Engineering*, **140**(2), 04013046.
41. Ben Cheikh, R., Michel, A.T., and Billington, S.L., (2014) "Mechanical Characterization and Modeling of PHBV-Alfa Fiber Reinforced Composites," *Polymer Composites*, **35**(9): 1758-1766.
42. Chung, Y.-L., Olsson, J.V., Li, R.J., Frank, C.W., Waymouth, R.M., Billington, S.L., and Sattely, E. (2013). "A renewable lignin-PLA copolymer and application in biobased composites," *ACS Sustainable Chemistry and Engineering*. **1**(10): 1231-1238.
43. Miller, S.A., Lepech, M.L., and Billington, S.L. (2013) "Application of Multi-criteria Material Selection Techniques to Constituent Refinement in Biobased Composites," *Materials and Design*, **52**: 1043-1051

44. Srubar, W.V., & S.L. Billington (2013) "A Micromechanical Model for Moisture-induced Deterioration in Fully Biorenewable Wood-plastic Composites," *Composites: Part A*, **50**:81-92.
45. Miller, S.A., M.D. Lepech, & S.L. Billington. (2013) "Evaluation of Use of Material Properties in Functional Units for Environmental Impact Modeling of Biobased Composites," *Biobased Materials and Bioenergy*, **7**(5): 588-599.
46. Miller, S.A., Billington, S.L., and Lepech, M.D. (2013) "Improvement in Environmental Performance of Poly( $\beta$ -hydroxybutyrate)-co-( $\beta$ -hydroxyvalerate) Composites through Process Modifications," *Journal of Cleaner Production*, **40**: 190-198.
47. Koutromanos, I., Kyriakides, M., Stavridis, A., Billington, S.L., and Shing, P.B., (2013) "Shake-Table Tests of a Three-Story Masonry-Infilled RC Frame Retrofitted with Composite Materials," *ASCE Journal of Structural Engineering*, **139**(8): 1340-1351.
48. Genturck, B., El Nashai, A., Lepech, M., and Billington, S.L. (2013) "Behavior of Concrete and ECC Structures under Simulated Earthquake Motion", *ASCE Journal of Structural Engineering*, **139**(3): 389-399
49. Srubar III W.V.\*, Wright Z.C.\*, Tsui A., Michel A.T., Billington S.L., and Frank C.W. (2012) "Characterizing the effects of ambient aging on the mechanical and physical properties of two commercially available bacterial thermoplastics," *Polymer Degradation & Stability*, **97**:1922-1929.   
\*equal contribution
50. Srubar, W.V., Frank, C.W. and Billington S.L. (2012) "Modeling the Kinetics of Water Transport and Hydroexpansion in a Lignocellulose-Reinforced Bacterial Copolyester," *Polymer*, **53**(11): 2152-2161
51. Michel, A.T., and Billington, S.L. (2012) "Characterization of Poly-Hydroxybutyrate Films and Hemp Fiber Reinforced Composites Exposed to Accelerated Weathering" *Polymer Degradation and Stability*, **97**(6): 870-878.
52. Srubar, W.V., Pilla, S., Wright, Z.C., Ryan, C.A., Greene, J.P., Frank, C.W., and Billington, S.L., (2012) "Mechanisms and Impact of Fiber-Matrix Compatibilization Techniques on the Material Characterization of PHBV/Oak Wood Flour Engineered Biobased Composites," *Composites Science and Technology*, **72** (2012) 708-715.
53. Liao, Q., Tsui, A., Billington, S, Frank, C.W. (2012) "Extruded foams from microbial poly(3-hydroxybutyrate-co-3-hydroxyvalerate) and its blends with cellulose acetate butyrate," *Polymer Engineering & Science*, **52**(7): 1495-1508, DOI 10.1002/pen.
54. Kyriakides, MA, Hendriks, MAN, and Billington, SL (2012) "Simulation of unreinforced masonry beams retrofitted with Engineered Cementitious Composites in flexure," *ASCE, Journal of Composites for Construction*, **24**(5): 506-515.
55. Christian, SJ and Billington, SL (2012) "Moisture Diffusion and its Impact on Uniaxial Tensile Response of Biobased Composites," *Composites: Part B*, **43** (2012) 2303-2312.
56. Srubar, W.V., Michel, A.T., Criddle, C.S., Frank, C.W., and Billington, S.L. (2011) "Engineered Biomaterials for Construction: A Cradle-to-Cradle Design Methodology for Green Material Development," *International Journal of Environmental, Cultural, Economic and Social Sustainability*, **7**(5): 157-166.
57. Christian, SJ and Billington, SL (2011) "Mechanical Response of PHB and Cellulose Acetate Natural Fiber-reinforced Composites for Construction Applications," *Composites: Part B*, **42** (2011) 1920–1928.
58. Alvarado A.J., Morales K.M., Srubar W.V., Billington S.L. (2011) "Effects of Natural Porous Additives on the Tensile Mechanical Performance and Moisture Absorption Behavior of PHBV-based Composites for Construction." *Stanford Undergraduate Research Journal*, **10**, (2011).

59. Olsen, EC and Billington, SL, (2011) "Cyclic behavior of precast, self-compacting ductile concrete infill panels for seismic retrofit of steel frame buildings," *ACI Structural Journal*, **108**(1): 51-60.
60. Lee, WK, and Billington, SL (2011) "Performance-Based Earthquake Engineering Assessment of a Self-Centering, Post-Tensioned Concrete Bridge System," *Earthquake Engineering & Structural Dynamics*, **49**(8): 887-902.
61. Douglas, KS and Billington, SL (2010) "Strain Rate Dependence of HPFRCC Cylinders in Monotonic Tension," *RILEM Materials & Structures*, **44**:391-404.
62. Lee, WK and Billington, SL (2010) "Residual Displacement Prediction for Structural Concrete Columns under Earthquake Loading," *ASCE J. Bridge Engineering*, **15**(3): 240-249.
63. Billington, SL (2009) "Evaluation of Sequentially Linear Finite Element Analysis to Simulate Nonlinear Behavior in Mortar and Engineered Cementitious Composites in Flexure," *ACI Special Publication 265-12*, November.
64. Lee, WK, and Billington, SL (2008) "Simulation of Self-Centering Fiber-Reinforced Concrete Columns," *Proceedings of ICE, Engineering and Computational Mechanics*, **161**(2): 77-84.
65. Rouse, JM, and Billington, SL, (2007) "Creep and Shrinkage of High-Performance Fiber-reinforced Cement-based Composites," *ACI Materials Journal*, **104**(2): 129-136.
66. Kesner, KE, and Billington, SL, (2005) "Investigation of Infill Panels made from Engineered Cementitious Composites for Seismic Strengthening and Retrofit," *ASCE J. Structural Engineering*, **131**(11): 1712-1720.
67. Han, TS, and Billington, SL, (2004) "Seismic Analysis of Structural Concrete Frame Buildings Using Interface Modeling," *ASCE J. Structural Engineering*, **130**(8): 1157-1168.
68. Billington, SL, and Yoon, JK, (2004) "Cyclic Response of Precast Bridge Columns with Ductile Fiber-reinforced Concrete," *ASCE J. Bridge Engineering*, **9**(4): 353-363.
69. Kesner, KE, and Billington, SL, (2003) "Experimental Response of Precast Infill Panel Connections and Panels Made With DFRCC," *J. Advanced Concrete Technology*, **1**(3): 1-7.
70. Kesner, KE, Billington, SL, Douglas, KS, (2003) "Cyclic Response of Highly Ductile Cement-based Composites," *ACI Materials Journal*, **100**(5): 381-390.
71. Han, TS, Feenstra, PH, and Billington, SL, (2003) "Simulation of Highly Ductile Fiber-reinforced Cement-Based Composites under Cyclic Loading," *ACI Structures Journal*, **100**(6): 749-757.
72. Kwan, WP, and Billington, SL, (2003) "Influence of Hysteretic Behavior on Equivalent Period and Damping of Structural Systems," *ASCE J. Structural Engineering*, **129**(5): 576-585.
73. Kwan, WP, and Billington, SL, (2003) "Unbonded Post-tensioned Bridge Piers: Part I - Monotonic and Cyclic Analyses," *ASCE J. Bridge Engineering*, **8**(2): 92-101.
74. Kwan, WP, and Billington, SL, (2003) "Unbonded Post-tensioned Bridge Piers: Part II - Seismic Analyses," *ASCE J. Bridge Engineering*, **8**(2): 102-111.
75. Han, TS, Ural, A, Chen, Y, Zehnder, A, Ingraffea, AI, Billington, SL, (2002) "Delamination buckling and propagation analysis of honeycomb panels using a cohesive element approach," *Int'l J. Fracture*, **115**(2): 101-123.
76. Han, TS, Billington, SL, and Ingraffea, AI (2001) "Simulation Strategies to Predict Seismic Response of RC Structures," *ACI Special Publication*, SP-205, ed. Willam and Tanabe, pp. 191-214.
77. Kwan WP, and Billington, SL, (2001a) "Simulation of Structural Concrete under Cyclic Load," *ASCE J. Structural Engineering*, **127**(12): 1391-1401.

78. Billington, SL, Barnes, RW, Breen, JE, (2001) "Alternate Substructure Systems for Standard Highway Bridges," *ASCE J. Bridge Engineering*, **6**(2): 87-94.
79. Billington, SL, Breen, JE, (2000) "Improving Standard Highway Bridges with Attention to Cast-in-place Substructures," *ASCE J. Bridge Engineering*, **5**(4): 344-351.
80. Billington, SL, Ratchye, SB, Breen, JE, Vernooy, DA, (2000) "Example Applications of Aesthetics and Efficiency Guidelines," *Concrete International*, **22**(2): 66-75. **\*Received ACI Structural Engineering Award, 2002\***
81. Billington, SL, Barnes, RW, Breen, JE, (1999) "A Precast Segmental Substructure System for Standard Bridges," *J. Precast/Prestressed Concrete Institute*, **44**(4): 56-73

### Refereed Research Reports

1. Lee, WK and SL Billington (2009), Simulation and Performance-Based Earthquake Engineering Assessment of Self-Centering Post-Tensioned Concrete Bridge Systems, Research Report, Pacific Earthquake Engineering Research (PEER) Center, PEER 2009/109, December.
2. Kesner, KE and Billington, SL (2005) Development of Seismic Strengthening and Retrofit Strategies for Critical Facilities Using Engineered Cementitious Composite Materials, Technical Report MCEER-05-0007, September.
3. Kesner, KE and Billington, SL (2004) Tension, Compression and Cyclic Testing of Engineered Cementitious Composite Materials, Technical Report MCEER-04-0002, March.

### Refereed Conference Proceedings

1. Altaf, B, Tavakoli, A, Bianchi, E, Landay, JA, and SL Billington (2023). "Leveraging Immersive Virtual Environments for Occupant Wellbeing Analysis" *ASCE International Conference on Computing in Civil Engineering*, June.
2. Bianchi, E, Tavakoli, A, and SL Billington (2023) "Using Computer Vision and Parametric Design Software to Quantify Nature Dose in Indoor Built Environments," *ASCE International Conference on Computing in Civil Engineering*, June.
3. Bianchi, E, Altaf, B, Tavakoli, A, Douglas, IP, Landay, JA, Billington, SL (2022) "Human wellbeing responses to real and simulated workplaces: A comparison of in-person, online, and virtual environments, *Proceedings of the 9th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation*, November (Abstract).
4. Shao, Y, Billington, SL, (2021). Bond Performance of Ultra-High-Performance Concrete (UHPC) under Flexural States, *fib Symposium 2021*, Lisbon, Portugal.
5. Nguyen, W, Shao, Y., Billington, SL, Bandelt, MJ, and Ostertag, CP (2020). High performance Fiber-reinforced Cementitious Composites for Seismic Design: A Review of Columns, *Proceedings of 17th World Conference on Earthquake Engineering (17WCEE)*, Sendai, Japan.
6. Mandeep, P, Shao, Y, Billington, SL, Bandelt, MJ (2020) Effect of Fiber Content Variation in Plastic Hinge Region of Reinforced UHPC Flexural Members, *Proceedings of RILEM-fib X International Symposium on Fibre Reinforced Concrete*, Valencia, Spain.
7. Shao, Y, Billington, SL, (2019). "Utilizing Full UHPC Compressive Strength in Steel Reinforced UHPC Beams," *Proceedings of 2<sup>nd</sup> International Interactive Symposium on UHPC*, Albany, NY, Paper ID: 116. **\*First Place Paper Award\***
8. Anagnos, T, Sheppard, SD, and SL Billington (2018) "Integrating a Digital Textbook into a Statics Course," *Proceedings of Frontiers in Education*, San Jose, CA, October.

9. \*Billington, SL, Shao, Y, Frank, TE, Bandelt, MJ, and DM Moreno (2018) "Simulation of reinforced ductile cement-based composite beams under cyclic loads," *Proceedings of EURO-C 2018, Computational modeling of concrete and concrete structures*; Bad Hofgastein, Austria.
10. Bandelt, MJ, and SL Billington (2016) "Influence of HPFRCC Tensile Properties on Numerical Simulation of Reinforced HPFRCC Component Behavior." *Proceedings of the Ninth International Symposium on Fiber Reinforced Concrete (BEFIB 2016)*; Vancouver, British Columbia, Canada.
11. Boylan-Ashraf, AC, Billington, SL, and Sheppard, S.D. (2015) "Using Online and Hands-on Activities to Improve Self-Efficacy in Mechanics," *Proceedings of the 122<sup>nd</sup> ASEE Annual Conference*, June, Seattle, WA.
12. \*Bandelt, MJ, and SL Billington (2014) "Monotonic and Cyclic Bond-Slip Behavior of Ductile High-Performance Fiber-Reinforced Cement-based Composites," *Proceedings of the 3<sup>rd</sup> International Conference on Strain Hardening Cement-based Composites*, The Netherlands.
13. \*Billington, SL, Sheppard, SD, Calfee, RC, Boylan-Ashraf, AC (2014) "Evaluation of Impact of Web-based Activities on Mechanics Achievement and Self-Efficacy," *Proceedings of the 121st ASEE Annual Conference & Exposition*, Indianapolis, Indiana, June.
14. Schar, MF, Billington, SL, and Sheppard, SD, (2014) "Predicting Entrepreneurial Intent among Entry-Level Engineering Students," *Proceedings of the 121st ASEE Annual Conference & Exposition*, Indianapolis, Indiana, June.
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### Other Papers

1. Billington, SL, Barnes, RW, Breen, JE, (1999) "Substructures Stack Up," *ASCE Civil Engineering*
2. Billington, SL, Billington, DP (1992) "Robert Maillarts Bruecken," *Werk Bauen & Wohnen*, Zurich, May 5. (Translated into German from "The Avant-garde Works of Robert Maillart")

## Patents

1. United States Patent 9,567,432. "Lignin poly(lactic acid) copolymers," issued 2/14/2017. Inventors: J.V. Olsson; Y.-L. Chung, R.J. Li, R. Waymouth, E. Sattely, S. Billington, C.W. Frank.
2. European Patent Application 2,895,528 "Graft-polymerization of Poly(lactic acid) onto Lignin and Application of graft-co-polymers as Modifiers for Poly(lactic acid) and Other Thermoplastics," Inventors: Frank, C.W.; Waymouth, R.M., Billington, S.L.; Criddle, C.S.; Sattely, E.; Chung, Y.; Olsson, J.V. 7/22/2015.
3. United States Patent 8,759,424. "Coated Biodegradable Building Article," issued 6/24/2014. Inventors: Billington, Sarah L., and Srubar, Wilfred V. III.
4. United States Patent 8,507,588. "PHBV/Ground Bone Meal and Pumice Powder Engineering Biobased Composite Materials for Construction," issued 8/13/2013. Inventors: Billington, Sarah L.; Srubar, Wilfred V. III.
5. United States Patent 7,887,893. "Bacterial poly(hydroxy alkanolate) polymer and natural fiber composites," issued February 15, 2011. Inventors: Billington, Sarah L.; Criddle, Craig S.; Morse, Margaret C.; Christian, Sarah J.; Pieja, Allison J.

## INVITED PRESENTATIONS

- |            |   |
|------------|---|
| Nov 2023   | Invited Speaker, International Spaces Summit, Academy of Neuroscience for Architecture and The International Arts + Mind Lab, Washington, DC.                         |
| Nov 2023   | Invited Speaker, Duke University, Dept. of Civil & Environmental Engineering  |
| April 2023 | Invited Speaker, Missouri University of Science & Technology, Dept. of Civil, Architectural, and Environmental Engineering  |
| Dec 2022   | Invited Speaker (Warren Lecture), U. Minnesota, Dept. of Civil, Environmental, and Geo-Engineering  |
| Nov 2022   | Invited Speaker, SREC conference, Stanford University   |
| May 2022   | Invited Speaker, SPIRE Board Meeting, Stanford University   |
| May 2022   | Invited Speaker, ETH-Zürich, Design ++ Seminar Series   |
| April 2022 | Invited Seminar Speaker, USC, Dept. of Civil & Environmental Engineering  |
| Fall 2021  | Invited SEMM Seminar Speaker, UC Berkeley, Department of Civil & Environmental Eng.   |
| Aug. 2021  | Invited Lecturer, Stanford Executive Program, Stanford GSB  |
| June 2021  | Invited Speaker at BEPS 2021  |
| Apr. 2021  | Invited Speaker, ASCI AEI Conference, Session on Light & Health   |
| April 2021 | Invited Panelist, University of Minnesota- at Duluth, Sustainability Series   |
| Nov. 2019  | Invited Seminar Speaker, Fall 2019 Building Technology Lecture Series, MIT  |
| Nov. 2019  | Keynote Speaker, Fall 2019 Symposium on Research + Building Innovation – Concrete, The University of Michigan Taubman College of Architecture and Urban Planning      |
| Oct. 2019  | Speaker, Reunion Homecoming Weekend Alumni Event, presenting Catalyst Project: Hybrid Physical + Digital Spaces for Enhanced Sustainability & Wellbeing, Stanford, CA |
| Sept. 2019 | Three Books Program Moderator, New Student Orientation, Stanford University   |
| Apr. 2019  | Invited Seminar Speaker, Dept. of Civil & Environmental Engineering, U. Illinois Urbana-Champaign   |
| Aug. 2018  | Invited Keynote, Gordon Research Conference, Hong Kong ( <i>unable to attend due to family emergency</i> )  |
| July 2018  | Invited Session Keynote Speaker, ISBBB, Guelph, Canada  |
| Jan. 2018  | Invited Speaker, Sustainable Adhesives from Biomass (SAB) Workshop, North Carolina A&T State University   |
| Jan. 2018  | Invited Seminar Speaker, Dept. of Civil & Environmental Eng., U.C. Davis  |
| Sept. 2017 | Invited Keynote, SHCC-4 Workshop, Dresden, Germany  |
| Nov. 2015  | Invited Session Speaker, ACI Convention   |
| Apr. 2015  | Session Speaker, ASCE Structures Congress   |
| Mar. 2015  | Invited Seminar Speaker, Dept. of Civil & Environmental Eng., U.C. Berkeley   |
| Sept. 2014 | Invited Seminar Speaker, Dept. of Civil & Environmental Eng., University of Houston   |



|            |   |
|------------|---|
| May 2014   | Invited Session Keynote Speaker, International Symposium on Biobased Composites   |
| Apr. 2014  | Invited Speaker, Woods Institute Retreat  |
| Feb. 2014  | Dinner speaker, SEAONC South Bay Meeting  |
| Sept. 2012 | Invited Keynote Speaker, BioEnvironmental Polymer Society, Annual Meeting   |
| Oct. 2011  | Invited Seminar speaker, Washington State University, Pullman, Washington   |
| Mar. 2011  | Invited Paper/Speaker, 8th International Conference on Urban Earthquake Engineering, Tokyo Institute of Technology.   |
| Oct. 2010  | Invited, Keynote Speaker, BioEnvironmental Polymer Society, Annual Meeting.   |
| Mar. 2010  | Invited, Keynote Speaker, EURO-C 2010, Computational Modeling of Concrete Structures  |
| Mar. 2009  | Invited Seminar Speaker, Dept. of Civil Engineering, Glasgow University, Scotland, UK.  |
| Jan. 2009  | Invited Seminar Speaker (two talks), Civil Engineering, MicroLab, Technical University of Delft, The Netherlands  |
| Nov. 2008  | Invited Speaker, Symposia on "Innovative Materials and Structures in Civil Engineering", Danish Technical University, Department of Civil Engineering - Structures, Copenhagen, Denmark   |
| Nov. 2008  | Invited Speaker (2 talks), Workshop on "Modeling and Testing of Quasi-[Brittle/Ductile] Composites," RWTH Aachen University, Institute of Structural Concrete, Aachen, Germany  |
| Apr. 2008  | Invited Dinner Speaker, Structural Engineers Association of Northern California, South Bay Meeting  |
| Nov. 2007  | Invited Seminar Speaker, Dept. of CEE, U.C. Berkeley  |
| Nov. 2006  | Invited Seminar Speaker, Dept. of CEE, Princeton University   |
| July 2006  | Invited Paper/Presentation for IABMAS: The 3rd International Conference on Bridge Maintenance, Safety and Management  |
| Aug. 2005  | Invited Paper/Presentation for ConMat '05: 3 <sup>rd</sup> International Conference on Construction Materials: Performance, Innovations and Structural Implications (sponsored by the Canadian and Japanese Societies of Civil Engineering, ISIS-Canada: Intelligent Sensing for Innovative Structures, and The University of British Columbia) |
| Dec. 2004  | Invited Panelist, US Business Council for Sustainable Development, Annual Meeting, Stanford, CA.  |
| Nov. 2004  | Invited Speaker for the annual convention of the American Segmental Bridge Institute  |
| Apr. 2004  | Invited Seminar Speaker, Dept. of Civil & Environmental Engineering, University of Illinois at Urbana-Champaign   |
| Apr. 2004  | Keynote Lecture at 5 <sup>th</sup> International Conference on Fracture Mechanics of Concrete and Concrete Structures, Vail, Colorado   |
| Dec. 2003  | Invited Speaker, University of California at San Diego Distinguished Speakers Series  |
| June 2003  | Invited Presentation of Lead Paper at the 4 <sup>th</sup> International Workshop on High Performance Fiber-reinforced Cement-based Composites, Ann Arbor, Michigan  |
| Feb. 2002  | Invited Presentation, Winter Seminar Series, Stanford University  |
| Nov. 2001  | Guest Lecture in Introductory Engineering Course, Smith College.  |
| Apr. 2001  | Invited Presentation, Seminar Series, University of Michigan  |
| Feb. 2000  | Guest Lecturer in Introduction to Architecture course (Topic: "The Engineer as Designer"), Cornell University, 800 students   |
| Oct. 1999  | Invited Presentation, PCI Convention, Palm Springs, CA.   |

## TEACHING

### Stanford University

|                |   |
|----------------|---|
| Undergraduate: | CEE 182: Structural Design<br>CEE 80N: Engineering the Built Environment (First Year Seminar)<br>ENGR 14: Introduction to Solid Mechanics (Engineering Fundamental) |
| Graduate:      | CEE 223: Materials for Sustainable Built Environments<br>CEE 285A: Advanced Behavior and Design of Structural Concrete  |

CEE 205B: Advanced Topics in Structural Concrete  
CEE 205A: Structural Materials Testing & Simulation

### Cornell University

Undergraduate: Structural Analysis  
Physical and Computational Simulation of Materials  
Graduate: Advanced Structural Concrete  
Structural Concrete Systems

## RESEARCH ADVISING

### Post-doctoral Scholars

Dr. Arash Tavoli, July 2022-August 2023  
Dr. Hai Haham, co-advisor Prof. Curt Frank (ChemE), September 2017-September 2019  
Dr. Anne Boylan-Ashraf, January 2014-June 2015  
Dr. Daniel Eriksson, November 2011-2013  
Dr. Yilin Chung, March 2011-2013  
Dr. Srikanth Pilla, September 2009-June 2010  
Dr. Dimitrios Lignos, October 2008-December 2009  
Mr. Tong-Seok Han, May 2001-Feb. 2002

### PhD Students

Mr. Antonio Skillicorn CEE, Stanford University, December 2022 – present  
Ms. Eva Bianchi CEE, Stanford University, January 2021 – present  
Ms. Basma Altaf CEE, Stanford University, Oct. 2019 – present  
Ms. Isabella Douglas CEE, Stanford University, June 2019 – present  
Mr. Yi Shao CEE, Stanford University, January 2017 – June 2020.  
Mr. Wenhao Chen CEE, Stanford University, co-advised, Prof. Oliver Fringer (primary advisor), October 2013 – June 2021.  
Mr. Tim Frank CEE, Stanford University, co-advised with Prof. Michael Lepech) October 2013 – August 2016.  
Ms. Cecily Ryan CEE, Stanford University, co-advised with Prof. Craig Criddle (primary advisor), April 2010 – June 2016.  
Mr. Matthew Bandelt CEE, Stanford University, October 2011-June 2015.  
Ms. Sarah Miller CEE, Stanford University, co-advised with Prof. Michael Lepech, July 2010 – June 2014.  
Ms. Madeleine Flint CEE, Stanford University, January 2010 – June 2014.  
Mr. Daniel Moreno-Luna CEE, Stanford University, January 2010 – March 2014.  
Mr. Wil Srubar CEE, Stanford University, October 2009 – Aug 2013  
Mr. Aaron Michel CEE, Stanford University, October 2008 – July 2013  
Mr. Marios Kyriakides CEE, Stanford University, January 2006 – March 2011.  
Ms. Margaret Morse CEE, Stanford University, co-advised with Prof. Craig Criddle, June 2004 – June 2009.  
Mr. Zixiao Zhang CEE, Stanford University, September 2003 – June 2009.  
Ms. Sarah Christian CEE, Stanford University, September 2004 – December 2008.  
Mr. Won Lee CEE, Stanford University, August 2003 – December 2006.  
Mr. Kyle Douglas CEE, Stanford University, September 2001 – December 2006.  
Mr. J. Matt Rouse CEE, Cornell University, January 2000 – August 2004.  
Mr. Keith Kesner CEE, Cornell University, August 1999 – January 2003.  
Mr. Tong-Seok Han CEE, Cornell University, co-advised with Prof. Anthony Ingraffea, August 1999 – March 2001.  
Ms. Winnie Kwan CEE, Cornell University, August 1997 – November 2000.

**Engineer's Degree Students**

|                     |   |
|---------------------|---|
| Mr. Yang Dang       | CEE, Stanford University, co-advised with Prof. Greg Deierlein and Prof. Michael Lepech, June 2010 – December 2011. |
| Ms. Joan Hanson     | CEE, Stanford University, April 2006 – Dec. 2008.   |
| Mr. Satoshi Matsuki | CEE, Stanford University, September 2004 – September 2005.  |

**MS Degree Students (Research)**

|                   |  |
|-------------------|--|
| Mr. Ruben Ortiz   | CEE, Cornell University, January 2002 – July 2003. |
| Ms. Jaekyung Yoon | CEE, Cornell University, August 2000 – May 2002.   |

**Undergraduate Thesis Advisees**

|                      |  |
|----------------------|--|
| Mr. Anthony Alvarado | CEE, Stanford University, June 2011 – June 2012. |
|----------------------|--|

**Committee Member (CEE unless otherwise noted)**

|                        |   |
|------------------------|---|
| Mr. Kopal Nihar        | PhD, Stanford Univ., TBD - GQE 2022                                 |
| Ms. Yiwen Dong         | PhD, Stanford Univ., TBD – GQE 2022                                 |
| Mr. Jason Hernandez    | PhD, Stanford Univ., TBD (reading) – GQE 2022                       |
| Mr. Adrian Biggerstaff | PhD, Stanford Univ., August 2021 (reading)                          |
| Mr. Kuanshi Zhong      | PhD, Stanford Univ., August 2020 (reading)                          |
| Mr. Scott Katalenich   | PhD, Stanford Univ., May 2020 (reading)                             |
| Mr. Andreas Katsanevas | PhD, Stanford Univ., Communications, February 2020                  |
| Mr. Amory Martin       | PhD, Stanford Univ., November 2019                                  |
| Ms. Maria Allende      | PhD, Stanford Univ., June 2019                                      |
| Ms. Natasa Mrazovic    | PhD, Stanford Univ., June 2018 (reading)                            |
| Mr. Dan Slotcavidge    | PhD, Stanford Univ., Materials Science & Engineering, May 2018      |
| Ms. Beth Reiken        | PhD, Stanford Univ., Mechanical Engineering, June 2017              |
| Mr. Henning Roedel     | PhD, Stanford Univ., June 2017 (reading)                            |
| Mr. Siming Dong        | PhD, Stanford Univ., Materials Science & Engineering, February 2017 |
| Mr. Russel Li          | PhD, Stanford Univ., Chemical Engineering, August 2016              |
| Mr. Ezra Jampole       | PhD, Stanford Univ., May 2016                                       |
| Mr. Jaewook Myung      | PhD, Stanford Univ., Environmental Engineering, February 2016       |
| Mr. Subhan Ali         | PhD, Stanford Univ., Dec. 2014 (reading)                            |
| Ms. Amy Tsui           | PhD, Stanford Univ., Chemical Engineering, June 2014 (reading)      |
| Mr. Anirudh Rao        | PhD, Stanford Univ., Nov. 2013 (reading)                            |
| Mr. Scott Swenson      | PhD, Stanford Univ., June 2013 (reading)                            |
| Mr. Zach Wright        | PhD, Stanford Univ., Chemical Engineering, June 2013 (reading)      |
| Mr. Fawad Muzaffar     | PhD, Stanford Univ., Feb. 2012 (reading)                            |
| Mr. Xiang Ma           | PhD, Stanford Univ., August 2010 (reading)                          |
| Ms. Qi Liao            | PhD, Stanford Univ., Chemical Engineering, June 2010 (reading)      |
| Mr. Jiro Takagi        | PhD, Stanford Univ., Feb. 2007 (defense)                            |
| Mr. Paul Cordova       | PhD, Stanford Univ., Aug. 2005 (defense)                            |
| Mr. Peng Li            | PhD, Stanford Univ., Aug. 2005 (reading)                            |
| Mr. Andrew Kim         | PhD, Stanford Univ., Aero/Astro Engineering, July 2005 (defense)    |
| Mr. Jorge Ruiz-Garcia  | PhD, Stanford Univ., Nov. 2004 (reading)                            |
| Mr. Arash Altoonash    | PhD, Stanford Univ., July 2004 (defense)                            |
| Mr. Medji Sama         | PhD, Stanford Univ., Feb. 2004 (reading)                            |
| Mr. Amit Kanvinde      | PhD, Stanford Univ., Jan. 2004 (defense)                            |
| Mr. Hian-Leng Chan     | PhD, Stanford Univ., Aero/Astro Engineering, June 2003 (reading)    |
| Mr. Kyle Douglas       | MS, Cornell Univ., May 2002   |
| Mr. Sean Gerolimos     | MS, Cornell Univ., Jan. 2002  |
| Mr. Andrew Cushing     | MS, Cornell Univ., Jan. 2001  |

Ms. Daun DeFrance MS, Cornell Univ., Jan. 2000  
 Ms. Megann Polaha MS, Cornell Univ., Aug. 1999

## UNIVERSITY SERVICE

### Stanford

- Organizer, Stanford CEE-GSB Workshop on Advancing Sustainable Urban Infrastructure, Feb 2023
- Department Chair, CEE Department, Sept. 2021-present
- Co-lead, HAI AI+Sustainability Working Group 2023
- Member, Stanford University Scope 3 Emissions Committee, 2022 – present.
- Senator, Stanford University Faculty Senate, 09/16 – 06/18; 09/19-06/23
- Member, New School Transition Team leading the Design/Transition of the Institutes and Inaugural Initiatives, Sept. 2021-July 2022
- Member, LASERS (Leaders of Areas of Scholarship, Engagement, and Research), 12/21-8/22.
- Steering Committee for Faculty Senate, Member, 06/21-06/22
- Member, Coordinating Committee for the Blueprint Advisory Committee for the new school, Fall 2020-Summer 2021
- Member of the Blueprint Advisory Committee for the new school, Fall 2020-Spring 2021
- Stanford Sustainability Structure Committee, Jan-Mar 2020
- Co-chair, CEE committee for redesign of CE ABET major, Sept 2019-June 2020
- Faculty moderator, Three Books (Common Reading for First Year and Transfer Students), fall 2019
- Steering Committee for Faculty Senate, Member, 06/19 – 9/20
- Member, Task Force on SoE Undergraduate Council review, 2019
- Member, TomKat Center Strategy Advisory Council, 6/18-6/20
- Member, Provost's ResX Task Force, 6/18-12/18
- Senior Fellow, Woods Institute for the Environment, Stanford, 9/14 – present
- Faculty Affiliate, Emmett Interdisciplinary Program in Environment and Resources, Stanford, 9/10 – present
- Co-Chair, Provost's Committee on Sustainability, 1/18 – 9/18
- Member, Search Committee for faculty appointment in Materials Science & Engineering, 10/17-4/18
- Member, Senate Committee on Committees, 10/17 – 06/18
- Member, Search Committee for the Dean of the School of Earth, Energy & Environmental Sciences, 4/17-9/17
- Member, Provost's Committee on Sustainability, 10/15 – 12/17
- Member, Internal Advisory Board, Office of the Vice Provost of Teaching & Learning (VPTL), Stanford, 09/16 – 12/17
- Member, Dean's Committee on the Future of the School of Engineering, 1/15 – 6/15
- Stanford Fellow, 10/13 – 7/15
- Pre-major Advisor, Stanford, 9/11 – 12/15
- Member, Governance Board, Ways of Thinking Ways of Doing Breadth Requirements, 9/12 – 9/14
- Member of Governance Board, Introduction to the Humanities Program, Stanford, 9/10 – 5/12
- Member, Provost's Committee for the Study of Undergraduate Education at Stanford, 1/10 – 1/12
- Associate Chair, Department of Civil & Environmental Engineering, 9/09 – 8/15
- Faculty Affiliate, Woods Institute for the Environment, Stanford, 9/09 – 8/14
- Member, Green Dorm Committee, 2007
- MS Admissions coordinator, Structural Engineering & Geomechanics Program, CEE, 2007-8.
- Member, CEE committee on Undergraduate Education
- Member, CEE committee on Sustainable Built Environment for Stanford CEE

**Cornell**

- Member, Provost's Task Force on Environmental Sustainability, Cornell University
- Member, CURIE Advisory Committee, Cornell College of Engineering
- Member, Co-op Advisory Committee, Cornell College of Engineering
- Member, CEE Ad-hoc committee on the future of Civil & Environmental Engineering
- Faculty Advisor, EERI student chapter

**PROFESSIONAL AFFILIATIONS**

- Urban Affairs Association (UAA)
- American Society of Civil Engineers (ASCE)
- Structural Engineers Association of Northern California (SEAONC)
- International Association of Bridge and Structural Engineers (IABSE) (former)
- BioEnvironmental Polymer Society (BEPS) (former)
- American Society of Engineering Education (ASEE) (former)
- International Federation of Concrete (fib) (former)
- American Concrete Institute (ACI) (former)
- Earthquake Engineering Research Institute (EERI) (former)

**PROFESSIONAL SERVICE**

- Review Panelist, Schmidt Science Fellows program, 2019, 2020.
- External Examiner, PhD Proposal Committee, École Polytechnique Fédérale de Lausanne, School of Architecture, Civil and Environmental Engineering, 2023
- Visiting Committee, Department Review of Civil & Environmental Engineering at USC, October 2016
- Member, Board of Directors, Structural Engineers Association of Northern California, July 2012 - 2014
- Member, Board of Directors, NEES Inc., June 2006 - 2009
- Member, ACI Committee 130, Sustainability of Concrete
- Member, ACI-ASCE Joint Committee 447, Finite Element Analysis of Reinforced Concrete Structures
- Associate Member, ACI-ASCE Joint Committee 423, Prestressed Concrete
- Member, ACI Committee 341, Lateral Response of Concrete Bridges, 1998-2008
- Advisory Board, International Association for Fracture Mechanics of Concrete Structures (IA-FraMCoS), 2004 – 2008.
- Technical Advisory Committee, EURO-C Conference 2003, 2006, 2018 "Computational Modelling of Concrete Structures"
- Local Organizing Committee, Framcos-5 Conference 2004 "Fracture Mechanics of Concrete Structures"
- Technical Session Moderator for ASCE, ACI, Euro-C, ISBBB conferences and symposia
- External Expert Reader for PhD Thesis (U. Buffalo, Apr. 2002) and PhD proposal (U. Stellenbosch, Jan. 2003)
- Member of panel, Workshop on historic preservation training for engineering students and professionals, sponsored by the National Center for Preservation Technology and Training (NCPTT), U.S. Department of the Interior.