Stanford



Sarah Billington

UPS Foundation Professor, Professor of Civil and Environmental Engineering and Senior Fellow at the Woods Institute for the Environment

CONTACT INFORMATION

- **Administrator**

  Kim Vonner - Administrative Associate

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Bio

BIO

My group's research is driven by two questions: how do built environments impact human wellbeing, and how can human-centered engineering design improve and amplify these wellbeing impacts? We examine how built features shape wellbeing across diverse populations and settings. These features range from access to nature and material choices to the use of ambient intelligence systems. With this knowledge, we develop tools, methods, and design interventions to improve wellbeing. We pursue this work through direct collaboration with those most affected, from older adults and caregivers to residents, communities, and the workers and practitioners who shape the built environment itself. In the past, my group focused on the design and evaluation of sustainable, durable construction materials including bio-based composites and ductile cement-based composites.

ACADEMIC APPOINTMENTS

- Professor, Civil and Environmental Engineering
- Senior Fellow, Stanford Woods Institute for the Environment

ADMINISTRATIVE APPOINTMENTS

- Chair, Department of Civil & Environmental Engineering, (2021- present)
- Associate Chair, Department of Civil & Environmental Engineering, (2009-2015)

HONORS AND AWARDS

- Bass University Fellow in Undergraduate Education, Stanford University (2022-present)
- UPS Foundation Professor, Stanford University (2021-present)
- Milligan Family University Fellow in Undergraduate Education, Stanford University (2012-2022)
- American Concrete Institute Fellow, American Concrete Institute (2006-present)
- ACI Structural Engineering Award, American Concrete Institute (2002)
- Fiona Li and Donald Li Excellence in Teaching Award, College of Engineering, Cornell University (2002)
- ARC Career Development Award, ASCE's Civil Engineering Research Foundation (2000)
- NSF Early Career Award, National Science Foundation (2000)

- Fulbright Fellowship, ETH, Zurich, Switzerland (1990-1991)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Society of Civil Engineers (1997 - present)
- Member, Urban Affairs Association (2022 - present)
- Member, Structural Engineers Association of Northern California (2012 - present)
- Board Member, Structural Engineers Association of Northern California (2012 - 2014)
- Board Member, Network for Earthquake Engineering Simulation, Inc. (2006 - 2009)

PROFESSIONAL EDUCATION

- PhD, University of Texas at Austin , Structural Engineering (1997)
- MSE, University of Texas at Austin , Structural Engineering (1994)
- BSE, Princeton University , Civil Engineering & Operations Research (1990)

PATENTS

- J.V. Olsson, Y.-L. Chung, R.J. Li, R. Waymouth, E. Sattely, S.L. Billington, C.W. Frank. "United States Patent 9567432 Lignin poly(lactic acid) copolymers", Leland Stanford Junior University, Feb 14, 2017
- W.V. Srubar III, S.L. Billington. "United States Patent 8759424 Coated Biodegradable Building Article", Leland Stanford Junior University, Jun 24, 2014
- W.V. Srubar III, S.L. Billington. "United States Patent 8507588 PHBV/Ground Bone Meal and Pumice Powder Engineering Biobased Composite Materials for Construction", Leland Stanford Junior University, Aug 13, 2013
- S.L. Billington, C.S. Criddle, M.C. Morse, S.J. Christian, A.J. Pieja. "United States Patent 7887893 Bacterial poly(hydroxy alkanoate) polymer and natural fiber composites", Leland Stanford Junior University, Feb 15, 2011

LINKS

- Billington Lab: https://www.billingtonlab.org

Teaching

COURSES

2025-26

- Introduction to PHD Studies in Civil and Environmental Engineering: CEE 379 (Aut)
- Seminar on Teaching for TAs: CEE 200 (Aut)

2024-25

- Introduction to PHD Studies in Civil and Environmental Engineering: CEE 379 (Aut)
- Seminar on Teaching for TAs: CEE 200 (Aut)
- Structural Design: CEE 182 (Win)

2023-24

- Engineering the Built Environment: An Introduction to Structural Engineering: CEE 80N (Win)
- Seminar on Teaching for TAs: CEE 200 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Eve Dill, Juliet Nwagwu Ume-Ezeoke, Giulia Scagliotti

Postdoctoral Faculty Sponsor

Gaspard Tissandier

Doctoral Dissertation Advisor (AC)

Antonio Skillicorn

Master's Program Advisor

Nathan Cao, Mateo Gomez Montoya, Natasha Gupta

Doctoral Dissertation Co-Advisor (AC)

Flora Xu, Daisy Yan

Postdoctoral Research Mentor

Clayton Feustel

Doctoral (Program)

Daria Fontani Herreros, Andrea Green, Laura Simandl, Antonio Skillicorn

Publications

PUBLICATIONS

- **The public gaze on housing in California: How do the designations "affordable," "sustainable," and "historic" for a housing development impact its evaluations by individuals?** *CITIES*
  Douglas, I. P., Tavakoli, A., Dayton, D., Billington, S. L.
  2026; 176
- **Complementary Pathways to Wellbeing and Pro-Environmental Behavior: Indoor and Outdoor Nature Exposure During Remote Work** *INDOOR AIR*
  Xu, J., Bloomfield, L. S. P., Sawe, N., Altaf, B., Ardoin, N. M., Murnane, E. L., Billington, S. L.
  2026; 2026 (1)
- **How much nature do we need? An exploration of dose-response relationships between indoor nature dose and building occupant well-being** *SUSTAINABLE CITIES AND SOCIETY*
  Bianchi, E., Billington, S. L.
  2025; 134
- **Impact of sustainable retrofitting on resident wellbeing: A critical review** *BUILDING AND ENVIRONMENT*
  Xu, J. F., Green, A., Jain, S., Chan, D., Billington, S. L.
  2025; 284
- **Investigating cement-based surfaces as a sustainable flooring solution to improve Ascaris Suum egg removal and inactivation in low-resource settings.** *PLoS neglected tropical diseases*
  Anderson, C. E., Hanif, S., Hernandez, J., Crider, Y., Lepech, M., Billington, S. L., Boehm, A. B., Benjamin-Chung, J.
  2025; 19 (10): e0012919
- **Impact of windows, natural materials, and diverse representations in built environments on psychological and physiological well-being: A between-subjects experiment in immersive virtual environments** *BUILDING AND ENVIRONMENT*
  Altaf, B., Tavakoli, A., Ruth, P., Green, A., Xu, J., Jain, S., Chiu, E., Bencharit, L., Murnane, E. L., Landay, J. A., Billington, S. L.
  2025; 280
- **Biophilic Design Interventions for Indoor Environments: Exploring Nature Connectedness, Well-being, and Public Acceptance Through a Within-subjects Experiment** *ENVIRONMENT AND BEHAVIOR*
  Altaf, B., Billington, S. L.
  2025
- **Nature view potential: Evaluating building occupant connection to nature** *JOURNAL OF BUILDING ENGINEERING*
  Bianchi, E., Billington, S. L.
  2025; 103

- **Black Older Adults' Perception of Using Voice Assistants to Enact a Medical Recovery Curriculum** *PROCEEDINGS OF THE ACM ON HUMAN COMPUTER INTERACTION*
  Green, A., Polite, G., Hung, I., Fessele, K. L., Billington, S. L., Landay, J. A., Cuadra, A.
  2025; 9 (2)
- **Evaluating the survival and removal ofEscherichia colifrom surfaces made with traditional and sustainable cement-based materials in field-relevant conditions.** *Applied and environmental microbiology*
  Anderson, C. E., Hernandez, J., Hanif, S., Owens, L., Crider, Y., Billington, S. L., Lepech, M., Boehm, A. B., Benjamin-Chung, J.
  2025: e0213124
- **Effects of household concrete floors on maternal and child health: the CRADLE trial - a randomised controlled trial protocol.** *BMJ open*
  Rahman, M., Jahan, F., Hanif, S., Yeamin, A., Shoab, A. K., Andrews, J. R., Lu, Y., Billington, S., Pilotte, N., Shanta, I. S., Jubair, M., Rahman, M., Kabir, et al
  2025; 15 (3): e090703
- **Psycho-behavioral responses to urban scenes: An exploration through eye-tracking** *CITIES*
  Tavakoli, A., Douglas, I. P., Noh, H., Hwang, J., Billington, S. L.
  2025; 156
- **A Human-Centered Perspective on Optimizing Ambient Assisted Living Sensing Systems for Aging in Place**
  Green, A., Cuadra, A., Billington, S. L., Dong, Y., ACM
  ASSOC COMPUTING MACHINERY.2025: 19-22
- **Nature, Buildings, and Humans: Residents' Perceptions of Well-Being in Permanent Supportive Housing** *ENVIRONMENT AND BEHAVIOR*
  Bianchi, E., Correa, M. C., Eichstaedt, J. C., Billington, S. L.
  2024
- **In their own words: A mixed-methods exploration of public perceptions of affordable housing and their connections to support** *CITIES*
  Douglas, I. P., Skillicorn, A., Chan, D., Bencharit, L., Billington, S. L.
  2024; 154
- **Effects of household concrete floors on maternal and child health - the CRADLE trial: a randomised controlled trial protocol.** *medRxiv : the preprint server for health sciences*
  Rahman, M., Jahan, F., Hanif, S., Yeamin, A., Shoab, A. K., Andrews, J. R., Lu, Y., Billington, S., Pilotte, N., Shanta, I. S., Jubair, M., Rahman, M., Kabir, et al
  2024
- **Use of crowdsourced online surveys to study the impact of architectural and design choices on wellbeing (vol 4, 780376, 2022)** *FRONTIERS IN SUSTAINABLE CITIES*
  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.
  2024; 6
- **Exploring the Connections Between Nature Exposure and Stress During COVID-19 Using Latent Profile Analysis** *ECOPSYCHOLOGY*
  Bianchi, E., Bloomfield, L. S. P., Altaf, B., Sawe, A., Murnane, E. L., Billington, S. L.
  2024
- **Impact of workplace design on perceived work performance and well-being: Home versus office** *JOURNAL OF ENVIRONMENTAL PSYCHOLOGY*
  Srivastava, C., Murnane, E. L., Billington, S. L., Samuelson, H. W.
  2024; 95
- **Effects of architectural interventions on psychological, cognitive, social, and pro-environmental aspects of occupant well-being: Results from an immersive online study** *BUILDING AND ENVIRONMENT*
  Bianchi, E., Bencharit, L., Murnane, E. L., Altaf, B., Douglas, I. P., Landay, J. A., Billington, S. L.
  2024; 253
- **Understanding How Racism and Affect Impact Public Opinions toward Affordable Housing in the United States** *JOURNAL OF PLANNING EDUCATION AND RESEARCH*
  Douglas, I. P., Chan, D., Bencharit, L., Billington, S. L.
  2024

- **Using Computer Vision and Parametric Design Software to Quantify Nature Dose in Indoor Built Environments**
  Bianchi, E., Tavakoli, A., Billington, S. L.
  edited by Turkan, Y., Louis, J., Leite, F., Ergan, S.
  AMER SOC CIVIL ENGINEERS.2024: 93-101

- **Impact of Workspace Environmental Features on Occupant Wellbeing: A Naturalistic Pilot Study**
  Xu, J., Tavakoli, A., Jorke, M. J., Ruth, P. M., Vainio, N., Schmiedmayer, P., Jain, S., Landay, J. A., Billington, S. L.
  edited by Akinci, B., Berges, M., Jazizadeh, F., Menassa, C. C., Yeoh, J.
  AMER SOC CIVIL ENGINEERS.2024: 573-582

- **Using Biophilic Illusions to Promote Nature Connectedness and Occupant Wellbeing in the Built Environment**
  Altaf, B., Billington, S. L.
  edited by Akinci, B., Berges, M., Jazizadeh, F., Menassa, C. C., Yeoh, J.
  AMER SOC CIVIL ENGINEERS.2024: 468-473

- **Deep Learning Model for Discomfort Glare Detection Based on Occupants' Facial Analysis**
  Gupta, M., Jain, S., Wienold, J., Billington, S., Andersen, M.
  edited by Akinci, B., Berges, M., Jazizadeh, F., Menassa, C. C., Yeoh, J.
  AMER SOC CIVIL ENGINEERS.2024: 1104-1111

- **Leveraging Immersive Virtual Environments for Occupant Well-Being Analysis**
  Altaf, B., Tavakoli, A., Bianchi, E., Landay, J., Billington, S. L.
  edited by Turkan, Y., Louis, J., Leite, F., Ergan, S.
  AMER SOC CIVIL ENGINEERS.2024: 85-92

- **A study of the role of indoor nature on solidarity and group identity during remote work** *BUILDING AND ENVIRONMENT*
  Bianchi, E., Bloomfield, L. S. P., Bencharit, L. Z., Altaf, B., Sawe, N. A., Murnane, E. L., Landay, J. A., Billington, S. L.
  2023; 245

- **Time perception during the pandemic: A longitudinal study examining the role of indoor and outdoor nature exposure for remote workers** *BUILDING AND ENVIRONMENT*
  Altaf, B., Bloomfield, L. S. P., Karzai, D. N., Sawe, N. A., Murnane, E. L., Bencharit, L., Landay, J. A., Billington, S. L.
  2023; 243

- **The field of human building interaction for convergent research and innovation for intelligent built environments.** *Scientific reports*
  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, et al
  2022; 12 (1): 22092

- **Ten questions concerning human-building interaction research for improving the quality of life** *BUILDING AND ENVIRONMENT*
  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, et al
  2022; 226

- **Seismic Performance of High-Performance Fiber-Reinforced Cement-Based Composite Structural Members: A Review** *JOURNAL OF STRUCTURAL ENGINEERING*
  Shao, Y., Nguyen, W., Bandelt, M. J., Ostertag, C. P., Billington, S. L.
  2022; 148 (10)

- **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*
  Douglas, I. P., Murnane, E. L., Bencharit, L., Altaf, B., Costa, J., Yang, J., Ackerson, M., Srivastava, C., Cooper, M., Douglas, K., King, J., Paredes, P. E., Camp, et al
  2022; 224

- **Impact of fiber distribution and cyclic loading on the bond behavior of steel-reinforced UHPC** *CEMENT & CONCRETE COMPOSITES*
  Shao, Y., Tich, K. L., Boaro, S. B., Billington, S. L.
  2022; 126

- **Use of Crowdsourced Online Surveys to Study the Impact of Architectural and Design Choices on Wellbeing** *Frontiers in Sustainable Cities*

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: 19

- **Poster Abstract: Human Wellbeing Responses to Real and Simulated Workplaces**
  Bianchi, E., Altaf, B., Tavakoli, A., Douglas, I. P., Landay, J. A., Billington, S. L., ACM
  ASSOC COMPUTING MACHINERY.2022: 299-300
- **Impact of UHPC Tensile Behavior on Steel Reinforced UHPC Flexural Behavior** *JOURNAL OF STRUCTURAL ENGINEERING*
  Shao, Y., Billington, S. L.
  2022; 148 (1)
- **Impact of cyclic loading on longitudinally-reinforced UHPC flexural members with different fiber volumes and reinforcing ratios** *ENGINEERING STRUCTURES*
  Shao, Y., Billington, S. L.
  2021; 241
- **Gradual Crushing of Steel Reinforced HPFRCC Beams: Experiments and Simulations** *JOURNAL OF STRUCTURAL ENGINEERING*
  Shao, Y., Hung, C., Billington, S. L.
  2021; 147 (8)
- **Effect of bubble nucleating agents derived from biochar on the foaming mechanism of poly lactic acid foams** *APPLIED SURFACE SCIENCE ADVANCES*
  Haham, H., Riscoe, A., Frank, C. W., Billington, S. L.
  2021; 3
- **Effect of Fiber Content Variation in Plastic Hinge Region of Reinforced UHPC Flexural Members**
  Pokhrel, M., Shao, Y., Billington, S., Bandelt, M. J.
  edited by Serna, P., Llano-Torre, A., Marti-Vargas, Navarro-Gregori, J.
  SPRINGER INTERNATIONAL PUBLISHING AG.2021: 1042-1055
- **Flexural performance of steel-reinforced engineered cementitious composites with different reinforcing ratios and steel types** *CONSTRUCTION AND BUILDING MATERIALS*
  Shao, Y., Billington, S. L.
  2020; 231
- **Comparison of nanocrystalline cellulose dispersion versus surface nucleation in poly (3#hydroxybutyrate#co#3#hydroxyvalerate) crystallization** *SPE Polymers*
  Haham, H., Shen, M. Y., Billington, S. L., Frank, C. W.
  2020; 1 (1)
- **Effect of Fiber Content Variation in Plastic Hinge Region of Reinforced UHPC Flexural Members** *RILEM-fib International Symposium on Fibre Reinforced Concrete*
  Pokhrel, M., Shao Yi, Billington, S., Bandelt, M. J.
  2020
- **Predicting the two predominant flexural failure paths of longitudinally reinforced high-performance fiber-reinforced cementitious composite structural members** *ENGINEERING STRUCTURES*
  Shao, Y., Billington, S. L.
  2019; 199
- **Mechanics and failure characteristics of hybrid fiber-reinforced concrete (HyFRC) composites with longitudinal steel reinforcement** *ENGINEERING STRUCTURES*
  Nguyen, W., Bandelt, M. J., Trono, W., Billington, S. L., Ostertag, C. P.
  2019; 183: 243–54
- **Simulation of Deformation Capacity in Reinforced High-Performance Fiber-Reinforced Cementitious Composite Flexural Members** *JOURNAL OF STRUCTURAL ENGINEERING*
  Bandelt, M. J., Billington, S. L.
  2018; 144 (10)

- **Finite element models of reinforced ECC beams subjected to various cyclic deformation** *COMPUTERS AND CONCRETE*
  Frank, T. E., Lepech, M. D., Billington, S. L.
  2018; 22 (3): 305–17
- **Experimental Testing of Reinforced ECC Beams Subjected to Various Cyclic Deformation Histories** *JOURNAL OF STRUCTURAL ENGINEERING*
  Frank, T. E., Lepech, M. D., Billington, S. L.
  2018; 144 (6)
- **A lignin-epoxy resin derived from biomass as an alternative to formaldehyde-based wood adhesives** *GREEN CHEMISTRY*
  Li, R., Gutierrez, J., Chung, Y., Frank, C. W., Billington, S. L., Sattely, E. S.
  2018; 20 (7): 1459–66
- **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*
  Ryan, C. A., Billington, S. L., Criddle, C. S.
  2018; 26 (4): 1715–26
- **Integrating a Digital Textbook into a Statics Course**
  Anagnos, T., Sheppard, S. D., Billington, S. L., IEEE
  IEEE.2018
- **Simulation of reinforced ductile cement-based composite beams under cyclic loads**
  Billington, S. L., Shao, Y., Frank, T. E., Bandelt, M. J., Moreno, D. M.
  edited by Meschke, G., Pichler, B., Rots, J. G.
  CRC PRESS-BALKEMA.2018: 805–12
- **4D BEYOND CONSTRUCTION: SPATIO-TEMPORAL AND LIFE-CYCLIC MODELING AND VISUALIZATION OF INFRASTRUCTURE DATA** *JOURNAL OF INFORMATION TECHNOLOGY IN CONSTRUCTION*
  Zhang, Z., Hamledari, H., Billington, S., Fischer, M.
  2018; 23: 285–304
- **Historical Analysis of Hydraulic Bridge Collapses in the Continental United States** *JOURNAL OF INFRASTRUCTURE SYSTEMS*
  Flint, M. M., Fringer, O., Billington, S. L., Freyberg, D., Diffenbaugh, N. S.
  2017; 23 (3)
- **Methodology to assess end-of-life anaerobic biodegradation kinetics and methane production potential for composite materials** *COMPOSITES PART A-APPLIED SCIENCE AND MANUFACTURING*
  Ryan, C. A., Billington, S. L., Criddle, C. S.
  2017; 95: 388-399
- **Assessment of models for anaerobic biodegradation of a model bioplastic: Poly(hydroxybutyrate-co-hydroxyvalerate).** *Bioresource technology*
  Ryan, C. A., Billington, S. L., Criddle, C. S.
  2017; 227: 205-213
- **Experimental testing of reinforced concrete and reinforced ECC flexural members subjected to various cyclic deformation histories** *Materials and Structures*
  Frank, T. E., Lepech, M. D., Billington, S. L.
  2017; 50 (5)
- **Engineering Mechanics: Statics: Modeling and Analyzing Systems in Equilibrium**
  Sheppard, S. D., Anagnos, T., Billington, S. L.
  Wiley.2017
- **Bond behavior and interface modeling of reinforced high-performance fiber-reinforced cementitious composites** *Cement and Concrete Composites*
  Bandelt, M. J., Frank, T. E., Lepech, M. D., Billington, S. L.
  2017; 83: 188-201

- **Influence of carbon feedstock on potentially net beneficial environmental impacts of bio-based composites** *JOURNAL OF CLEANER PRODUCTION*
  Miller, S. A., Billington, S. L., Lepech, M. D.
  2016; 132: 266-278
- **Impact of Reinforcement Ratio and Loading Type on the Deformation Capacity of High-Performance Fiber-Reinforced Cementitious Composites Reinforced with Mild Steel** *JOURNAL OF STRUCTURAL ENGINEERING*
  Bandelt, M. J., Billington, S. L.
  2016; 142 (10)
- **Bond behavior of steel reinforcement in high-performance fiber-reinforced cementitious composite flexural members** *MATERIALS AND STRUCTURES*
  Bandelt, M. J., Billington, S. L.
  2016; 49 (1-2): 71-86
- **Introduction Special Issue on "Biobased Construction Materials" in the Journal of Renewable Materials** *JOURNAL OF RENEWABLE MATERIALS*
  Srubar, W. V., Billington, S. L.
  2015; 3 (3): 161–62
- **Integrating durability-based service-life predictions with environmental impact assessments of natural fiber-reinforced composite materials** *RESOURCES CONSERVATION AND RECYCLING*
  Miller, S. A., Srubar, W. V., Billington, S. L., Lepech, M. D.
  2015; 99: 72-83
- **Static versus Time-Dependent Material Selection Charts and Application in Wood Flour Composites** *JOURNAL OF BIOBASED MATERIALS AND BIOENERGY*
  Miller, S. A., Lepech, M. D., Billington, S. L.
  2015; 9 (2): 273-283
- **Incorporating spatiotemporal effects and moisture diffusivity into a multi-criteria materials selection methodology for wood-polymer composites** *CONSTRUCTION AND BUILDING MATERIALS*
  Srubar, W. V., Miller, S. A., Lepech, M. D., Billington, S. L.
  2014; 71: 589-601
- **Nonlinear Constitutive Model for Anisotropic Biobased Composite Materials** *JOURNAL OF ENGINEERING MECHANICS*
  Michel, A. T., Billington, S. L.
  2014; 140 (11)
- **Design Concepts for Controlled Rocking of Self-Centering Steel-Braced Frames** *JOURNAL OF STRUCTURAL ENGINEERING*
  Eatherton, M. R., Ma, X., Krawinkler, H., Mar, D., Billington, S., Hajjar, J. F., Deierlein, G. G.
  2014; 140 (11)
- **Behavior of unreinforced masonry prisms and beams retrofitted with engineered cementitious composites** *MATERIALS AND STRUCTURES*
  Kyriakides, M. A., Billington, S. L.
  2014; 47 (9): 1573-1587
- **Mechanical Characterization and Modeling of Poly (beta-hydroxybutyrate)-co-poly(beta-hydroxyvalerate)-Alfa Fiber-Reinforced Composites** *POLYMER COMPOSITES*
  Ben Cheikh, R., Michel, A., Billington, S.
  2014; 35 (9): 1758-1766
- **Tension stiffening in reinforced high performance fiber reinforced cement-based composites** *CEMENT & CONCRETE COMPOSITES*
  Moreno, D. M., Trono, W., Jen, G., Ostertag, C., Billington, S. L.
  2014; 50: 36-46
- **Influence of temporal resolution and processing of exposure data on modeling of chloride ingress and reinforcement corrosion in concrete** *MATERIALS AND STRUCTURES*
  Flint, M., Michel, A., Billington, S. L., Geiker, M. R.
  2014; 47 (4): 729-748

- **Seismic Retrofit of Steel Moment-Resisting Frames with High-Performance Fiber-Reinforced Concrete Infill Panels: Large-Scale Hybrid Simulation Experiments** *JOURNAL OF STRUCTURAL ENGINEERING*
  Lignos, D. G., Moreno, D. M., Billington, S. L.
  2014; 140 (3)
- **Cyclic Response of Nonductile Reinforced Concrete Frames with Unreinforced Masonry Infills Retrofitted with Engineered Cementitious Composites** *JOURNAL OF STRUCTURAL ENGINEERING*
  Kyriakides, M. A., Billington, S. L.
  2014; 140 (2)
- **Simulating bond-slip effects in high-performance fiber-reinforced cement based composites under cyclic loads** *Euro-C Conference*
  Bandelt, M. J., Billington, S. L.
  CRC PRESS-TAYLOR & FRANCIS GROUP.2014: 1059–1066
- **Evaluation of Impact of Web-based Activities on Mechanics Achievement and Self-Efficacy**
  Billington, S. L., Sheppard, S. D., Calfee, R. C., Boylan-Ashraf, P. C., ASEE
  AMER SOC ENGINEERING EDUCATION.2014
- **Predicting Entrepreneurial Intent among Entry-Level Engineering Students**
  Schar, M. F., Billington, S. L., Sheppard, S. D., ASEE
  AMER SOC ENGINEERING EDUCATION.2014
- **Evaluation of a Modular Framework for Performance-Based Durability Engineering through Assessment of a Coastal Reinforced Concrete Structure** *Durability of Building Materials and Components XIII*
  Flint, M., Billington, S.
  2014
- **Biobased Materials for Sustainable Temporary Disaster-Relief Housing** *3rd International Conference on Urban Disaster REduction, Earthquake Engineering Research Institute*
  Michel, A., Srubar III, W., Billington, S.
  2014
- **Stimulation of High-Performance Fiber-Reinforced Cementitious Composites with Bond-Slip Effects** *EURO-C*
  Bandelt, M., Billington, S.
  2014
- **Evaluation of a modular framework for performance-based durability engineering through assessment of a coastal reinforced concrete structure** *Durability of Building Materials and Components XIII*
  Flint, M. M., Billington, S. L.
  2014
- **Biobased Materials for Sustainable Temporary Disaster-Relief Housing** *Third International Conference on Urban Disaster Reduction*
  Michel, A. T., Srubar, W. V., Billington, S. L.
  EERI.2014
- **A modular framework for performance-based durability engineering: From exposure to impacts** *STRUCTURAL SAFETY*
  Flint, M. M., Baker, J. W., Billington, S. L.
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