



Eric E. Matsumoto, PhD, PE

Professor

Department of Civil Engineering

College of Engineering and Computer Science

California State University, Sacramento

Sacramento, California, USA

Eric Matsumoto, PhD, PE joined the faculty of the Department of Civil Engineering at Sacramento State University in Spring 2000. Also in 2000, he received his doctorate from the University of Texas at Austin in Structural Engineering based on research to develop an innovative precast concrete bent cap system for Accelerated Bridge Construction.

Since arriving at Sac State, Dr. Matsumoto has taught undergraduate and graduate students in civil engineering and conducted applied research with dozens of students and served on oversight panels for national research projects focused on seismic precast bridge connections, precast concrete systems, and anchorage to concrete, while also contributing to ABC efforts through an FHWA International Scanning Tour on Precast Bridge Elements and Systems (PBES).

He has worked closely with industry, including Caltrans, PCI, and others in the bridge industry to implement his findings and, more recently, is preparing the next generation of civil engineers and construction managers, in collaboration with a team of industry experts, through the first Precast/Prestressed Concrete Institute PCI Foundation grant centered on precast bridge systems, called the Precast Bridge Studio, an immersion experience that was recognized with the 2022 PCI Foundation *Community Engagement Award*.

Before his doctorate, Dr. Matsumoto earned his BS (Civil Engineering, 1984) and M. Eng (Civil, 1985) from Cornell University, and served in the U.S. Air Force as an active duty officer, technical director, and research structural engineer, developing concrete protective systems subjected to nuclear and conventional weapons effects, and worked in industry as a design structural engineer at Fluor-Daniel, Inc., Last but not least, he was privileged to serve as a campus minister at UC Irvine, has been a licensed Civil Engineer since 1992, and has raised 4 children including 3 in civil engineering with his lovely wife from Taiwan, who is HS math teacher and former civil engineer.

ERIC E. MATSUMOTO, PHD, PE

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EDUCATION

University of Texas at Austin, Structural Engineering, Ph.D., 2000
Cornell University, Civil (Structural), Master of Engineering, 1985
Cornell University, Civil Engineering, B.S. with Distinction, 1984

PROFESSIONAL BACKGROUND

Professor, Department of Civil Engineering, California State University, Sacramento, 2010–present

Associate Professor, Department of Civil Engineering, California State University, Sacramento, 2004–2010

Bridge Engineer, California Department of Transportation, Division of Engineering Services, Structure Policy and Innovation/Structure Design, Sacramento, CA, 2008-present (part-time)

Bridge Engineer, California Department of Transportation, Division of Engineering Services, Structure Design, Branch 14, Sacramento, CA, 2008 (CSUS Leave of Absence)

Invited Researcher and Japan Society for Promotion of Science (JSPS) Fellow, Graduate School of Engineering, University of Tokyo, September 2007-February 2008 (Sabbatical)

Assistant Professor, Department of Civil Engineering, California State University, Sacramento, 2000–2004

Design Structural Engineer, Fluor Daniel, Inc., Irvine, CA, 1991–1993

Structural Engineer, Air Force Ballistic Systems Division, Warren Air Force Base, WY, 1989–1990

Technical Director/Research Structural Engineer, Civil Engineering Research Division, Air Force Weapons Laboratory, Kirtland Air Force Base, NM, 1985–1988

Professional Engineer (Civil), Certificate No. C49401, California, 1992-present

REPRESENTATIVE RESEARCH EXPERIENCE

Precast/Prestressed Concrete Institute (PCI) Foundation and PCI West

Principal Investigator, PCI Foundation Curriculum Grant, PBS: Precast Bridge Studio for California, July 2018–July 2022 and July 2022–July 2024 (Extension). Sponsors: PCI Foundation and PCI West. Funding: \$145,000.

National Cooperative Highway Research Program (NCHRP)/Transportation Research Board

Co-Principal Investigator, NCHRP 12-74, Development of Precast Bent Cap Systems for Seismic Regions, September 2005–June 2010. Sponsor: Transportation Research Board. Funding: \$598,916 (CSUS Co-PI: \$268, 883; 45%). PI: Jose Restrepo, University of California, San Diego.

California Department of Transportation (Caltrans)

Principal Investigator, Design of Adhesive Anchors Subjected to Cyclic Effects—Phase 1 Pullout Tests, April 2004–August 2006. Sponsor: Office of Earthquake Engineering. Funding: \$99,000.

Principal Investigator, Drill and Bond Dowel Static Tensile Strength, January 2020–Present. Oversight Panel: Caltrans Precast Committee Members. Funding: CSUS (Internal).

National Science Foundation (NSF)

Co-Principal Investigator, Acquisition of Seismic Simulator for Research and Education at a Primarily Undergraduate Institution (Major Research Instrumentation), January 2007–March 2010. Funding: \$163,400. PI: Ali Porbaha, California State University, Sacramento.

REPRESENTATIVE PUBLICATIONS, REPORTS, AND PRESENTATIONS

Matsumoto, E.E., "Precast Bridge Studio Advances Academia-Industry Connections Preparing the Next Generation of Bridge Professionals," *Aspire Magazine*, Spring 2022, pp. 48-50.

2021 Virtual Western Bridge Engineers Seminar: Design and Construction Specifications for Chemical Adhesive Anchors per AASHTO LRFD/ACI 318, September 16, 2021.

PCI Foundation Professors Seminar: Mentorship—The Key Factor toward a Vibrant Precast Studio, 2021 Precast/Prestressed Concrete Institute Foundation Professors Seminar, Woodland, CA, June 2, 2021.

Gjongecaj, Alban and Matsumoto, E.E., "Top Flange Failure Modes for California Wide Flange Girder Using Rebar and Welded Wire Details," *Proceedings of the 2017 Precast/Prestressed Concrete Institute/National Bridge Conference*, Cleveland, OH, March 2017.

Matsumoto, E.E., "Recommendations for Improved Details and Guidelines for Partial-depth Deck Panels to Accelerate Bridge Construction in California," *Proceedings of the 2016 Precast/Prestressed Concrete Institute/National Bridge Conference*, Nashville, TN, March 2016.

PCI Committee on Bridges (Seismic Subcommittee Contributing Author), *Seismic Design of Precast Concrete Bridges State-of-the-Art Report*, PCI Publication SD-01-13, Precast/Prestressed Concrete Institute, Chicago, IL (December 2013) 171 pp.

Restrepo, J.I., Tobolski, M.J., and Matsumoto, E. E., *Development of a Precast Bent Cap System for Seismic Regions*, NCHRP Report 681, National Cooperative Highway Research Program, Washington, D.C. (April 2011) 116 pp.

Matsumoto, E.E., Waggoner, M.C., Kreger, M.E., Vogel, J., Wolf, L., "Development of a Precast Concrete Bent-Cap System," *PCI JOURNAL*, V. 53, No. 3 (May-June, 2008): pp.74-99.

Matsumoto, E.E. and Van Zanen, D., "Seismic Performance of Grouted Precast Bent Cap Connection—Initial Review," *Proceedings of the 2007 Japan Association for Earthquake Engineering National Conference*, November 2007.

Matsumoto, E.E. and Gunter, B. R., "Design of Adhesive Anchors for Seismic Regions—Static Tension Tests," *Proceedings of the 2005 Caltrans Bridge Research Conference*, Sacramento, CA, November 2005.

Matsumoto, E.E., Kreger, M.E., Waggoner, M.C., Sumen, G., "Grouted Connection Tests in the Development of a Precast Bent Cap System," *Transportation Research Record 1814*, TRB, National Research Council, Washington, D.C., 2002, pp. 55-64. *Catalog of Practical Papers: Research Papers of Immediate Practical Interest to State Department of Transportation Professionals*.

- Matsumoto, E.E., Gunter, B.R., Farquhar, K.A., "Design of Adhesive Anchors Subjected to Cyclic Effects—Phase 1 Pullout Tests," Final Report, Caltrans Department of Transportation, October, 2006, 299 pp.
- Ralls, M., Tang, B., Bhide, S., Brecto, B., Calvert, E., Capers, H., Dorgan, D., Matsumoto, E.E., Napier, C., Nickas, W., Russell, H., "Prefabricated Bridge Elements and Systems in Japan and Europe," Final Report, Federal Highway Administration, FHWA-PL-05-003, March 2005, 64 pp.
- Matsumoto, E.E., Waggoner, M.C., Sumen, G., Kreger, M.E., Wood, S.L., and Breen, J.E., "Development of a Precast Bent Cap System," Research Report 1748-2, Center for Transportation Research, The University of Texas at Austin, January 2001, 372 pp.

TEACHING EXPERIENCE

<u>Course</u>	<u>Title</u>
ENGR 30	Analytic Mechanics—Statics
CE 160L	Structural Laboratory
CE 164	Reinforced Concrete Design
CM 150	Reinforced Concrete and Reinforced Masonry Design
CE 168	Prestressed Concrete Design, Precast Bridge Design (Precast Bridge Studio)
CE 190	Senior Design Project
CE 199	Special Studies in Undergraduate Research; Seismic Design of Concrete Bridges
CE 266	Advanced Reinforced Concrete Design
CE 299	Special Problems in Graduate Research
CE 500	Graduate Thesis

REPRESENTATIVE AWARDS, HONORS, AND DISTINCTIONS

2021 Community Engagement Award, Precast/Prestressed Concrete Institute (PCI) Foundation, PCI National Convention, Kansas City, March 3, 2022

Fellow, Japan Society for the Promotion of Science (Invitation Fellowship), Host: Prof. Hitoshi Shiohara, University of Tokyo, September 2007-February 2008

Member, U.S. Panel, Joint Federal Highway Administration (FHWA)/ American Association of State Highway and Transportation Officials (AASHTO) International Technology Scanning Program, Prefabricated Bridge Elements & Systems Scan Tour to Japan and Europe, April 2004

American Association of State Highway and Transportation Officials (AASHTO) President's Transportation Award for Research, "Precast Bent Cap System Research and Implementation Team," 2002

Catalog of Practical Papers: Research Papers of Immediate Practical Interest to State Department of Transportation Professionals, Transportation Research Record 1814, Transportation Research Board, 2002

American Association of State Highway and Transportation Officials 2000 High-Value Department of Transportation Research Award, Southwest Region, Texas Department of Transportation Research Project 1748, 2000