

Caroline R. Bennett, Ph.D., P.E.

John E. & Winifred E. Sharp Professor

Civil, Environmental, and Architectural Engineering
The University of Kansas
1530 W. 15th Street, 2150 Learned Hall
Lawrence, KS 66045
(785) 864-3235
crb@ku.edu

Education

Ph.D., 2006	University of Cincinnati	Cincinnati, OH
Major: Civil and Environmental Engineering, concentrating in Structural Engineering, with an emphasis on steel design and bridge applications		
B.S., 2002	University of Cincinnati	Cincinnati, OH
Major: Civil and Environmental Engineering, concentrating in Structural Engineering		

Professional Experience

Professor	2019-Present	University of Kansas KU School of Engineering Lawrence, KS
Lead, Engaged Learning Initiative	2014 - Present	University of Kansas KU School of Engineering Lawrence, KS
Associate Professor	2013 -2019	University of Kansas KU School of Engineering Lawrence, KS
Faculty Fellow	2012 - 2016	University of Kansas KU Center for Teaching Excellence Lawrence, KS
Assistant Professor	2006-2013	University of Kansas KU School of Engineering Lawrence, KS
Graduate Research & Teaching Assistant	2002 - 2005	University of Cincinnati Cincinnati, OH
Visiting Researcher	2004	University of Canterbury Christchurch, New Zealand

Student Assistant	2001-2002	University of Cincinnati Cincinnati, OH
Engineering Co-Op	1999-2001	CSX Transportation Ft. Wright, KY – Des. & Const. Jacksonville, FL – Bridge Office

Professional Licensure

- Licensed Professional Engineer in the State of Kansas.

Professional Organizations

Transportation Research Board (TRB)

Affiliate 2003-Present

- Handling Editor, TRB Transportation Research Record, 2019-Present,
- TRB Committee on Steel Bridges (AFF20). Committee Communications Coordinator, 2010-2011; 2014-2020. Member, 2006-2020.
- TRB Subcommittee on Steel Bridge Analysis (AFF20-1). Member, 2006-Present.
- TRB Committee on General Structures (AFF10). Member, 2015-Present.
- TRB Subcommittee on Traffic Structures (AFF10-1). Member, 2015-Present.

American Institute of Steel Construction (AISC)

Member 2006-Present

- TC10 – Materials and Fabrication Committee, 2020-Present.
- Committee on Research, 2020-Present.
- Selection panel for the T.R. Higgins Lectureship, 2014 and 2015.
- Modern Steel Construction Publication Advisory Board, 2016-Present

American Iron and Steel Institute (AISI) Steel Market Development Institute (SMDI) Bridge Task Force

Member 2013-Present. (Invited)

AASHTO / NSBA Collaboration

Member 2015-Present

- Task Group 8, Metallizing and Galvanizing, Member.

American Society of Civil Engineers (ASCE)

Member 1997-Present

- Associate Editor, ASCE Journal of Bridge Engineering, 2018 - Present
- Fatigue and Fracture Committee of the Technical Administrative Committee on Metals. Member 2006-2013 and 2017-Present; Chair 2008-2011, Control Group Member 2011-2013
- Structural Members Committee of the Technical Administrative Committee on Metals. Member 2006-2013, Control Group Member 2009-2011
- Steel Bridges Committee of the Technical Administrative Committee on Bridges. 2007-2013, Secretary and Control Group Member 2010-2013

- Organized and moderated ASCE / SEI Structures Congress technical sessions: 2008; 2009; 2010; 2011; 2012; 2014; 2017
- Organizing ASCE/SEI Metals Technical Activities Committee (TAC) member for 2012 ASCE Structures Congress Pre-Conference Workshop: Innovation in Design of Steel Structures: Research Needs for Global Competitiveness (sponsored by ASCE, AISC, and NSF)

ASTM International

Member 2015-Present

- Committee E08 on Fatigue and Fracture: Subcommittees E08.03, E08.04, E08.05, E08.06, E08.07, 2015-Present
- Committee A05 on Metallic-Coated Iron and Steel Products: Subcommittees A05.07 and Subcommittee A05.13, 2015-Present
- Committee A01 on Steel, Stainless Steel, and Related Alloys, 2020-Present

National Cooperative Highway Research Program (NCHRP)

- Panel for Project 48-03: Corrosion Protection for Extending Steel Bridge Service Life, Transportation Research Board (TRB). Member, 2016-2018.
- Panel for Project 10-95: Toughness Requirements for Heat-Affected Zones of Welded Structural Steels for Highway Bridges, Transportation Research Board (TRB). Member, 2013-2016.

Strategic Highway Research Program 2 (SHRP 2)

- Renewal Technical Expert Task Group (TETG) for Project R-19A: Bridges for Service Life Beyond 100 Years: Innovative Systems, Subsystems, and Components, Transportation Research Board (TRB). Member, 2010-2013. (Invited)

American Welding Society

Member 2015-Present

American Society of Engineering Education (ASEE)

Member 2005-2008; 2012-Present

International Society on the Scholarship of Teaching and Learning (ISSOTL)

Member 2013-Present

Bay View Alliance (BVA)

2015-Present

- Research Action Cluster 1 (RAC1): Course Transformation, Member, 2015-Present
- Research Action Cluster 3 (RAC3): Learning Analytics, Member, 2016-Present

American Railway Engineering and Maintenance-of-Way Association (AREMA)

Member 1999-2004

Reviewer for:

- *ASCE Journal of Structural Engineering*
- *ASCE Journal of Bridge Engineering*
- *ASCE Journal of Composites for Construction*
- *Elsevier Engineering Structures*
- *Elsevier Engineering Failure Analysis*

- Elsevier *Theoretical and Applied Fracture Mechanics*
- Elsevier *Journal of Constructional Steel Research*
- Wiley's *Computer-Aided Civil and Infrastructure Engineering*
- Canadian Society for Mechanical Engineering *Transactions*
- TRB *Transportation Research Record*
- ASTM *Journal of Testing and Evaluation*
- IOP Publishing *Measurement Science and Technology*
- IOP Publishing *Smart Materials and Structures*
- Wiley *The Structural Design of Tall and Special Buildings*

Awards & Honors

- John E. Sharp and Winifred E. Sharp Teaching Professorship, 2018–2021
- Chair's Council Professorship, 2018-2019
- University of Kansas Senior Administrative Fellow, 2016-2017
- American Institute of Steel Construction (AISC) Inaugural Early Career Award, 2016
- University of Kansas School of Engineering Miller Scholar Recipient, 2011, 2013, 2014, and 2016
- University of Kansas School of Engineering Bellows Scholar Recipient, 2012 and 2015
- Recipient of the American Iron and Steel Institute (AISI) Steel Market Development Institute (SMDI) Robert J. Dexter Memorial Lecture, 2013
- University of Kansas Center for Teaching Excellence (CTE) Faculty Fellow, 2012-2016
- University of Kansas School of Engineering Faculty Marshal, 2012
- National Effective Teaching Institute (NETI) Graduate, 2011
- University of Kansas Center for Teaching Excellence Faculty Seminar, 2007
- University of Kansas Center for Teaching Excellence Best Practices Institute Fellow, 2006
- U.S. Department of Education Graduate Assistance in Areas of National Need (GAANN) Fellow, 2002-2005

Publications

Papers

- Dellenbaugh, L, Kong, X., Al-Salih, H., Collins, W., Bennett, C., Li, J., and Sutley, E. (2020). "Development of Distortion-Induced Fatigue Crack Characterization Methodology using Digital Image Correlation," *ASCE Journal of Bridge Engineering*. 25(9). DOI (10.1061/(ASCE)BE.1943-5592.0001598)
- Al-Salih, H., Bennett, C., Matamoros, A., Collins, W., and Li, J. (2020). "Repairing Distortion-Induced Fatigue in Steel Bridges Using a CFRP-Steel Retrofit." In *Proc. Structures Congress 2020*, Reston, VA, American Society of Civil Engineers (ASCE).
- Juno, M., Al-Salih, H., Collins, W., Bennett, C., Li, J., and Sutley, E. (2020). "Investigating Lighting and Focus Limitations of Digital Image Correlation as a Bridge Inspection Tool," In *Proc. Structures Congress 2020*, Reston, VA, American Society of Civil Engineers (ASCE).
- Nasouri, R., Nguyen, K., Montoya, A., Matamoros, A., Bennett, C., & Li, J. (2019). Thermally-Induced Demands due to Galvanization of High-Mast Illumination Poles. Part I: Model Development. *Journal of Constructional Steel Research*. 162. doi:10.1016/j.jcsr.2019.105705

- Nasouri, R., Nguyen, K., Montoya, A., Matamoros, A., Bennett, C., & Li, J. (2019). Thermally-Induced Demands due to Galvanization of High-Mast Illumination Poles. Part II: Parametric Study. *Journal of Constructional Steel Research*. 159, 584-597. doi:10.1016/j.jcsr.2019.05.010
- Nguyen, K., Nasouri, R., Bennett, C., Matamoros, A., Li, J., and Montoya, A. (2019). Galvanizing-Induced Distortion in Steel Plate Girders, Part I: Effects of Girder Geometry. *Journal of Bridge Engineering, American Society of Civil Engineers (ASCE)*. 24(12). doi: 10.1061/(ASCE)BE.1943-5592.0001444.
- Nguyen, K., Nasouri, R., Bennett, C., Matamoros, A., Li, J., and Montoya, A. (2019). Galvanizing-Induced Distortion in Steel Plate Girders, Part II: Effects of Welding and Galvanizing Practices. *Journal of Bridge Engineering, American Society of Civil Engineers (ASCE)*. 24(12). doi: 10.1061/(ASCE)BE.1943-5592.0001445.
- Al-Salih, H., Juno, M., Collins, W., Bennett, C., Li, J., and Sutley, E. (2019). "Evaluation of a Digital Image Correlation Bridge Inspection Methodology on Complex Distortion Induced Fatigue Cracking," In *Procedia Structural Integrity, Elsevier*, 17(2019).
- Bridwell, L., Collins, W., Bennett, C., and Li, J. (2019). "Mechanical treatment of crack-arrest holes subjected to distortion-induced fatigue," In *Procedia Structural Integrity, Elsevier*, 17(2019).
- Taher, S., Li, J., Collins, W., and Bennett, C. (2019). UAV-based non-contact fatigue crack monitoring of steel structures," In *Proc. 12th International Workshop on Structural Health Monitoring (IWSHM 2019)*.
- Kong, X., Jeong, J., Asadollahi, P., Fu, Y., Jo, H., Bennett, C., Collins, W., Laflamme, S., and Li, J. (2019). "Wireless Soft Elastomeric Capacitor Sensor Network for Long-term Fatigue Crack Monitoring of Steel Bridges," In *Proc. 9th International Conference of Structural Health Monitoring of Intelligent Infrastructure (SHMII-9)*.
- McVey, M., Bennett, C., and Follmer-Greenhoot, A. (2019). "Impact of an Embedded Expert Model on Course Transformation in Engineering," In *Proc. of the American Society of Engineering Education (ASEE) Conference*.
- Jeong, J., Xu, J., Jo, H., Li, J., Kong, X., Collins, W., Bennett, C., and Laflamme, S. (2019). Development of Wireless Sensor Node Hardware for Large-area Capacitive Strain Monitoring. *Smart Materials and Structures, IOP Publishing*. 28(1). <https://doi.org/10.1088/1361-665X/aaebc6>
- Kong, X., Li, J., Bennett, C., Collins, W., Laflamme, S., & Jo, H. (2019). Thin-film sensor for fatigue crack monitoring in steel bridges under varying crack propagation rate and random traffic load. *Journal of Aerospace Engineering, Special Issue: Damage Detection, Assessment, and Rehabilitation of Civil Structures, ASCE*, 32(1).
- Kong, X., Li, J., Collins, W., Bennett, C., Laflamme, S., and Jo, H. (2018). Sensing distortion-induced fatigue cracks in steel bridges with capacitive skin sensor arrays. *Smart Materials and Structures, IOP Publishing*. 27(11). <https://doi.org/10.1088/1361-665X/aadbfb>
- Nguyen, K., Nasouri, A., Bennett, C., Matamoros, A., Li, J., & Montoya, A. (2018). Thermomechanical modeling of welding and galvanizing of a steel beam connection detail to examine susceptibility to cracking. *Materials Performance and Characterization, ASTM*. doi: 10.1520/MPC20170115
- Liu, H., Zhou, J., Bun, S., Simmons, G., Bennett, C., Matamoros, A., & Li, J. (2018). Effectiveness of Crack-Arrest Holes under Distortion-Induced Fatigue Loading. *Journal of Bridge Engineering, American Society of Civil Engineers (ASCE)*, 23(2).
- Nguyen, K., Nasouri, R., Bennett, C., Matamoros, A., Li, J., & Montoya, A. (2018). Distortion of steel plate girders due to hot-dip galvanizing. In *Proc. 2018 National Steel Bridge Alliance (NSBA) World Steel Bridge Symposium*.

- Kong, X., Li, J., Bennett, C., Collins, W., Laflamme, S., & Jo, H. (2018). Large-scale strain sensing approach for detecting fatigue cracks in steel bridges. In Proc. IABMAS Conference.
- McVey, M., Bennett, C., Luchies, C., Lequesne, R., Sutley, E., Fadden, M., Collins, W., & Wilson, S. (2018). Peer Mentoring for All: Investigating the Feasibility of a Curricular-Embedded Peer Mentoring Structure. In Proc. of the American Society of Engineering Education (ASEE) Conference.
- McVey, M., Luchies, C., Lequesne, R., & Bennett, C. (2018). An Investigation of the Effect of Curriculum-Embedded Peer Mentoring on Student Learning in Two Undergraduate Mechanics Courses. In Proc. of the American Society of Engineering Education (ASEE) Conference.
- Kong, X., Li, J., Collins, W., Bennett, C., Jo, H., Jeong, J., and Laflamme, S. (2018). Dense capacitive sensor array for monitoring distortion-induced fatigue cracks in steel bridges. Proc. of the SPIE Smart Structures / NDE Conference, SPIE, San Diego, CA.
- Li, J., Kong, X., Bennett, C., Collins, W., Jo, H., Jeong, J., & Laflamme, S. (2018). Sensing fatigue damage in steel bridges using strain-based skin sensor networks. In Proc. 7th World Conference on Structural Control and Monitoring. (Refereed)
- Jeong, J., Xu, J., Jo, H., Li, J., Kong, X., Collins, W., Bennett, C., & Laflamme, S. (2018). Capacitance-based wireless strain sensor development. In Proc. SPIE Smart Structures/NDE. (Refereed)
- Nasouri, R., Nguyen, K., Montoya, A., Matamoros, A., Bennett, C., Li, J., & Kinstler, T. (2018). Effect of Geometric Configuration on High-Mast Illumination Pole Demands During Galvanizing Process. In Proc. 25th International Galvanizing Conference. (Refereed)
- Kong, X., Li, J., Collins, W., Bennett, C., Laflamme, S., & Jo, H. (2017). A large-area strain sensing technology for monitoring fatigue cracks. Smart Materials and Structures, IOS Press, 26(8).
- McVey, M., Bennett, C., Kim, J., & Self, A. (2017). Impact of Undergraduate Teaching Fellows Embedded in Key Undergraduate Engineering Courses. Accepted for publication in Proc. of the American Society of Engineering Education (ASEE) Conference.
- Bennett, C., Collins, W., & McVey, M. (2017). A Tiered Mentoring Model for Deepening Student Learning Across Undergraduate and Graduate Design Courses. Accepted for publication in Proc. of the American Society of Engineering Education (ASEE) Conference.
- Kong, X., Li, J., Collins, W., Bennett, C., Laflamme, S., & Jo, H. (2017). A robust signal processing method for quantitative high-cycle fatigue crack monitoring using soft elastomeric capacitor sensors. Proc. of the SPIE Smart Structures / NDE Conference, SPIE, San Diego, CA, 2017.
- Yu, D., Bennett, C., & Matamoros, A. (2017). Retrofitting Distortion-Induced Fatigue in Skewed Girder to Cross-Frame Connections. In Proc., Structures Congress 2017, Reston, VA, American Society of Civil Engineers (ASCE).
- Kong, X., Li, J., Bennett, C., Collins, W., & Laflamme, S. (2016). Numerical simulation and experimental validation of a large-area capacitive strain sensor for fatigue crack monitoring. Measurement Science and Technology, 27. doi:10.1088/0957-0233/27/12/124009
- Kong, X., Li, J., Bennett, C., Collins, W., and Laflamme, S. (2016). "Model calibration for a soft elastomeric capacitor sensor considering slippage under fatigue cracks," Proc. of the SPIE Smart Structures / NDE Conference, SPIE, San Diego, CA, 2016.
- Lin, C., Han, J., Bennett, C., and Parsons, R. (2016). "Analysis of laterally loaded piles in soft clay considering scour hole dimensions," Ocean Engineering, 111, 461-470.
- Lin, C., Bennett, C., Han, J., and Parsons, R. (2015). "Effect of soil stress history on scour evaluation of pile-supported bridges," Journal of Performance of Constructed Facilities, American Society of Civil Engineers (ASCE). 29 (6).

- Kong, X., Li, J., Laflamme, S., and Bennett, C. (2015). "Fatigue crack monitoring using large-area, flexible capacitive strain sensors," Proc. 6th Annual Conference on Advances in Experimental Structural Engineering, University of Illinois, Urbana-Champaign, IL, August 1-2, 2015.
- Liu, H., Zhou, J., Bennett, C., Matamoros, A., and Li, J. (2015). "A Parametric Study of Crack-Arrest Holes as a Mitigation Technique for Distortion-Induced Fatigue Cracking in Steel Bridges," Proc. 16th European Bridge Engineering Conference, Edinburgh, UK, June 22-24, 2015.
- McElrath, K., Olson, Z., Bennett, C., Matamoros, A., and Li, J. (2015). "Development and Field Testing of Angles-with-Plate Retrofit Technique for Repairing Distortion-Induced Fatigue in Steel Bridges Without Deck Removal," Proc. 16th European Bridge Engineering Conference, Edinburgh, UK, June 22-24, 2015.
- Kong, X., Li, J., Laflamme, S., Bennett, C., and Matamoros, A. (2015). "Characterization of a soft elastomeric capacitive strain sensor for fatigue crack monitoring," Proc. of the SPIE Smart Structures / NDE Conference, SPIE, San Diego, CA, 2015.
- Zhou, J., Bennett, C., Matamoros, A., and Rolfe, S. (2014). "Skewed steel bridges: effects of cross-frame layout on flange lateral bending stresses during construction," Proc. 15th European Bridge Engineering Conference, London, UK, July 8-9, 2014.
- Bun, S.H., Bonet, E., Matamoros, A., Bennett, C., Rolfe, S., Barrett-Gonzalez, R. (2014). "Repair of distortion-induced fatigue damage in steel bridges using composite materials," Proc. 15th European Bridge Engineering Conference, London, UK, July 8-9, 2014.
- Lin, C., Han, J., Bennett, C., and Parsons, R. (2014). "Behavior of laterally-loaded piles under scour conditions considering stress history of undrained soft clay," Technical Note in ASCE Journal of Geotechnical and Geo-environmental Engineering, American Society of Civil Engineers (ASCE), 140 (6).
- Lin, C., Han, J., Bennett, C., and Parsons, R. (2014). "Analysis of laterally-loaded piles in sand considering scour hole dimensions," ASCE Journal of Geotechnical and Geo-environmental Engineering, American Society of Civil Engineers (ASCE), 140 (6).
- Simmons, G., Bennett, C., Matamoros, A., Barrett-Gonzalez, R., and Rolfe, S. (2014). "Improving the Fatigue Performance of Drilled Holes in Steel Bridges through Use of Mechanical Treatments," Proc. Annual Transportation Research Board Meeting, Transportation Research Board, Washington, D.C.
- Alemdar, F., Nagati, D., Matamoros, A., Bennett, C., and Rolfe, S. (2014). "Repairing Distortion-Induced Fatigue Cracks in Steel Bridge Girders using Angles-with-Plate Retrofit Techniques, Part I: Physical Simulations." Journal of Structural Engineering, American Society of Civil Engineers (ASCE), 140 (5).
- Alemdar, F., Overman, T., Matamoros, A., Bennett, C., and Rolfe, S. (2014). "Repairing Distortion-Induced Fatigue Cracks in Steel Bridge Girders using Angles-with-Plate Retrofit Techniques, Part II: Computer Simulations." Journal of Structural Engineering, American Society of Civil Engineers (ASCE), 140 (5).
- Alemdar, F., Gangel, R., Matamoros, A., Bennett, C., Barrett-Gonzalez, R., Rolfe, S., and Liu, H. (2014). "Use of CFRP Overlays to Repair Fatigue Damage in Steel Plates under Tension Loading," ASCE Journal of Composites for Construction, American Society of Civil Engineers (ASCE), 18 (4).
- Hartman, A., Bennett, C., Matamoros, A., and Rolfe, S. (2013). "Innovative Retrofit Technique for Distortion-Induced Fatigue Cracks in Steel Girder Web Gaps," Journal of Bridge Structures, IOS Press, (9), 57-71.
- Hassel, H., Bennett, C., Matamoros, A., and Rolfe, S. (2013). "Parametric Analysis of Cross-Frame Layout on Distortion-Induced Fatigue in Skewed Steel Bridges," Journal of Bridge Engineering, American Society of Civil Engineers (ASCE), 18(7), 601-611.

- Lin, C., Han, J., Bennett, C., and Parsons, R. (2013). "Case history analysis of bridge failures due to scour," Climatic Effects on Pavement and Geotechnical Infrastructure, Proc. of the International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure, Fairbanks, AK, August 4-7, 2013, American Society of Civil Engineers (ASCE), 204-216.
- Simmons, G., Bennett, C., Barrett-Gonzalez, R., Matamoros, A., and Rolfe, S. (2013). "Design, Modeling, and Testing of a Piezoelectric Impact Compressive Kinetic (PICK) Tool for Crack-Stop Hole Treatment, Proc. of the SPIE Smart Structures / NDE Conference, SPIE, San Diego, CA, March 10-14, 2013.
- Richardson, T., Alemdar, F., Bennett, C., Matamoros, A., and Rolfe, S. "Evaluation of the Performance of Retrofit Measures for Distortion-Induced Fatigue Using Finite Element Analysis," National Steel Bridge Alliance (NSBA) World Steel Bridge Symposium (WSBS) 2012 Proc., April 18-20, 2012.
- Richardson, T., Alemdar, F., Bennett, C., Matamoros, A., and Rolfe, S. (2012). "Retrofit Measures for Distortion-Induced Fatigue," Modern Steel Construction, American Institute of Steel Construction (AISC), 52 (4), 32-34.
- Alemdar, F., Matamoros, A., Bennett, C., Barrett-Gonzalez, R., and Rolfe, S. (2012). "Use of CFRP Overlays to Strengthen Welded Connections under Fatigue Loading," Journal of Bridge Engineering, American Society of Civil Engineers (ASCE), 17(3), 420-431.
- Kaan, B., Alemdar, F., Bennett, C., Matamoros, A., Barrett-Gonzalez, R., and Rolfe, S. (2012). "Fatigue Enhancement of Welded Details in Steel Bridges Using CFRP Overlay Elements," Journal of Composites for Construction, American Society of Civil Engineers (ASCE), 16(2) 138-149.
- Lin, C., Bennett, C., Han, J., and Parsons, R. (2011). "Integrated Analysis of the Performance of Pile-Supported Bridges under Scoured Conditions," Engineering Structures, Elsevier, 36, 27-38.
- Vilhauer, B., Bennett, C., Matamoros, A., and Rolfe, S. (2011). "Fatigue Behavior of Welded Coverplates Treated with Ultrasonic Impact Treatment and Bolting," Engineering Structures, Elsevier, 34, 163-172.
- Alemdar, F., Matamoros, A., Bennett, C., Barrett-Gonzalez, R., and Rolfe, S. (2011). "Improved Method for Bonding CFRP Overlays to Steel for Fatigue Repair," Proc. of the American Society of Civil Engineers (ASCE) / Structural Engineering Institute (SEI) Structures Congress, Las Vegas, NV, April 14-16, 2011.
- Hartman, A., Hassel, H., Adams, C., Bennett, C., Matamoros, A., and Rolfe, S. (2010). "Effects of lateral bracing placement and skew on distortion-induced fatigue in steel bridges," Transportation Research Record: The Journal of the Transportation Research Board, No. 2200, Dec, 62-68.
- Crain, J., Simmons, G., Bennett, C., Barrett-Gonzalez, R., Matamoros, A., and Rolfe, S. (2010). "Development of a technique to improve fatigue lives of crack-stop holes in steel bridges," Transportation Research Record: The Journal of the Transportation Research Board, No. 2200, Dec, 69-77.
- Lin, C., Bennett, C., Han, J., and Parsons, R. (2010). "Scour effects on the response of laterally loaded piles considering stress history of sand," Computers and Geotechnics, Elsevier, No. 37, Nov, 1008-1014.
- Lin, C., Bennett, C., Parsons, R., and Han, J. (2010) "Analysis of bridge response considering water-soil-pile-structure interaction under a scoured condition," Geotechnical Special Publication No. 205, Deep Foundations and Geotechnical in Situ Testing, American Society of Civil Engineers (ASCE), June, 73-80.
- Lin, C., Bennett, C., Han, J., and Parsons, R. "p-y based approach for buckling analysis of axially loaded piles under scoured conditions," Proc. of the American Society of Civil Engineers (ASCE) / Structural Engineering Institute (SEI) Structures Congress, Orlando, FL, May 12-15, 2010.

- Hassel, H., Hartman, A., Bennett, C., Matamoros, A., and Rolfe, S. "Distortion-induced fatigue in steel bridges: causes, parameters, and fixes," Proc. of the American Society of Civil Engineers (ASCE) / Structural Engineering Institute (SEI) Structures Congress, Orlando, FL, May 12-15, 2010.
- Bennett, C., Swanson, J., and Linzell, D. (2009). "Fatigue resistance of HPS-485W (70W) welded butt-splice connections," Technical note, Journal of Bridge Engineering, American Society of Civil Engineers (ASCE), 14(6), Nov/Dec, 529-536.
- Alemdar, F., Kaan, B., Bennett, C., Matamoros, A., Barrett-Gonzalez, R., and Rolfe, S. "Parameters Affecting Behavior of CFRP Overlay Elements as Retrofit Measures for Fatigue Vulnerable Steel Bridge Girders," Proc. of the Fatigue and Fracture in the Infrastructure Conference, Philadelphia, PA, July 26-29, 2009.
- Lin, C., Bennett, C., Parsons, R., and Han, J. "Evaluation of the Group Equivalent Pile Approach for Laterally Loaded Bridge Pile Foundations," Proc. of the 34th Annual Conference on Deep Foundations, Deep Foundations Institute (DFI), Kansas City, MO, October 21-23, 2009.
- Bennett, C., Lin, C., Parsons, R., and Han, J. "Evaluation of Behavior of a Laterally Loaded Bridge Pile Group Under Scour Conditions," Proc. of the American Society of Civil Engineers (ASCE) / Structural Engineering Institute (SEI) Structures Congress, Austin, TX, April 28-May 1, 2009.
- Liang, F., Bennett, C., Parsons, R., Han, J., and Lin, C. "A Literature Review on Behavior of Scoured Piles Under Bridges," Contemporary Topics in In-Situ Testing, Testing, Analysis, and Reliability of Foundations, Selected papers from the International Foundation Congress and Equipment Expo, Orlando, FL, March 15-19, 2009.
- Jones, J., Bennett, C., Matamoros, A., Rolfe, S., and Roddis, K. "Fighting fatigue in steel bridges," TR News, Transportation Research Board (TRB), Nov/Dec, Issue 259, 2008.
- Kaan, B., Barrett, R., Bennett, C., Matamoros, A., and Rolfe, S. "Fatigue enhancement of welded coverplates using carbon-fiber composites," Proc. of the American Society of Civil Engineers (ASCE) / Structural Engineering Institute (SEI) Structures Congress, Vancouver, BC, April 24-26, 2008.
- Kayser (Bennett), C., Swanson, J., and Linzell, D. (2007). Closure to "Characterization of Material Properties of HPS-485W (70W) TMCP for Bridge Applications," Journal of Bridge Engineering, American Society of Civil Engineers (ASCE), Jul/Aug, 12 (4).
- Bennett, C., Swanson, J., and Linzell, D. (2007). "Fatigue characteristics of HPS-485W (70W) continuous plate with punched holes," Journal of Bridge Engineering, American Society of Civil Engineers (ASCE), 12(1), Jan/Feb, 98-104.
- Kayser (Bennett), C., Swanson, J., and Linzell, D. (2006). "Characterization of Material Properties of HPS-485W (70W) TMCP for Bridge Girder Applications," Journal of Bridge Engineering, American Society of Civil Engineers (ASCE), 11 (1), Jan/Feb, 99-108.
- Kayser (Bennett), C., Amrine, J., and Swanson, J. "Use of In-Class Streaming of Material in Engineering," Proc. of the American Society for Engineering Education (ASEE) Annual Conference and Exposition, ASEE, June, 2005

Book Chapters

- Rehrey, G., Molinaro, M., Groth, D., Shepard, L., Bennett, C., Code, W., Reynolds, A., Squires, V., and Ward, D. (2020). "Supporting Faculty Adoption of Learning Analytics Within the Complex World of Higher Education." Advances in Analytics for Learning and Teaching, 1st Ed., Springer.
- Barrett, Gonzalez, R., Rolfe, S., Matamoros, A., and Bennett, C. (2014). "Extending the fatigue life of steel bridges using fiber-reinforced polymer (FRP) composites." Rehabilitation of Metallic Civil

Infrastructure using Fiber-Reinforced Polymer (FRP) Composites, 1st ed., Woodhead Publishing, Cambridge, UK, 269-319.

Patents

- Barrett, R., 25%; Bennett, C., 25%; Rolfe, S., 25%; and Matamoros, A., 25%. (2012). "Apparatus and Method for Enhancement of Connection Performance and Fatigue Detection," US Patent Application 12/687,840, Filed 1/14/2010, Issued 06/19/2012.
- Barrett, R., 25%; Bennett, C., 25%; Rolfe, S., 25%; and Matamoros, A., 25%. (2012). "Method for Enhancing the Fatigue Life of a Structure," US Patent Application 13/687524,847, Filed 06/15/2012, Issued 01/01/2013.

Reports

- Yu, D., Bennett, C., Li, J., Collins, W., and Sutley, E. (2020). Analytical Investigation of Saddle Connections for Overhead Sign Trusses with Respect to Strength and Fatigue Performance. Final Report to the Kansas Department of Transportation, Project KU-18-1. SM Report 144. Lawrence, KS: University of Kansas Center for Research, Inc.
- Yu, D., Bennett, C., Li, J., Collins, W., and Sutley, E. (2020). "Determination of Fatigue Resistance of Coupler Connections in Aluminum Overhead Truss Structures." Final Report to the Kansas Department of Transportation, Project KU-16-1. SM Report No. 137. Lawrence, KS: University of Kansas Center for Research, Inc.
- Senior, H., Bennett, C., Collins, W., Li, J., Ewing, M., and Fadden, M. (2019). "Dynamic Performance of Cantilevered Sign Trusses for Fatigue." Final Report to the Kansas Department of Transportation, Project KU-18-3. SM Report No. 133. Lawrence, KS: University of Kansas Center for Research, Inc.
- Li, J., Bennett, C., Collins, W., Laflamme, S., & Jo, H. (2018). Strain-based Fatigue Crack Monitoring of Steel Bridges Using Wireless Elastomeric Skin Sensors. Final Report for Transportation Pooled Fund Study TPF-5(328), October 2018.
- Zhou, J., Bennett, C., Matamoros, A., and Li, J. (2017). "Skewed Steel Bridges, Part II: Cross-Frame and Connection Design to Ensure Brace Effectiveness," Final Report to the Kansas Department of Transportation, Project KTRAN KU-13-7.
- McElrath, K., Matamoros, A., Bennett, C., Li, J., and Rolfe, S. (2015). "Repair of Distortion-Induced Fatigue Damage in Bridge No. 135-87 (043SB and 044NB) Using Newly-Developed Strengthening Schemes," Final Report to the Kansas Department of Transportation, Project C1916.
- Zhou, J., Bennett, C., Matamoros, A., Li, J., and Rolfe, S. (2015). "Skewed Steel Bridges, Part I: Effect of Cross-Frame Layout on Lateral Flange Bending Stresses," Final Report to the Kansas Department of Transportation, Project KTRAN KU-13-3.
- Liu, H., Bennett, C., Matamoros, A., Li, J., Barrett-Gonzalez, R., and Rolfe, S. (2015). "Improving Infrastructure Sustainability I: Extending Useable Lives of Steel Bridges by Halting Distortion-Induced Fatigue Crack Propagation Using Pretensioned Bolts and Washers," Final Report to the Kansas Department of Transportation, Project KTRAN KU-11-3.
- Bun, S., Bonet, E., Matamoros, A., Bennett, C., Barrett-Gonzalez, R., Li, J., and Rolfe, S. (2015). "Improving Infrastructure Sustainability II: Repairing Existing Fatigue Cracks in Steel Bridges Using CFRP Materials," Final Report to the Kansas Department of Transportation, Project KTRAN KU-11-5.
- Bennett, C., Matamoros, A., Rolfe, S., Yu, D., & Chen, Y. (2014). Repair of Skewed Steel Bridges Damaged by Distortion-Induced Fatigue. Final Report to the Mid-America Transportation Center (MATC).

- Bennett, C., Matamoros, A., Barrett-Gonzalez, R., and Rolfe, S. (2014). "Enhancement of Welded Steel Bridge Girders Susceptible to Distortion-Induced Fatigue," Final Report for Transportation Pooled-Fund Study TPF-5(189).
- Bennett, C., Matamoros, A., Rolfe, S., Yu, D., & Bun, S. H. (2013). Repair of Floorbeam-to-Stringer Connections Affected by Distortion-Induced Fatigue. Final Report to the Mid-America Transportation Center (MATC).
- Lin, C., Bennett, C., Han, J., Parsons, R., and Parr, D. (2013). "Capacity of Scour-Damaged Bridges, Part II: Integrated Analysis Program (IAP) – A Program for the Analysis of Lateral Performance of Pile-Supported Structures under Scour Conditions," Final Report to the Kansas Department of Transportation, Project KTRAN KU-10-2.
- Crain, J., Simmons, G., Bennett, C., Barrett-Gonzalez, R., Matamoros, A., and Rolfe, S. (2010). "Development of a Technique to Improve Fatigue Lives of Crack-Stop Holes in Steel Bridges" Final Report to the University of Kansas Transportation Research Institute.
- Crain, J., Simmons, G., Bennett, C., Barrett-Gonzalez, R., Matamoros, A., and Rolfe, S. (2009). "Development of a Technique to Improve Fatigue Lives of Crack-Stop Holes in Steel Bridges" Final Report to the Kansas Department of Transportation, Project KTRAN KU-09-3.
- Vilhauer, B., Bennett, C., Matamoros, A., and Rolfe, S. (2008). "Fatigue Behavior of Welded Connections Enhanced with UIT and Bolting," Final Report to the Kansas Department of Transportation, Project KTRAN, KU-07-1.
- Anderson, B., Rolfe, S., Matamoros, A., Bennett, C., and Bonetti, S. (2007). "Post Retrofit Analysis of the Tuttle Creek Bridge, BR. NO. 16-81-2.24," Final Report to the Kansas Department of Transportation, Project KTRAN, KU-01-5.
- Swanson, J., Linzell, D., Bennett C., and Lin M. (2006). "Verification of Performance and Design Criteria for High Performance Steel Bridges," Final Report to the Ohio Department of Transportation, Project FHWA/OH-2006/2.
- Kayser (Bennett), C. (2005). "High Performance Steel Bridge Girders: Performance and Design," thesis, presented to the University of Cincinnati at Cincinnati, OH, in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Publications in Review

- Al-Salih, H., Bennett, C., Matamoros, A. (In Revision). "Evaluation of Novel Combined CFRP-Steel Retrofit for Repairing Distortion-Induced Fatigue," Journal of Constructional Steel Research, Elsevier.
- Al-Salih, H., Juno, M., Collins, W., Bennett, C., Li, J. (In Review). "Application of a Digital Image Correlation Bridge Inspection Methodology on Geometrically Complex Bifurcated Distortion-Induced Fatigue Cracking." Fatigue and Fracture of Engineering Materials and Structures, Wiley.
- Liu, H. et al. (In review). "Experimental validation of patterned sensing skin for fatigue crack monitoring," Submitted to SPIE Smart Structures + Nondestructive Evaluation.
- Bennett, C., Li, J., and Matamoros, A. (In Review). "Mitigation of Weldment Cracking of Highway Steel Structures due to the Galvanizing Process," Final Report to the National Cooperative Highway Research Program (NCHRP) on Project NCHRP 10-94.
- Yu, D., Chen, Y., Bennett, C., Matamoros, A. (In Preparation). "Retrofitting Distortion-Induced Fatigue Cracking in Skewed Crossframe Connections," Engineering Structures, Elsevier.

Presentations and Lectures

Invited Presentations & Lectures

- Bennett, C., Collins, W., and Li, J. (2020, Aug). "Treating Crack Arrest Holes in Bridges to Improve Fatigue Performance." Bridge Task Force and AASHTO T-14 Committee Meeting, Online.
- Bennett, C., Collins, W., and Li, J. (2020, Jan). "Current Sign and Lighting Structure Research at the University of Kansas." AFF10(1) Subcommittee on Traffic Structures, Transportation Research Board Annual Meeting, Washington, D.C.
- Bennett, C., Li, J., Collins, W., and Laflamme, S. (2020, Jan). "Robust Wireless Skin Sensor Networks for Long-Term Fatigue Crack Monitoring of Bridges." Bridge Task Force and AASHTO T-14 Committee Meeting, Orlando, FL.
- Bennett, C. (2019, Aug). "Influence of Welding and Galvanizing Processes on Cracking Susceptibility of Steel Beams." American Iron and Steel Institute (AISI) Steel Market Development Institute (SMDI) Steel Bridge Task Force, Philadelphia, PA.
- Bennett, C. and A-Salih, H. (2019, Aug). "Adhesives in Steel Bridge Fatigue Applications." American Institute of Steel Construction (AISC) Structural Adhesives Workshop, Chicago, IL.
- Bennett, C. (2018, Dec). "Intersecting Welds – Fatigue Perspective." HDR/FHWA IDIQ Task Group on Intersecting Welds in Steel Girder Bridges, Consensus Meeting, Washington, DC.
- Bennett, C. (2019, April 25). "Maintaining Structural Integrity of Steel Structures during Galvanization." Structural Engineering Association of Kansas and Missouri (SEAKM) Annual Meeting, Wichita, KS.
- Bennett, C. (2019, April 4). "Retrofitting for Distortion-Induced Fatigue (While Maintaining Traffic)." World Steel Bridge Symposium, St Louis, MO.
- Bennett, C., Li, J., Matamoros, A., Montoya, A., Nasouri, R., & Bridwell, L. (2019, January 15). Update on NCHRP 10-94 Mitigation of Weldment Cracking of Highway Steel Structures Due to the Galvanizing Process. TRB AFF10(1) (Traffic Structures Subcommittee) Meeting, Washington D.C.
- Bennett, C., Li, J., Matamoros, A., Montoya, A., Nasouri, R., & Bridwell, L. (2018, November 15). Update on NCHRP 10-94 Mitigation of Weldment Cracking of Highway Steel Structures Due to the Galvanizing Process. AASHTO T12 (Structural Supports for Signs) Mid-Year Meeting, Valley, NE.
- Bennett, C. (2018, October 4). Red Hot Research: Future of Work at the Human-Technology Frontier in Higher Education. Red Hot Research Event, Lawrence, KS.
- Bennett, C. (2018, February 1). Women in Engineering and the School of Engineering Engaged Learning Initiative. University Women's Club, Lawrence, KS.
- Bennett, C., Collins, W., & Li, J. (2017, November 11). Steel Research at the University of Kansas. SSAB Americas, Muscatine, IA.
- Bennett, C., & Mort, M. (2016, October 21). It's Not Just About You: Making Sustainable Changes. NSF TRESTLE Annual Meeting, Boulder, CO.
- Bennett, C., & Collins, W. (2016, March 1). Practical Fatigue Retrofit for Steel Bridges. KTRAN Research Program Council, Topeka, KS.
- Bennett, C. (2016, March 1). Introduction to Fracture Mechanics. KU Professional Development Series, Kansas City, MO.
- Bennett, C., & Martin, A. (2016, January 24). Change Management: Leading a Course Transformation Effort in a Department or School. NSF TRESTLE Launch Meeting, Lawrence, KS.
- Bennett, C. (2015, October 9). Repairing Distortion-Induced Fatigue in Steel Bridges. 22nd Annual Bridge Design Workshop, Manhattan, KS.

- Bennett, C. (2013, August 1). Robert Dexter Memorial Lecture: Advances in Repairing Distortion-Induced Fatigue Cracking in Steel Bridges. American Iron and Steel Institute (AISI) Steel Market Development Institute (SMDI) Steel Bridge Task Force, Baltimore, MD.
- Bennett, C. (2013, April 8). Designing with Steel-Concrete Composite Columns. University of Kansas Professional Development Series, Kansas City, MO.
- Bennett, C., Matamoros, A., Rolfe, S., & Barrett-Gonzales, R. (2012, March 8). Research: Fatigue and Fracture. University of Kansas Structures Conference, Lawrence, KS.
- Richardson, T., Alemdar, F., Bennett, C., Matamoros, A., Rolfe, S., & Barrett, R. (2011, July 18). Fatigue Crack Control in Steel Bridges Subjected to Distortion-Induced Fatigue. Presentation to the Kansas Department of Transportation, Lawrence, KS. T. Richardson (M.S. student) and F. Alemdar (Ph.D. student) presenters
- Bennett, C., Rolfe, S., Matamoros, A., & Barrett-Gonzales, R. (2011, May 27). Research: Fatigue and Fracture Control of Steel Bridges. Presentation to University of Cincinnati Graduate Seminar, Cincinnati, OH.
- Rolfe, S., Matamoros, A., Bennett, C., & Barrett-Gonzales, R. (2011, April 1). KU/KTRAN Research: Fatigue and Fracture Control of Steel Bridges in Kansas. Presentation to the Kansas Secretary of Transportation and KTRAN Research Council, Topeka, KS.
- Hartman, A., Bennett, C., Matamoros, A., Barrett-Gonzales, R., & Rolfe, S. (2010, October 15). Distortion-Induced Fatigue in Steel Bridges: Cross-Frame Placement, Skew, and Retrofits. Presentation to the University of Cincinnati Graduate Seminar, Cincinnati, OH. Hartman (Ph.D. student) presenter
- Hassel, H., Hartman, A., Bennett, C., Matamoros, A., & Rolfe, S. (2010, March 25). Enhancing Fatigue Life of Steel Bridge through Practical Retrofit Techniques. Poster Presentation at 7th Annual Capitol Research Summit, Topeka, KS. H. Hassel (M.S. student) presenter
- Bennett, C., Swanson, J. A., & Linzell, D. G. (2006, March 1). Fatigue Characteristics of HPS-70W Connections. 51st Structural Engineering Conference, University of Kansas, Lawrence, KS.

Other Presentations & Lectures

- Collins, W., Dellenbaugh, L., Al-Salih, H., Juno, M., Bennett, C., Li, J., and Sutley, E. (2020, Feb. 21). "Development of an Automated Bridge Inspection Methodology using Digital Image Correlation." Mid-America Transportation Center Infrastructure Workshop, Lincoln, NE. [Collins presenter]
- Al-Salih, H., Collins, W., Dellenbaugh, L., Bennett, C., Li, J., and Sutley, E. (2019, Apr). "Exploring the Performance of Digital Image Correlation on Complex Loading and Test Geometries." ASCE Structural Engineering Institute Structures Congress, Orlando, FL. [Al-Salih presenter]
- Bridwell, L., Collins, W., Bennett, C., and Li, J. (2019, Sept 4). "Mechanical Treatment of Crack-Arrest Holes Subjected to Distortion-Induced Fatigue." International Conference on Structural Integrity, Madeira, Portugal. [Collins presenter]
- Al-Salih, H., Juno, M., Collins, W., Bennett, C., Li, J., and Sutley, E. (2019, Sept 2). "Evaluation of a Digital Image Correlation Bridge Inspection Methodology on Complex Distortion-Induced Fatigue Cracking. International Conference on Structural Integrity, Madeira, Portugal. [Collins presenter]
- Bennett, C. and Peterson, K. (2019). "KDOT's Recent Experience with High Mast Light Towers." AASHTO Committee on Bridges and Structures (COBS) T12 Committee, Montgomery, AL.
- Bennett, C. (2019, May 29). "Achieving Change in Civil Engineering Education: Building Community and Expertise to Change Educational Practices and Culture." ASCE Education Summit, Dallas, TX.
- Bennett, C. & Wilson, S. (2019, April 18). "Revolutionizing our Understanding of Student Success: Outcomes from the STEM Analytics Teams." KU Engineering Teaching Workshop, Lawrence, KS.

- Collins, W., Dellenbaugh, L., Al-Salih, H., Bennett, C., Li, J., and Sutley, E. (2019, Apr). "Evaluation of Digital Image Correlation for Detecting Distortion-Induced Fatigue Cracks in Steel Bridge Girders. World Steel Bridge Symposium, St Louis, Mo. [Collins presenter]
- Jeong, J., Xu, J., Jo, H., Li, J., Kong, X., Collins, W., Bennett, C., & Laflamme, S. (2018). Capacitance-Based Wireless Strain Sensor Development. SPIE Smart Structures/NDE, Denver, CO. [Refereed] [J. Jeong presenter]
- Kong, X., Li, J., Collins, W., Bennett, C., Jo, H., Jeong, J., & Laflamme, S. (2018). Dense Capacitive Sensor Array for Monitoring Distortion-Induced Fatigue Cracks in Steel Bridges. SPIE Smart Structures/NDE, Denver, CO. [Refereed] [X. Kong (Ph.D. Student) presenter]
- Bennett, C., Greenhoot, A., McVey, M., & Mort, M. (2018, October 26). Using a Change Density Index to Understand Department-Level Transformation of Teaching and Learning Culture. International Society on the Scholarship of Teaching and Learning (ISSoTL) Conference, Bergen, Norway.
- McVey, M., & Bennett, C. (2018, October 25). Engineering a New Culture: Initiatives to Advance Student and Faculty Engagement. International Society on the Scholarship of Teaching and Learning (ISSoTL) Conference, Bergen, Norway.
- Li, J., Kong, X., Bennett, C., Collins, W., Jo, H., Jeong, J., & Laflamme, S. (2018, July 22). Sensing Fatigue Damage in Steel Bridges Using Strain-Based Skin Sensor Networks. 7th World Conference on Structural Control and Monitoring, Qindao, China. [Refereed] [J. Li presenter]
- Schneider, B., Greenhoot, A., Bennett, C., & Mort, M. (2018, July 19). TRESTLE: A Model to Promote Improved STEM Education at Research Universities. Earth Educators Rendezvous, Lawrence, KS. [B. Schneider presenter]
- Kong, X., Li, J., Bennett, C., Collins, W., Laflamme, S., & Jo, H. (2018, July 10). Large-Scale Strain Sensing Approach for Detecting Fatigue Cracks in Steel Bridges. IABMAS 2018, Melbourne, Australia. [Refereed]
- Nasouri, R., Nguyen, K., Montoya, A., Matamoros, A., Bennett, C., & Li, J. (2018, June). Effect of Geometric Configuration on High-Mast Illumination Pole Demands During Galvanizing Process. 25th International Galvanizing Conference, Berlin, Germany. [A. Matamoros presenter]
- McVey, M., Bennett, C., Collins, W., Lequesne, R., Luchies, C., Wilson, S., Sutley, E., Fadden, M., & Melgares, C. (2018, June 26). Peer-Mentoring For All: Investigating the Feasibility of a Curricular-Embedded Peer Mentoring Structure. American Society of Engineering Education (ASEE) Annual Conference, Salt Lake City, UT. [Refereed] [M. McVey presenter]
- McVey, M., Bennett, C., Luchies, C., & Lequesne, R. (2018, June 25). An Investigation of the Effect of Curriculum-Embedded Peer Mentoring in Two Undergraduate Mechanics Courses. American Society of Engineering Education (ASEE) Annual Conference, Salt Lake City, UT. [Refereed] [M. McVey presenter]
- Al-Salih, H., Bennett, C., Matamoros, A., Li, J., & Collins, W. (2018, April 21). Repair of Steel Bridge Girder Subjected to Distortion-Induced Fatigue Using Both Steel Retrofit and CFRP Composites. ASCE Structures Congress, Fort Worth, TX. H. [Al-Salih (Ph.D. Student) presenter]
- Nguyen, K., Nasouri, R., Bennett, C., Matamoros, A., Li, J., & Montoya, A. (2018, April 21). Finite Element Study on a Welded Connection Detail Susceptible to Hot-Dip Galvanizing Cracking. ASCE Structures Congress, Fort Worth, TX. [K. Nguyen (Ph.D. Student) presenter]
- Bennett, C., Nguyen, K., Nasouri, R., Matamoros, A., Li, J., & Montoya, A. (2018, April 13). Distortion of Steel Plate Girders Due to Hot-Dip Galvanizing. National Steel Bridge Alliance World Steel Bridge Symposium, Baltimore, MD. [Refereed]
- Bennett, C. (2018, March 16). Structural Engineering at the University of Kansas. Engineer Research & Development Center (ERDC), Vicksburg, MS.

- Kong, X., Li, J., Bennett, C., Collins, W., Laflamme, S., & Jo, H. (2018, January 8). Thin-film Sensor for Fatigue Crack Monitoring in Steel Bridges under Varying Crack Growth Rate and Random Traffic Load. Annual Transportation Research Board (TRB) meeting, Washington, DC.
- Kong, X., Li, J., Collins, W., Bennett, C., Laflamme, S., & Jo, H. (2017). A Robust Signal Processing Method for Quantitative High-Cycle Fatigue Crack Monitoring Using Soft Elastomeric Capacitor Sensors. SPIE Smart Structures/NDE, Portland, OR. [X. Kong (Ph.D. Student) presenter]
- Bennett, C., & Young, B. (2017, October 27). Leading Engineering in Kansas. Engineer Research & Development Center (ERDC), Vicksburg, MS.
- Bennett, C. (2017, October 27). Structural Engineering Research at the University of Kansas. Engineer Research & Development Center (ERDC), Vicksburg, MS.
- Rehrey, G., Bennett, C., Holstetter, C., & Shepherd, L. (2017, October 13). The cat's out of the bag: Learning analytics, student success and the scholarship of teaching and learning. International Society on the Scholarship of Teaching and Learning (ISSoTL) Conference, Calgary, Canada.
- Bennett, C., & Greenhoot, A. (2017, October 12). The Usual Suspects? A Change Density Index to Explore the Impact of Multiple Change Initiatives. International Society on the Scholarship of Teaching and Learning (ISSoTL) Conference, Calgary, Canada.
- Zhou, J., Bennett, C., & Matamoros, A. (2017, August 21). Cross-Frame and Connection Design for Ensuring Brace Effectiveness in Skewed Steel Bridges. 9th New York City Bridge Conference, New York, NY.
- Bennett, C., Reynolds, B., & Reynolds, T. (2017, July 10). Post-occupancy evaluation to support research-based design: A meaningful approach. The Society for College and University Planning (SCUP) 52nd Annual Conference, Washington, DC.
- Kong, X., Li, J., Collins, W., Bennett, C., Laflamme, S., & Jo, H. (2017, June). A Large Area Strain Sensing Technology For Monitoring High-cycle Fatigue Cracks In Steel Bridges. Engineering Mechanics Institute Conference, San Diego, CA. X. Kong (Ph.D. Student) presenter, awarded 3rd Place Student Presentation
- Bennett, C., Collins, W., & McVey, M. (2017, June 28). A Tiered Mentoring Model for Deepening Student Learning Across Undergraduate and Graduate Design Courses. American Society of Engineering Education (ASEE) Annual Conference, Columbus, Ohio. [Refereed]
- McVey, M., Bennett, C., Kim, J., & Self, A. (2017, June 25). Impact of Peer Mentors in Undergraduate Engineering Courses. American Society of Engineering Education (ASEE) Annual Conference, Columbus, Ohio. [Refereed] [M. McVey presenter]
- Nasouri, A., Montoya, A., Matamoros, A., Nguyen, K., Bennett, C., & Li, J. (2017, June 6). Numerical Simulation of Induced Residual Stresses and Strains in the Galvanizing Process of High Mast Illumination Poles. Engineering Mechanics Institute Conference, San Diego, CA. [R. Nasouri (Ph.D. Student) presenter]
- Nguyen, K., Nasouri, A., Bennett, C., Matamoros, A., Li, J., & Montoya, A. (2017, May 18). Sensitivity of Predicted Temperature in a Fillet Weld T-Joint to Parameters Used in Welding Simulation with Prescribed Temperature Approach. Science in the Age of Experience, Chicago, IL. [K. Nguyen (Ph.D. Student) presenter]
- Nguyen, K., Nasouri, A., Bennett, C., Li, J., Matamoros, A., & Montoya, A. (2017, May 11). Thermal-mechanical modeling of welding and galvanizing of a steel beam connection detail to examine susceptibility to cracking. 17th International ASTM/ESIS Symposium on Fatigue and Fracture Mechanics (41st National Symposium on Fatigue and Fracture Mechanics), Toronto, Canada. [K. Nguyen (Ph.D. Student) presenter]

- Bennett, C., Reynolds, B., & Reynolds, T. (2017, April 24). Post-occupancy evaluation of STEM facilities: Processes and findings that will shape future facility decisions. Tradeline: College & University Science & Engineering Facilities 2017, San Diego, CA. [*Awarded highest-ranked session presentation of the conference]
- Yu, D., Bennett, C., & Matamoros, A. (2017, April 8). Retrofitting Distortion-Induced Fatigue Damaged Details in Skewed Girder to Cross-Frame Connections. ASCE Structures Congress, Denver, CO. [Yu (Ph.D. Student) Presenter]
- Nguyen, K., Nasouri, R., Bennett, C., Matamoros, A., Li, J., & Montoya, A. (2017, February). Finite Element Study on a Structural Steel Detail Susceptible to Hot-Dip Galvanized Cracking. The Society of Protective Coatings (SSPC) 2017 Conference, Tampa, FL. [K. Nguyen (Ph.D. Student) Presenter]
- Kong, X., Li, J., Bennett, C., Collins, W., & Laflamme, S. (2016). Model Calibration for a Soft Elastomeric Capacitor Sensor Considering Slippage under Fatigue Cracks. SPIE Smart Structures/NDE, Las Vegas, NV. [X. Kong (Ph.D. Student) presenter]
- Nguyen, K., Bennett, C., Matamoros, A., Li, J., Collins, W., & Fadden, M. (2016, September 22). Cracking of Steel Building Components Due to Hot-Dip Galvanizing: Review and Case Study. International Conference on Fatigue Damage of Structural Materials XI, Hyannis, MA. [K. Nguyen (Ph.D. Student) presenter]
- Bennett, C., & Matamoros, A. (2016, September 22). Performance of a Minimally-Invasive Retrofit for Repairing Distortion-Induced Fatigue in Steel Bridges. International Conference on Fatigue Damage of Structural Materials XI, Hyannis, MA. [Best poster award for macro-scale fatigue prognosis techniques]
- Bennett, C. (2016, January 27). Steel Bridge Research at KU. Bridge Task Force and AASHTO T-14 Committee Meeting, Orlando, FL.
- Kong, X., Li, J., Laflamme, S., Bennett, C., & Matamoros, A. (2015). Characterization of a Soft Elastomeric Capacitive Strain Sensor for Fatigue Crack Monitoring. SPIE Smart Structures/NDW, San Diego, CA. [J. Li Presenter]
- Yu, D., Bennett, C., & Chen, Y. (2015, November 18). Retrofit Distortion-Induced Fatigue Damaged Details in Skewed Girder to Cross-Frame Connections. ASTM, Tampa, FL. [Yu (Ph.D. Student) presenter]
- Bennett, C. (2015, October 30). Creating Sustained Institutional Change: Transforming a Traditional R1 Engineering Program to an Active-Learning, Evidence-Based Teaching Model. International Society on the Scholarship of Teaching and Learning (ISSoTL) Conference, Melbourne, Australia.
- Bennett, C., Mort, M., & Greenhoot, A. (2015, October 13). Fostering STEM Reform through Embedded Expertise and Collaborative Course Transformation. AAU STEM Network Conference, St. Louis, MO.
- Kong, X., Li, J., Laflamme, S., & Bennett, C. (2015, August). Fatigue Crack Monitoring Using Large-Area, Flexible Capacitive Strain Sensors. The Joint 6th International Conference on Advances in Experimental Structural Engineering (6AESE) and 11th International Workshop on Advanced Smart Materials and Smart Structures Technology (11ANCRiSST), Urbana, IL. [X. Kong (Ph.D. Student) presenter]
- McElrath, K., Olson, Z., Bennett, C., Matamoros, A., & Rolfe, S. (2015, June 24). Development and Field Testing of Angles-with-Plate Retrofit Technique for Repairing Distortion-Induced Fatigue in Steel Bridges without Deck Removal. 16th European Bridge Conference, Edinburgh, U.K.
- Zhou, J., Liu, H., Bennett, C., Matamoros, A., Barrett-Gonzalez, R., & Rolfe, S. (2015, June 24). A Parametric Study of Crack-Arrest Holes as a Mitigation Technique for Distortion-Induced Fatigue Cracking in Steel Bridges. 16th European Bridge Conference, Edinburgh, U.K.

- Bennett, C., Matamoros, A., Barrett-Gonzalez, R., & Rolfe, S. (2014, December 5). TPF-5(189): Enhancement of Welded Steel Bridge Girders Susceptible to Distortion-Induced Fatigue. Presentation to the Wisconsin DOT, Madison, WI.
- Bennett, C., Matamoros, A., Barrett-Gonzalez, R., & Rolfe, S. (2014, November 21). TPF-5(189): Enhancement of Welded Steel Bridge Girders Susceptible to Distortion-Induced Fatigue. Presentation to the Wyoming DOT, Cheyenne, WY.
- Bennett, C., Matamoros, A., Barrett-Gonzalez, R., & Rolfe, S. (2014, November 12). TPF-5(189): Enhancement of Welded Steel Bridge Girders Susceptible to Distortion-Induced Fatigue. Presentation to the Washington DOT, Olympia, WA.
- Bennett, C., Matamoros, A., Barrett-Gonzalez, R., & Rolfe, S. (2014, November 7). TPF-5(189): Enhancement of Welded Steel Bridge Girders Susceptible to Distortion-Induced Fatigue. Presentation to the Illinois DOT, Springfield, IL.
- Bennett, C., Matamoros, A., Barrett-Gonzalez, R., & Rolfe, S. (2014, October 30). TPF-5(189): Enhancement of Welded Steel Bridge Girders Susceptible to Distortion-Induced Fatigue. Presentation to the Kansas DOT and the Kansas Section of ASCE, Topeka, KS.
- Bennett, C., Matamoros, A., Barrett-Gonzalez, R., & Rolfe, S. (2014, October 13). TPF-5(189): Enhancement of Welded Steel Bridge Girders Susceptible to Distortion-Induced Fatigue. Presentation to the Iowa DOT, Ames, IA.
- McElrath, K., Olson, Z., Bennett, C., Matamoros, A., Li, J., & Rolfe, S. (2014, September 25). Field and Analytical Evaluation of Novel Retrofit Technique for Distortion-Induced Fatigue Damage in Steel Bridges. International Conference on Fatigue Damage of Structural Materials X, Hyannis, MA.
- Bun, S., Bonet, E., Matamoros, A., Bennett, C., Barrett-Gonzalez, R., & Rolfe, S. (2014, July 8). Repair of distortion-induced fatigue damage in steel bridges using composite materials. 15th European Bridge Conference, London, UK. Proc. 15th European Bridge Engineering Conference. [Refereed] [Matamoros presenter]
- Zhou, J., Bennett, C., Matamoros, A., & Rolfe, S. (2014, July 8). Skewed steel bridges: effects of cross-frame layout on flange lateral bending stresses during construction. 15th European Bridge Conference, London, UK. Proc. 15th European Bridge Engineering Conference. [Refereed]
- Liu, H., Bennett, C., Matamoros, A., & Rolfe, S. (2014, April 5). Evaluation of Effectiveness of Drilled Crack-Arrest Holes for Inhibiting Fatigue Crack Growth under Distortion-Induced Fatigue Loading. ASCE/SEI Structures Congress, Boston, MA. [H. Liu (Ph.D. student) presenter]
- Simmons, G., Bennett, C., Matamoros, A., Barrett-Gonzales, R., & Rolfe, S. (2014, January 15). Improving the Fatigue Performance of Drilled Holes in Steel Bridges through Use of Mechanical Treatments. Annual Transportation Research Board Meeting, Washington, DC.
- Hartman, A., Bennett, C., Matamoros, A., Rolfe, S., & Barrett-Gonzales, R. (2013, August 26). Innovative Retrofit Technique for Distortion-Induced Fatigue Cracks in Steel Girder Web Gaps. 7th New York City Bridge Conference, New York, NY.
- Bennett, C., Matamoros, A., & Rolfe, S. (2013, May 3). Repairing Distortion-Induced Fatigue in Steel Bridges. 2013 Structures Congress, American Society of Civil Engineers (ASCE), Pittsburgh, PA.
- Bennett, C., Matamoros, A., & Rolfe, S. (2013, May 3). Repairing Distortion-Induced Fatigue in Steel Bridges without Disturbing Concrete Bridge Decks. 2013 Structures Congress, American Society of Civil Engineers (ASCE), Pittsburgh, PA.
- Simmons, G., Bennett, C., Barrett-Gonzalez, R., Matamoros, A., & Rolfe, S. (2013, March). Design, Modeling, and Testing of a Piezoelectric Impact Compressive Kinetic (PICK) Tool for Crack-Stop Hole Treatment. Smart Structures / NDE, SPIE, Bellingham, WA. [R. Barrett-Gonzalez presenter]

- Richardson, T., Alemdar, F., Bennett, C., Rolfe, S., & Matamoros, A. (2012, April 19). Evaluation of the Performance of Retrofit Measures for Distortion-Induced Fatigue Using Finite Element Analysis. 2012 National Steel Bridge Alliance (NSBA) World Steel Bridge Symposium (WSBS), Grapevine, TX.
- Bennett, C., Matamoros, A., Rolfe, S., & Barrett-Gonzales, R. (2012, March 29). Update on TPF-5(189), Enhancement of Welded Steel Bridge Girders Susceptible to Distortion-Induced Fatigue. 2012 Structures Congress, American Society of Civil Engineers (ASCE), Fatigue and Fracture Committee, Chicago, IL.
- Richardson, T., Alemdar, F., Bennett, C., Matamoros, A., & Rolfe, S. (2012, March 7). Effective Retrofits for Steel Bridges Subjected to Distortion-Induced Fatigue. Poster Presentation at the 9th Annual KU Graduate Research Summit, Lawrence, KS. [T. Richardson (M.S. student) presenter]
- Bennett, C. (2012, February 20). Designing (and Redesigning) for Fatigue in Steel Structures. University of Kansas Professional Development Series, Kansas City, MO.
- Alemdar, F., Matamoros, A., Bennett, C., Barrett-Gonzales, R., & Rolfe, S. (2011, April 16). Improved Method for Bonding CFRP Overlays to Steel for Fatigue Repair. ASCE/SEI Structures Congress, Las Vegas, NV. [Matamoros presenter]
- Bennett, C., Hassel, H., Matamoros, A., & Rolfe, A. (2011, January 25). An Influence Surface Guided Approach to Understanding Steel Bridge System Behavior Under Distortion-Induced Fatigue. Annual Transportation Research Board (TRB) meeting, Washington, DC.
- Alemdar, F., Matamoros, A., Bennett, C., Barrett-Gonzales, R., & Rolfe, S. (2010, December 3). Improved Fatigue Method for Bonding CFRP Overlays to Steel for Fatigue Repair. 7th International Bridge Engineering Conference, Transportation Research Board, San Antonio, TX. [Alemdar (Ph.D. student) presenter]
- Hartman, A., Hassel, H., Adams, C., Bennett, C., Matamoros, A., & Rolfe, S. (2010, December 3). Effects of Cross-Frame Placement and Skew on Distortion-Induced Fatigue in Steel Bridges. Poster, 7th International Bridge Engineering Conference, Transportation Research Board, San Antonio, TX. [Hartman (Ph.D. student) presenter]
- Lin, C., Bennett, C., Han, J., & Parsons, R. (2010, December 3). Integrated Analysis of Performance of Pile-Supported Bridges under Scoured Conditions. 7th International Bridge Engineering Conference, Transportation Research Board, San Antonio, TX. [Lin (Ph.D. student) presenter]
- Bennett, C., Crain, J., Simmons, G., Matamoros, A., Barrett-Gonzales, R., & Rolfe, S. (2010, December 3). Development of a technique to improve fatigue lives of crack-stop holes in steel bridges. Poster, 7th International TRB Bridge Engineering Conference, San Antonio, TX.
- Lin, C., Bennett, C., Han, J., & Parsons, R. (2010, June 5). Analysis of Bridge Response Considering Water-Soil-Pile-Structure Interaction Under a Scoured Condition. GeoShanghai Conference, Shanghai, China. [Lin (Ph.D. student) presenter]
- Hartman, A., Hassel, H., Adams, C., Bennett, C., Matamoros, A., & Rolfe, S. (2010, May 15). Effects of Cross-Frame Placement and Skew on Distortion-Induced Fatigue in Steel Bridges. Presentation to the ASCE/SEI Committee on Fatigue and Fracture at the ASCE/SEI Structures Congress, Orlando, FL. [Hartman (Ph.D. student) presenter]
- Hassel, H., Hartman, A., Adams, C., Bennett, C., Matamoros, A., & Rolfe, S. (2010, May 15). Distortion-Induced Fatigue in Steel Bridges: Causes, Parameters and Fixes. ASCE/SEI Structures Congress, Orlando, FL. [H. Hassel (M.S. student) presenter]
- Lin, C., Bennett, C., Han, J., & Parsons, R. (2010, May 15). P-y based approach for buckling analysis of axially-loaded piles under scoured conditions. ASCE/SEI Structures Congress, Orlando, FL. [Lin (Ph.D. student) presenter]

- Bennett, C. (2010, April 12). Bracing for stability in steel structures. University of Kansas Professional Development Series, Kansas City, MO.
- Crain, J., Simmons, G., Bennett, C., Rolfe, S., Matamoros, A., & Barrett, R. (2010, March 31). Fatigue Enhancement of Undersized, Drilled Crack-Stop Holes. Presentation at the 7th Annual KU Graduate Research Summit, Lawrence, KS. [J. Crain (M.S. student) presenter]
- Hartman, A., Hassel, H., Bennett, C., Matamoros, A., & Rolfe, S. (2010, March 31). Effect of Lateral Bracing and Skew on Distortion-Induced Fatigue. Poster Presentation at 7th Annual KU Graduate Research Summit, Lawrence, KS. [Hartman (Ph.D. student) presenter]
- Hassel, H., Hartman, A., Bennett, C., Matamoros, A., & Rolfe, S. (2010, March 31). Enhancing Fatigue Life of Steel Bridge through Practical Retrofit Techniques. Poster Presentation at 7th Annual KU Graduate Research Summit, Lawrence, KS. [H. Hassel (M.S. student) presenter]
- Lin, C., Bennett, C., Parsons, R., & Han, J. (2009, October 23). Evaluation of the Group Equivalent Pile Approach for Laterally Loaded Bridge Pile Foundations. 34th Annual Conference on Deep Foundations, Deep Foundations Institute (DFI), Kansas City, MO. [Lin (Ph.D. student) presenter]
- Bennett, C., Alemdar, F., Kaan, B., Matamoros, A., Barrett-Gonzales, R., & Rolfe, S. (2009, July 29). Parameters Affecting Behavior of CFRP Overlay Elements as Retrofit Measures for Fatigue Vulnerable Steel Bridge Girders. Fatigue and Fracture in the Infrastructure, Philadelphia, PA.
- Bennett, C., Lin, C., Parsons, R., & Han, J. (2009, May 1). Evaluation of Behavior of a Laterally Loaded Bridge Pile Group under Scour Conditions. ASCE Structures Congress, Austin, TX.
- Liang, F., Bennett, C., Parsons, R., Han, J., & Lin, C. (2009, March 19). A Literature Review on Behavior of Scoured Piles Under Bridges. International Foundation Congress and Equipment Expo, Orlando, FL. [Liang presenter]
- Bennett, C., Kaan, B., Alemdar, F., Barrett, R., Matamoros, A., & Rolfe, S. (2008, April 24). Development of Carbon-Fiber Overlays for Fatigue Enhancement of Steel Bridge Girders. ASCE Structures Congress, Vancouver, BC, Canada.
- Bennett, C., Kaan, B., Alemdar, F., Barrett, R., Matamoros, A., & Rolfe, S. (2008, January 14). Development of Carbon-Fiber Overlays for Fatigue Enhancement of Steel Bridge Girders. Transportation Research Board (TRB) Meeting, Committee on Steel Bridges (AFF20), Washington, DC.
- Bennett, C., Vilhauer, B., Matamoros, A., & Rolfe, S. (2007, May 19). Fatigue Behavior of Welded Connections Enhanced with UIT and Bolting. Structures Congress, American Society of Civil Engineers (ASCE), Committee on Flexural and Compression Members, Long Beach, CA.
- Bennett, C., Vilhauer, B., Matamoros, A., & Rolfe, S. (2007, April 5). Fatigue Behavior of Welded Connections Enhanced with UIT and Bolting. Presentation to the Kansas Section of ASCE, Topeka, KS.
- Matamoros, A., Bennett, C., & Rolfe, S. (2007, March 14). Tuttle Creek Bridge Retrofit Research. Presentation to the State of Kansas Research Program Council, Topeka, KS. [Matamoros presenter]
- Bennett, C., Lin, M., Swanson, J. A., & Linzell, D. G. (2006). Live Load Distribution in Two HPS Bridges. Structures Congress, American Society of Civil Engineers (ASCE), St. Louis, MO.
- Bennett, C. (2006, April 27). High Performance Steel: Material Characterization and Fatigue Performance. Presentation to KU Chapters of SEAKM and EERI, Lawrence, KS.
- Kayser (Bennett), C., Amrine, J., & Swanson, J. (2005, June 15). Use of In-Class Streaming of Material in Engineering. American Society for Engineering Education (ASEE) Annual Conference and Exposition (ASEE), Portland, OR.

- Kayser, C., Lin, M., Swanson, J., & Linzell, D. (2004, May 23). Live Load Response of a Skewed HPS Bridge. Structures Congress, American Society of Civil Engineers (ASCE), Committee on Flexural and Compression Members, Nashville, TN.
- Swanson, J., & Kayser, C. (2004, April 12). Verification of Design and Performance Criteria of HPS-70W through Study of an HPS Bridge: Presentation of Findings-to-Date to ODOT.
- Swanson, J., Linzell, D., & Kayser, C. (2003, May 31). Field Verification of Construction Procedures for Skewed Steel Bridges through Monitoring of a HPS Bridge. Structures Congress, American Society of Civil Engineers (ASCE), Seattle, WA. [J. Swanson presenter]
- Kayser, C., Swanson, J., & Linzell, D. (2003, January 16). High Performance Steel Bridge Girders: Verification of Performance and Design Criteria. Steel Bridge Committee Meeting (A2C02), Transportation Research Board (TRB) Meeting, Washington, DC. [J. Swanson presenter]

Research Grants

Principal Investigator unless noted otherwise.

- “Fatigue Crack Inspection Using Computer Vision and Augmented Reality.” Funded for \$135,000 by the Transportation Research Board NCHRP IDEA Program. Project Duration: 2020-2021. Co-PI with PI: Jian Li, Co-PI: William Collins, and Co-PI: Fernando Moreu.
- “Evaluation of Vibration Mitigation Techniques for KDOT High Mast Illumination Poles.” Funded for \$117,199 by the Kansas Department of Transportation (KDOT). Project Duration: 2020-2022. Co-PI with PI: Jian Li and Co-PI: William Collins.
- “Robust Wireless Skin Sensor Networks for Long-Term Fatigue Crack Monitoring of Bridges.” Transportation Pooled Fund Study TPF-5(449). Funded for \$540,000 (KU Contract \$180,000) by Iowa DOT (Lead State), Kansas DOT, North Carolina DOT, and South Carolina DOT. Co-I with PI: Simon Laflamme (Iowa State University), PI: Jian Li (U. Kansas), Co-PI: Will Collins (U. Kansas), PI: Hongki Jo (U. Arizona), PI: Austin Downey (U. South Carolina).
- “Computational Fluid Dynamics Investigation of High Mast Illumination Poles: Influence of Light Fixtures.” Funded for \$100,000 by the Kansas Department of Transportation (KDOT). Project Duration: 2019-2021. Co-PI: William Collins; Co-PI: Jian Li.
- “Effect of Zinc on Steel Pickling Rate in the Hot-Dip Galvanizing Process.” Funded for \$10,000 by the American Galvanizers Association. Project Duration: 2019-2020. Co-PI: Edward Peltier; Co-PI: Jian Li; Co-PI: William Collins
- “Rapid Investigation of High Mast Illumination Pole Failures.” Funded for \$60,888 by the Kansas Department of Transportation (KDOT). Project Duration: 2019-2020. Co-PI: W. Collins; Co-PI: J. Li
- “Fatigue Characterization and Improvement of Cantilevered Sign Structure Box Connections.” Funded for \$155,871 by the Kansas Department of Transportation (KDOT). Project Duration: 2019-2022. Co-PI with PI: W. Collins; Co-PI: J. Li
- “Evaluation of Vibration Mitigation Techniques for KDOT Cantilever and Butterfly Sign Structures.” Funded for \$116,774 by the Kansas Department of Transportation (KDOT). Project Duration: 2019-2021. Co-PI: W. Collins; Co-PI: J. Li
- “Determination of Micropile Connection Flexural Resistance.” Funded for \$69,982 by the Kansas Department of Transportation (KDOT). Project Duration: 2019-2022. Co-PI with PI: W. Collins; Co-PI: Jie Han; Co-PI: Robert Parsons
- “Evaluation of StopCrackEX Technology for Treating Crack-Arrest Holes under Distortion-Induced Fatigue.” Funded for \$82,276 by the Kansas Department of Transportation (KDOT). Project Duration: 2018-2020. Co-PI: W. Collins; Co-PI: J. Li

- “Development of an Automated Bridge Inspection Methodology using Digital Image Correlation,” Funded for \$168,258 by the Mid-America Transportation Center (MATC), Renewable for 3 more years at \$84,129/yr. Project Duration (Yrs 1 & 2): 2017-2019. Co-PI with PI: W. Collins; Co-PI: J. Li; Co-PI: E. Sutley
- “Analytical Investigation of Saddle Connections for Overhead Sign Trusses with Respect to Strength and Fatigue Performance,” Funded for \$47,405 by the Kansas Department of Transportation (KDOT). Project Duration: 2017-2019. Co-PI with PI: J. Li; Co-PI: W. Collins; Co-PI: M. Fadden; Co-PI: E. Sutley
- “Dynamic Performance of Cantilever Sign Trusses for Fatigue,” Funded for \$62,198 by the Kansas Department of Transportation (KDOT). Project Duration: 2017-2018. Co-PI: J. Li; Co-PI: W. Collins; Co-PI: M. Ewing
- “KU STEM Analytics Program: Using Institutional Data to Advance Student Success,” Funded for \$20,000 by the American Association of Universities (AAU). Project Duration: 2017-2019. Co-PI with PI: A. Greenhoot; Co-PI M. Mort; Co-PI D. Burns-Wallace
- “Determination of Fatigue Resistance of Coupler Connection in Aluminum Overhead Truss Sign Supports,” Funded for \$144,846 by the Kansas Department of Transportation (KDOT). Project Duration: 2015-2019. Co-PI: J. Li; Co-PI: M. Fadden; Co-PI: W. Collins; Co-PI: E. Sutley
- “Collaborative Research: Deep Roots: Widespread Implementation of Community-Driven Evidence-Based Pedagogy,” Funded for \$2,066,518 by the National Science Foundation (NSF). Project Duration: 2015-2020. Co-PI with PI: A. Greenhoot; Co-PI: M. Mort
- “Strain-based Fatigue Crack Monitoring of Steel Bridges using Wireless Elastomeric Skin Sensors,” Funded for \$405,000. Transportation Pooled Fund Study. Participating Partners: KS (Lead State), MN, NC, OK, PA, and TX. Project Duration: 2015-2018. Co-PI with PI: J. Li; Co-PI: W. Collins; Co-PI: S. Rolfe.
- “Mitigation of Weldment Cracking of Highway Steel Structures Due to the Galvanizing Process,” Funded for \$499,975 by the National Cooperative Highway Research Program (NCHRP). Project Duration: 2014-2019. Co-PI: J. Li (2014-2018); Co-PI with PI: J. Li (2018-2019)
- “Development of Distortion-Induced Fatigue Retrofits for Skewed Steel Bridge Girders,” Funded for \$60,000 by the Mid America Transportation Center (MATC). Project Duration: 2013-2014. Co-PI: A. Matamoros; Co-PI: S. Rolfe
- “Repair of Floorbeam-to-Stringer Connections Affected by Distortion-Induced Fatigue,” Funded for \$72,884 by the Mid America Transportation Center (MATC). Matched with additional \$30,000 by KU TRI. Total Project Award \$102,884. Project Duration: 2012-2013. Co-PI: A. Matamoros; Co-PI: S. Rolfe
- “Skewed Steel Bridges, Part 1: Effect of Cross-Frame Layout on Lateral Flange Bending Stresses,” Funded for \$80,000 by the Kansas Department of Transportation (KDOT). Project Duration: 2012-2013. Co-PI: A. Matamoros; Co-PI: S. Rolfe
- “Skewed Steel Bridges, Part II: Cross-Frame and Connection Design to Ensure Brace Effectiveness,” Funded for \$64,000 by the Kansas Department of Transportation (KDOT). Project Duration: 2012-2013. Co-PI: A. Matamoros; Co-PI: S. Rolfe
- “Repair of Distortion-Induced Fatigue Damage in Bridge No. 135-87 (043SB and 044NB) Using Newly-Developed Strengthening Schemes,” Funded for \$122,222 by the Kansas Department of Transportation (KDOT). Project Duration: 2011-2013. Co-PI with PI: A. Matamoros; Co-PI: S. Rolfe; Co-PI: R. Barrett
- “Improving Infrastructure Sustainability I: Extending Useable Lives of Steel Bridges by Halting Distortion-Induced Fatigue Crack Propagation Using Fully-Tightened Bolts and Plate Washers,”

Funded for \$72,000 by the Kansas Department of Transportation (KDOT). Project Duration: 2010 - 2012. Co-PI: A. Matamoros; Co-PI: S. Rolfe; Co-PI: R. Barrett-Gonzalez

- “Improving Infrastructure Sustainability II: Repairing Existing Fatigue Cracks in Steel Bridges Using CFRP Materials,” Funded for \$72,000 by the Kansas Department of Transportation (KDOT). Project Duration: 2010 - 2012. Co-PI with PI: A. Matamoros; Co-PI: S. Rolfe; Co-PI: R. Barrett
- “Capacity of Scour-Damaged Bridges, Part II” Funded for \$67,500 by the Kansas Department of Transportation (KDOT). Project Duration: 2010 - 2012. Co-PI: R. Parsons; Co-PI: J. Han; Co-PI: A. Parr
- “Fatigue Enhancement of Drilled, Undersized Crack-Stop Holes,” Funded for \$60,000 by the Kansas Department of Transportation (KDOT). Project Duration: 2008 - 2009. Co-PI: R. Barrett-Gonzalez; Co-PI: A. Matamoros; Co-PI: S. Rolfe
- “Enhancement of Welded Steel Bridge Girders Susceptible to Distortion-Induced Fatigue,” Funded for \$1,040,000. Transportation Pooled Fund (TPF) Study. Matched with additional \$254,540 from KU TRI. Total Project Award \$1,294,540. Participating partners: CA, FHWA, IA, IL, KS, LA, NJ, NY, OR, PA, TN, WA, WI, WYDOT. Project Duration: 2008 - 2013. Co-PI: A. Matamoros; Co-PI: S. Rolfe; Co-PI: R. Barrett-Gonzalez
- “Capacity of Scour-Damaged Bridges,” Funded for \$94,000 by the Kansas Department of Transportation (KDOT). Project Duration: 2007 - 2010. Co-PI: R. Parsons; Co-PI S. McCabe; Co-PI: J. Han; Co-PI: A. Parr
- “Fatigue Performance of Skewed Steel Bridge Girder Systems Treated with UIT, Bolting, and Composites,” Funded for \$75,000 by the Kansas Department of Transportation (KDOT). Project Duration: July, 2007 - October, 2009. Co-PI with PI: S. Rolfe; Co-PI: A. Matamoros; Co-PI: R. Barrett
- “Fatigue Behavior of Welded Connections Enhanced with UIT and Bolting,” Funded for \$62,500 by the Kansas Department of Transportation (KDOT). Project Duration: 2006 - 2008. Co-PI: S. Rolfe; Co-PI: A. Matamoros
- “Fatigue Enhancement of Undersized Crack-Stop Holes Treated with Ultrasonic Impact Treatment,” Funded for \$82,090 by the University of Kansas Transportation Research Institute (TRI). Project Duration: 2007 - 2009. Co-PI: R. Barrett-Gonzalez, Co-PI: A. Matamoros, Co-PI: S. Rolfe
- “Composite Material Systems for Use in Bridge Applications,” Funded for \$225,000 by the University of Kansas Transportation Research Institute (TRI). 2006 - 2008. Co-PI with PI: R. Barrett; Co-PI: A. Matamoros; Co-PI: S. Rolfe

Consulting Experience

- Subconsultant to HDR, Inc. on FHWA Grant No. DTFH61-14-D-00049 “Evaluation of Steel Bridge Details for Risk of Constraint-Induced Fracture.” – 2018-2020
- Subconsultant to Parsons Brinckerhoff – “Characterization of a Curved and Skewed Bridge,” Wichita, KS - 2012

Chairperson on Examinations

Ph.D. Students

7 graduated (2 ongoing)

M.S. Students

16 graduated (3 ongoing)

Post-Doctoral Researchers and Visiting Scholars Supervised

Post-Doctoral Fellows

- Molly McVey, Ph.D., KU School of Engineering, 2016-Present
- Preetham Burugupally, Ph.D., KU School of Engineering, 2014-2015

Visiting Scholars

- Yaqin Chen, Ph.D., Xi'an University of Technology, 2014-2015

Teaching Experience

Classroom Experience

- | | | |
|---|--|---------------|
| • ARCE 101, Introduction to Architectural Engineering | Fa17, Fa18, Fa19, Fa20 | U. Kansas |
| • CE 461, Structural Analysis | Sp06, Fa06, Fa09, Fa10, Fa11, Fa12 | U. Kansas |
| • CE 562, Design of Steel Structures | Sp07, Fa07, Sp08, Sp09, Sp10, Sp11, Sp12, Sp13, Sp14, Sp15, Sp16, Sp17, Sp18, Sp19, Sp20 | U. Kansas |
| • CE 765, Advanced Steel Design I – Building Structures | Fa09, Fa10, Fa12, Fa16 | U. Kansas |
| • CE 766, Advanced Steel Design II – Bridge Structures | Fa07, Fa11, Fa13 | U. Kansas |
| • CE 767, Introduction to Fracture Mechanics | Fa15 | U. Kansas |
| • CE 810, Theory of Elastic Stability | Fa13, Fa16 | U. Kansas |
| • CE 895, Engineering Education I | Fa18 | U. Kansas |
| • CE 895, Engineering Education II – Practicum | Fa19 | U. Kansas |
| • LA&S 792, Being an Effective College Teacher | Sp13, Sp14 | U. Kansas |
| • CEE 381, Structures I | Sp05 | U. Cincinnati |
| • CEE 375, Basic Strengths of Materials | Fa05 | U. Cincinnati |

Conferences, Workshops, and Working Groups Organized and Synergistic Activities

KU Structural Engineering Conference

- Chair, 65th Annual KU Structural Engineering Conference
Lawrence, KS, March 5, 2020

- Chair, 64th Annual KU Structural Engineering Conference
Lawrence, KS, March 7, 2019
- Chair, 63rd Annual KU Structural Engineering Conference
Lawrence, KS, March 1, 2018
- Chair, 62nd Annual KU Structural Engineering Conference
Lawrence, KS, March 2, 2017
- Chair, 61st Annual KU Structural Engineering Conference
Lawrence, KS, March 3, 2016
- Chair, 60th Annual KU Structural Engineering Conference
Lawrence, KS, March 5, 2015
- Chair, 59th Annual KU Structural Engineering Conference
Lawrence, KS, March 6, 2014
- Co-Chair, 58th Annual KU Structural Engineering Conference
Lawrence, KS, March 7, 2013
- Co-Chair, 57th Annual KU Structural Engineering Conference
Lawrence, KS, March 1, 2012
- Planning Committee Member, 56th Annual KU Structural Engineering Conference
Lawrence, KS, March 3, 2011
- Planning Committee Member, 55th Annual KU Structural Engineering Conference
Lawrence, KS, March 4, 2010
- Planning Committee Member, 54th Annual KU Structural Engineering Conference
Lawrence, KS, March 5, 2009
- Planning Committee Member, 53rd Annual KU Structural Engineering Conference
Lawrence, KS, March 6, 2008
- Planning Committee Member, 52nd Annual KU Structural Engineering Conference
Lawrence, KS, March 1, 2007
- Planning Committee Member, 51st Annual KU Structural Engineering Conference
Lawrence, KS, March 2, 2006

KU School of Engineering Annual Teaching Workshop

- 2019 – Homegrown Engineering Education Teaching Workshop
- 2018 – Speaker: Dr. P.K. Imbrie, Professor, University of Cincinnati
- 2017 – Speaker: George Rehrey, Indiana University, Director of Scholarship of Teaching and Learning Program
- 2016 – Speaker: Dr. Emily Miller, Director American Association of Universities (AAU) Undergraduate STEM Education Initiative

NSF-sponsored, Transforming Education, Stimulating Teaching and Learning Excellence (TRESTLE) Annual Workshops

Institutions with attending delegates: University of Kansas, Queens University, University of British-Columbia, University of Colorado-Boulder, University of California-Davis, University of Texas-San Antonio, and the University of Indiana. <http://trestlenetwork.org/>

- Sept 2018 – Lawrence, KS (Annual TRESTLE Meeting; three days)
- Oct 2017 – Bloomington, IN (Annual TRESTLE Meeting; three days)
- Oct 2016 – Boulder, CO (Annual TRESTLE Meeting; three days)
- Jan 2016 – Lawrence, KS (Kick-off TRESTLE Meeting; three days)

Fatigue & Fracture Research Colloquia

Lawrence, KS, Jan. 2020

KU STEM Analytics Teams (STATs)

STATs working groups are convened twice a year with a goal of linking departmental teams with institutional-level learning analytics data around student learning and retention. 2017-Present

KU Postdoctoral Teaching Fellows Intracampus Network

Facilitator and Organizer, 2015

Units represented: Engineering; Geology; Film & Media Studies; Physics; Psychology

Center for Teaching Excellence (CTE) Best Practices Institute (BPI) Workshop

Organizer and session leader: 2007, 2013, 2014, and 2015

Peer Quad Program

Facilitator, 2012-2013

A structured year-long teaching inquiry and peer review program. Units represented: Urban Planning, CEAE, and Sociology

New Graduate Teaching Assistant (GTA) Conference

Session Leader, 2007-2013

University Service

Academic Systems Steering Committee (ASSC)

Chair. (2018-Present)

Executive Data Council

Member. (2018-Present)

CIO's Strategic Advisory Board

Member. (2019-Present)

Experiential Learning Working Group

Member. (2018-Present)

University-Level Search Committees

- Vice Provost for Diversity & Equity, Member. (2017)
- Vice Provost for Undergraduate Studies, Member. (2015)
- CTE Associate Director Search, Member. (2014)

Vice Provost of Undergraduate Studies' Working Group: Faculty Roles in Student Retention.

Member. (2017-2019)

Senior Vice Provost's Progression and Graduation Committee

Member. (2015-2016)

Senior Vice Provost's Course Redesign Working Group

Member. (2015-2016)

KU Tuition Advisory Committee

Member. (2014-2015)

KU University Committee on Promotion and Tenure (UCPT)

Member. (2014-2015)

KU Center for Teaching Excellence (CTE)

- CTE Advisory Board (TEAM)
Member. (2012-Present)

- CTE Faculty Fellow
(2012-2016)

Fellows are an integral part of KU CTE, helping to plan and implement the Center's activities and services. My involvement as a KU CTE Faculty included: Reviewing and voting on funding applications for KU CTE grants and programs; Consulting with faculty members from across campus interested in improving their effectiveness as a teacher; Leading an outreach program for KU CTE, including establishing a social media and blogging presence; Leading a Peer "Quad" focused on Course Redesign; Organize and participate as a leader in the Best Practices Institute (BPI) teaching workshop; Lead GTA conference sessions and follow-up sessions; Lead KU CTE Ambassador meetings; Review teaching portfolios for colleagues across the KU campus.

- CTE Departmental Ambassadors Program
Ambassador. (2006-2013)

KU University Planning and Resource Committee

Member. (2013-Present) - The UCPR participates in the University's planning process by communicating with the Provost and Provost's staff on matters of capital planning, infrastructure, IT resources, and sustainability; monitors the University's budget.

New Faculty Lunch Colloquia

Panel Member. (2014)

School of Engineering Service

Engaged Learning Initiative

Lead. (2014-Present)

Responsibilities have included: Supervising and mentoring the School of Engineering Postdoctoral Teaching Fellow tasked with aiding faculty in course transformation activities; Overseeing the engineering faculty Teaching Working Group; Planning and implementation of the Engineering Undergraduate Teaching Fellows (UGTF) Program; Incentivizing course transformation activities in the School of Engineering; Overseeing prioritization and scheduling of engineering courses in active-learning classrooms; Measuring course transformation progress and effectiveness; Securing resources to support faculty course transformation efforts and effective teaching; Helping faculty transition into using new active learning spaces.

School-Level Search Committees

- Dean of Engineering. Search Member. (2018)
- Postdoctoral Teaching Fellow, Search Chair. (2015-2016)
- School of Engineering SELF Fellowship Director, Search Member. (2012)
- SELF Fellowship Senior Coordinator Search Committee, Search Member. (2012)

School of Engineering Sabbatical Committee

Member. (2015)

SELF Fellowship Faculty Committee

Member. (2007-2014)

Annually review applications for the undergraduate SELF fellowship (freshmen and sophomore); participate in the selection and interview processes for freshmen and sophomore applications. Participate in annual SELF Fellowship events.

LEEP2 Classroom Design Committee

Member. (2012-2015)

LEEP2 Advisory Group – Design of High Bay Facility

Member. (2012-2015)

American Society of Engineering Education (ASEE) ad hoc regional conference planning committee.

Member. (2010)

Engineering Senate Engineering Library Committee

Member. (2006-2008)

Department of Civil, Environmental, and Architectural Engineering Service

CEAE Retention Committee

Chair. (2018-Present)

Member. (2013-Present)

CEAE Architectural Engineering (ARCE) Steering Committee

Member. (2015-2019)

KU Structural Engineering Conference, Conference Chair

Conference Chair. (2014-Present)

Conference Co-chair. (2012-2013)

Committee Member. (2006-Present)

Session Moderator. (2006-Present)

ASCE Student Steel Bridge Competition

Faculty Advisor. (2006-2017; 2018-Present)

CEAE ABET Committee

Member. (2013-Present)

Department-Level Search Committees

- CEAE Faculty Search Committee – 3 structures positions, Search Chair. (2014-2015)
- CEAE Faculty Search Committee – 4 structures positions, Search Member. (2012-2013)
- CEAE Faculty Search Committee – Department Chair, Search Member. (2012-2013)

Professional Development Series Presentations

Presenter. (2007, 2010, 2012, 2013, 2016)

CEAE Computing Committee

Member. (2013-2016)

CEAE Scholarship Committee

Member. (2007-2009)

CEAE Graduate Studies Committee

Member. (2007-2009)

CEAE ABET PLAN Ad Hoc Committee

Member. (2006)

Last Revision Date: October 13, 2020