Timothy E. Huff, P.E., Ph.D.
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CURRENT POSITION

- Associate Professor - CEE, Tennessee Tech University, 2024-Present

EDUCATION and LICENSURE

- Licensed Professional Engineer, Tennessee
- Ph.D. in Civil Engineering, August, 2013, UT-Knoxville, Dissertation: ***Isolation as a Seismic Design Strategy for Bridges in the New Madrid Seismic Zone***
- M.S. in Mathematics, Tennessee State University, December 2006
- M.S. in Civil Engineering, Tennessee Tech University, August 1985
- B.S. in Civil Engineering, ***Magna Cum Laude***, Tenn. Tech, March 1984
- 2-month practicum in Appropriate Technology for developing countries, May 1997
- Chi Epsilon, Tau Beta Pi, Kappa Mu Epsilon, and Mortar Board Honor Societies
- Vice-President, TTU ASCE Student Chapter, 1983-1984

PREVIOUS EXPERIENCE

- Consultant – America's River Crossing: I-55 over the Mississippi River
- Assistant Professor, TTUCEE, August 2018 – August 2024
- Lecturer, TTU CEE, August 2017 – August 2018
- TDOT Structures CE Manager (2006-2017), Engineer (2001-2006)
- Interstate 40 over TN State Route 5 – Seismic Isolation System Design
- SR-26 over Center Hill Lake - plate girder, deep drilled shafts
- I-55 over Mallory Avenue in Shelby County – curved steel plate girder
- Demonbreun Street Viaduct over CSX Railroad & 11th Avenue
- Interstate 40 Flyover at White Bridge Road, curved steel girder
- Maury County Emergency Slide Repair Bridge
- Seismic pushover analysis of various structures
- Authored the TDOT Seismic Design Manual
- 2016 Govt. Engineer of the Year, 2024 Engineer of the Year, TSPE

TECHNICAL ACTIVITIES

- Associate, ASCE 41 ***Seismic Retrofit of Existing Buildings*** Committee
- Associate Editor, ASCE ***Practice Periodical on Structural Design and Construction***
- Educator Membership, AISC
- Educator Membership, ACI
- Member of TRB AKB50, Standing Committee on ***Seismic Design and Performance of Bridges***
- NCHRP 12-114, Seismic Site Response w/ Pore Water Pressure Generation
- NCHRP 12-116A, Proposed AASHTO Specs Pile Design Downdrag
- NCHRP 12-106, Guidelines for Performance-Based Seismic Bridge Design
- NCHRP 20-05, Topic 42-03, Site-Specific Earthquake Ground Motions
- NCHRP 12-125, Earthquake Induced Bridge Displacements
- NCHRP 12-105, Seismic Performance of ABC Connections
- NCHRP 20-7 (task 262-M2), Project Working Group, Seismic Isolation Design
- Consultant, various firms in Tennessee for the design of bridges
- PI, ***TDOT RES2023-04, Best Practices – Pipe Piles***
- Co-P.I., ***TDOT RES2022-02, Improved Stringer Rating in GSF Bridges***
- Co-PI, ***TDOT RES2024-04, Development of UHPC for TN Bridges***
- Co-PI, ***TDOT Project OTH2023-01B-2, Site-Specific Seismic Ground Motion for Bridge Design in Tennessee***
- PI, ***TDOT Project OTH2023-01B-4, Performance-Based Seismic Design of Bridges in Tennessee***

PUBLICATIONS & PRESENTATIONS

Huff, Tim; ***Extreme Loading of Structu***res; CRC Press / Taylor and Francis; ISBN 978-1032885483; April, 2025.

Huff, Tim; Vandenberge, Daniel; Ramon, Leonardo; ***Long Period Transition for Subduction Earthquake Spectra***; ASCE Practice Periodical on Structural Design and Construction; accepted for publication, December 2023.

Huff, Tim; Craig Henderson, Matt Yarnold, Andrew Moore, and Rebecca Hayworth; ***Improved Stringer Rating in Girder-Stringer-Floorbeam Bridges,*** ASCE Practice Periodical on Structural Design and Construction; accepted for publication, August 2023.

Seismic Design of Bridges in the New Madrid Seismic Zone, presentation at the ACI National Convention for the **session:** ***Performance-Based Seismic Design of Bridges in the Central and Eastern United States,*** Boston MA; October 2023 (invited speaker presentation)

The Future of Seismic Bridge Design, TRB Annual Meeting, Lectern Session Panelist, Washington, DC, January, 2023; invited speaker presentation

Huff, Tim; **LRFD Bridge Design: Fundamentals and Applications**, CRC Press, February 24, 2022; ISBN-13: 978-1032208367.

Huff, Tim; **A Practical Course in Advanced Structural Design**; CRC Press, April 1, 2021; ISBN-13: 978-0367746667.

Alhassan, Moatez; Huff, Tim; VandenBerge, Daniel R.; ***Effects of Rayleigh-Damping Approach on the Elastic and Inelastic Seismic Performance of Fixed- and Flexible-Base Structural Systems***; Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 26(3), May, 2021.

Henderson, Craig; Huff, Tim; Bouton, Gary; ***Structural Observations and Tornado Damage Mitigation Concepts: March 2020 Tennessee Tornadoes***; Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 26(2), February, 2021.

Huff, Tim; ***The Importance of Target Spectrum Basis in Earthquake Ground Motion Scaling***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 25(1), February, 2020.

Huff, Tim; ***Inelastic Seismic Displacement Amplification for Bridges: Dependence upon Various Intensity Measures***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 23(1), February 2018.

Kidwell, Taylor; Kerley, Rebekah; Henderson, R. Craig; Huff, Tim; ***Elastic and Inelastic Behavior of Precast Concrete Piles and Cast-in-Shell Steel Piles in Reinforced Concrete Caps***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); January 4, 2018.

Huff, Tim; Shoulders, Jonathan; ***Partial Isolation of a Bridge on Interstate 40 in the New Madrid Seismic Zone***; 34th International Bridge Conference, National Harbor, Maryland, June 4-8, 2017.

Yarnold, Matt; Alexander, Justin; Huff, Tim; ***Structural Health Monitoring of the Hernando De Soto Bridge***; 34th International Bridge Conference, National Harbor, Maryland, June 4-8, 2017.

Pezeshk, Shahram; Yarahmadi, Arash; Huff, Tim; ***Assessment of Site Conditions and Improvement of Ground-Motion Prediction Equations in the Central United States***; Tennessee Department of Transportation, Research Project ED2013_17; 2016.

Hajihashemi, Ali; Pezeshk, Shahram; and Huff, Tim, ***A Comparison of Nonlinear Static Procedures and Modeling Assumptions for Seismic Design of Ordinary Bridges***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000309, 04016022, November 2016.

Huff, Tim, ***Structural Demand on Bridges Subjected to Bidirectional Ground Motions***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000299, 04016007. August, 2016.

Huff, Tim; ***Issues in the Prediction of Inelastic Behavior in Bridges during Earthquakes***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000289, 04016007. February, 2016.

Huff, Tim; ***Estimating Residual Seismic Displacements in Bi-Linear Oscillators***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000282, 04016003, January, 2016.

Pezeshk, S.; Elsayed, A.; Huff, T.; and Pezeshk, S. M.; ***Site Specific Seismic Analysis at the Vicinity of a Bridge Located Within the Mississippi Embayment***, Eastern Section Seismological Society of America, Annual Meeting, 2015.

Huff, Tim; Pezeshk, Shahram; ***Inelastic Displacement Spectra for Bridges Using the Substitute-Structure Method***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000279; December 30, 2015.

Huff, Tim; ***Partial Isolation as a Seismic Design Strategy for Pile Bent Bridges in the New Madrid Seismic Zone***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000277; December 30, 2015.

Huff, Tim; ***Seismic Displacement Estimates for Bridges in the New Madrid Seismic Zone***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000269; December 30, 2015.

Huff, Tim; ***Spanning the Wolf River Wetlands***, Aspire - The Concrete Magazine, fall 2014, pp. 14-17.

Huff, Timothy; Wayne Seger and Ed Wasserman; ***Tennessee State Route 385 over the Wolf River Wetlands - A Precast Solution***; PCI National Bridge Conference, September 2014.

Huff, Timothy; ***Isolation of Bridges in the New Madrid Seismic Zone***; 7th National Seismic Conference on Bridges and Highways, May 2013, Oakland, California.

Huff, Timothy; ***Ground Motion Selection and Modification for Nonlinear Time History Analysis of Isolated Bridges in the NMSZ,*** Poster Session, EERI Annual meeting, April 2012, Memphis, TN.

Wasserman, E. P., Pate, W. H. and Timothy Huff; ***Evaluation of Best Practices with High Performance Steel for Bridges***, presented at the Third conference on Advanced Materials for Construction of Bridges, Buildings, and other Structures, September 7-12, 2003, Davos, Switzerland.

Jones, W. D., Fricke, K. E. and Timothy Huff; ***Out-of-Plane Testing of a Hollow Clay Tile Wall Panel in Building 9207 at the Y12 Plant***; Lockheed Martin Energy Systems, 1993.