CURRICULUM VITAE

NAME Jay A. Puckett

CURRENT POSITION: Charles W. and Margre H. Durham Professor, Director Durham School for Architectural Engineering and Construction

EDUCATION

Degree	Year	University
PhD	1983	Colorado State University
MS	1980	Colorado State University
BS	1978	University of Missouri

EMPLOYMENT

Position	Organization	Dates
Director	University of Nebraska	2015 - present
Associate Dean	University of Wyoming	2011 - 2014
V.O. Smith Professor	University of Wyoming	2007-2015
Professor and Head	University of Wyoming	2002-2007
Professor	University of Wyoming	1992-2002
Associate Professor	University of Wyoming	1987-1992
Assistant Professor	University of Wyoming	1983-1987

HONORS AND AWARDS

Charles W. and Margre H. Durham Professor, Durham School, University of Nebraska, Lincoln, 2015 to present.

V.O. Smith Professor, Department of Civil and Architectural Engineering, University of Wyoming (September 2005 to present)

University of Missouri at Columbia Department of Civil Engineering, ***Academy of Distinguished Alumni***, October 2000.

Outstanding Research and Graduate Teaching Award, College of Engineering, University of Wyoming, 1998.

American Society for Engineering Education ***DOW Outstanding Young Educator Award***, a national award recognizing excellence in teaching and research, 1988.

Most Outstanding Professor by the Chi Epsilon Chapter at Colorado State University, 1981.

BOOKS

Barker, R.M. and Puckett, J.A., *Design of Highway Bridges – Based on AASHTO LRFD Bridge Design Specification*, John Wiley and Sons, New York, 2013, Third Edition, 528 pgs (wide-page format)

Puckett, J.A. and Coletti, D. *National Steel Bridge Alliance Steel Bridge Design Handbook*, Chapter 10: Structural Analysis, 2011.

Barker, R.M. and Puckett, J.A., *Design of Highway Bridges – Based on AASHTO LRFD Bridge Design Specification*, John Wiley and Sons, New York, 2007, Second Edition, 1009 pgs.

Barker, R.M. and Puckett, J.A., *Design of Highway Bridges – Based on AASHTO LRFD Bridge Design Specification*, John Wiley and Sons, New York, 1997, 1169 pgs.

NATIONAL ACADEMY OF SCIENCES PUBLICATIONS:

Puckett, J., Garlich, M. *New Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*, Report 796, Transportation Research Board, NAS, Washington, DC, 2016.

Puckett, J.A., Huo, X.S., Jablin, M., and Mertz, D ., Simplified Live Load Distribution Factor Equations, Report 592, National Cooperative Highway Research Program, Transportation Research Board, NAS, Washington, DC, 2007.

Mlynarski, M and Puckett, J. and Thompson, P., *Bridge Software – Validation and Guideline and Examples*, Report 485, National Cooperative Highway Research Program, Transportation Research Board, NAS, Washington, DC, 2003.

SOFTWARE DEVELOPMENT (selected work):

AASHTOWare BrR and BrD – database for the nation's bridges that houses detailed geometry, material, and other engineering data for refine finite element analysis, bridge rating, and other uses

BRASS Applications:
GIRDER: engineering applications for LRFD, LFD, ASD bridge analysis, design, and ratings
CULVERT: same as above for reinforce box culverts
PIER: engineering for reinforce concrete piers for LRFD
ROUTE: automated refined analysis of an inventory of bridge for permit and super loads
Other: Bearing pads, Sign and luminaire structure, geometric layout

AASHTO Finite Element Analysis Engine: Non-linear finite element engine for AASHTO for use within the Virtis/Opis software package.

National Bridge Inventory (NBI) Report Generation: Importing of NBI data and corresponding error checking are handled for any year. Data query for report generation is based on material type, construction year, bridge adequacy (structurally deficient and functionally obsolete), length, state, etc. Graphs are generated for specific use cases based on query criteria.

NCHRP 12-62 national academies: developing a simplified method for computing live load distribution factors for the *AASHTO LRFD Bridge Design Specifications*. Parametrically generated bridge descriptions are analyzed using the AASHTO structural analysis engine in order to determine a series of influence surfaces. The influence surfaces are loaded with simulated truck loads (combinations of AASHTO trucks) in order to determine maximum actions. Equivalent distribution factors based on this rigorous analysis method are used to calibrate a simplified distribution factor method. The automated manner of bridge generation, analysis, and live loading allows for the investigation of thousands of bridges.

NCHRP 12-50 national academies: formalized a schema for tagging all analysis and design computational data for LRFD bridge design for beam bridges. Formalized the comparison of computational results from different numerical engines.

AASHTO LRFD Bridge Design SpecML Research Project: Developed an XML schema and working prototype for presentation of the AASHTO LRFD Bridge Design specification in an electronic format (XML / browser). The XML schema was designed to provide maximum "intelligent" functionality, such as multiple views, hyper-linking within and external to the specification, user defined margin notes, etc.

NBI On-line: A dynamic website designed to query a database containing the National Bridge Inventory (NBI) data. Enabled user to perform a custom query and presented data laid over a Google Map. Public can query this database to graphically illustrate the national bridge inventory, structurally deficient and functionally obsolete bridges.

Rapid Bridge Classification: Application to assist with the rapid classification of bridges for structural soundness based on limited information. The application allows selection of user-defined truck convoys as well as individual truck loads. Route selection implemented via an embedded browser within the application. Use for DoD national defense in operational theatres.

Monty Carlo Rally: Application to demonstrate the Monte Carlo (MC) method applied to structural bridge analysis. The application allows the user to set MC parameters for variables used within bridge analyses. A series of analyses is run with the MC variables being randomly perturbated each iteration. Bounding values for various results of interest are recorded and displayed to the user in graphical and tabular form. Although for bridges, this software is generally applicable to most any computational engine.