

## **CURRICULUM VITAE**

### **DAVID I. McLEAN**

Professor and Dean  
Walter Scott, Jr. College of Engineering  
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May 2023

#### **EDUCATION:**

Ph.D., Civil Engineering, 1986, Cornell University, Ithaca, New York  
M.S., Civil Engineering, 1982, Colorado State University, Fort Collins, Colorado  
B.S., Civil Engineering, Cum Laude, 1980, Louisiana State University, Baton Rouge, Louisiana

#### **REGISTRATION:**

Registered Professional Engineer (Civil), Washington, No. 27089

#### **ADMINISTRATIVE EXPERIENCE:**

Dean, Walter Scott, Jr. College of Engineering, Colorado State University, 2013-present.

The dean reports to the provost of the university and is responsible for the overall strategic direction and administration of the college. The college currently consists of 150 faculty, 400 staff and research scientists, and approximately 2500 undergraduate and 1050 graduate students. The dean has budgetary responsibility for \$27 million in annual university funding, \$15 million in annual gift funds, and \$95 million in annual research expenditures.

Director, Washington Transportation Center (TRAC), Washington State University. 2005–2013.

TRAC is a tri-partner research center with WSU, the University of Washington, and the Washington State Department of Transportation (WSDOT) and was established to coordinate and leverage resources to support research addressing a broad range of transportation issues.

Chair, Department of Civil and Environmental Engineering, Washington State University. 2003-2012.

The chair reports to the dean of the college and is responsible for the overall strategic direction and administration of the department. The department currently consists of 30 faculty, 7 staff, and approximately 600 undergraduate and 150 graduate students. The chair has budgetary responsibility for \$3 million in annual state funding, \$1 million in annual gift funds, and \$7.5 million in annual research expenditures.

Associate Dean, College of Engineering and Architecture, Washington State University. 1998-2003.

Responsible for undergraduate programs and student services, including accreditation of all college undergraduate programs. Coordinated college-wide scholarship process. Led student success initiatives that increased retention of undergraduate students from less than 30% to nearly 50%. Managed college laboratory and classroom space. Secured more than \$1 million in funding from The Boeing Company, Hewlett Packard and National Science Foundation to support outreach programs for Native American students.

## **OTHER PROFESSIONAL APPOINTMENTS AND EXPERIENCE:**

Professor, Department of Civil and Environmental Engineering, Colorado State University. 2013- present.

Professor, Department of Civil and Environmental Engineering, Washington State University. 1987-2013.

Joined as assistant professor, tenured and promoted to associate professor in 1993, and promoted to full professor in 1999. Expertise in the performance and design of concrete and masonry structures. Recipient of numerous national and international awards for research accomplishments. PI or co-PI on \$18M of externally funded grants and contracts. Published 80 peer-reviewed journal and conference papers, books and monographs.

Research Engineer, National Bureau of Standards, Gaithersburg, Maryland. 1984-1987.

Led experimental and analytical investigations of the performance of offshore drilling structures for Arctic regions, leading to the development of design guidelines for the US Minerals Management Service.

Engineer, Louisiana Department of Transportation, Baton Rouge, Louisiana. 1980-1981.

Construction engineer working on elevated and at-grade sections of the I-110 interstate highway system in Baton Rouge.

## **HONORS AND AWARDS:**

2015 President's Award from The Masonry Society, in recognition of "exceptional contributions to the success of the Society."

ASTM Alan Yorkdale Award for top paper in masonry, co-recipient with Klingner, R.E., Shing, P.B., McGinley, W.M., Okail, H. and Jo, S. for "Seismic Performance of Low-Rise Reinforced Masonry and Wood-Framed Buildings with Clay Masonry Veneer," *ASCE Journal of Structural Engineering*, Aug 2013.

Outstanding TMS Journal Paper Award, *The Masonry Society*, co-recipient with J.Z. Mjelde, J.J. Thompson and W.M. McGinley, for "Performance of Lap Splices in Concrete Masonry Shear Walls," *The Masonry Society Journal*, Vol. 27, No. 1, July 2009, pp. 35-54.

Outstanding Paper Award in the category of experimental research, co-recipient with H. Okail, P.B. Shing, R.E. Klingner, S. Jo, and W.M. McGinley, for "Seismic Performance of Masonry Veneer in Wood-Frame Structures," *Proceedings of the 11<sup>th</sup> North American Masonry Conference*, 2011.

Outstanding Paper Award in the category of analytical, numerical and computational research, co-recipient with R.M. Bennett, E.T. Huston and D.B. Throop, for "Allowable Stress Recalibration in the 2011 TMS 402," *Proceedings of the 11<sup>th</sup> North American Masonry Conference*, 2011.

2010 Engineer of Merit Award from the Inland Empire Section of the American Society of Civil Engineers for distinguished service to the engineering profession.

2009 Outstanding MS Thesis Award, *The Masonry Society*, awarded to Courtney Davis for her thesis "Evaluation of Design Provisions for In-Plane Shear in Masonry Walls." David McLean, Advisor.

2008 Outstanding MS Thesis Award, *The Masonry Society*, awarded to Jon Mjelde for his thesis "Performance of Lap Splices in Concrete Masonry Shear Walls." David McLean, Advisor.

John B. Scalzi Research Award, presented by The Masonry Society, to honor outstanding lifetime contributions to masonry research, 2008.

Fellow of The Masonry Society. Elected 2006.

ASTM Alan Yorkdale Award for top paper in masonry, co-recipient with J. Greenwald and J. Thompson, for “Effects of Confinement Reinforcement on Bar Splice Performance,” *Proceedings of the 10<sup>th</sup> Canadian Masonry Symposium*, 2005.

2005 Outstanding MS Thesis Award, *The Masonry Society*, awarded to Matthew Snook for his thesis “Effects of Confinement Reinforcement on the Performance of Masonry Shear Walls.” David McLean, Advisor.

R.G. Drysdale Award for Best Paper on Masonry Research, Honorable Mention, co-recipient with M. Snook, C. McDaniel, and D. Pollock, for “Effects of Confinement Reinforcement on the Performance of Masonry Shear Walls,” *Proceedings of the 10<sup>th</sup> Canadian Masonry Symposium*, 2005.

2004 Outstanding MS Thesis Award, *The Masonry Society*, awarded to Ian Eikanas for his thesis “Behavior of Masonry Shear Walls with Varying Aspect Ratio and Flexural Reinforcement.” David McLean and David Pollock, Advisors.

H.W.H. West Award for best paper, co-recipient with A. Fabrello, D. Pollock and T. Young, for “Performance of Anchor Bolts in Concrete Masonry Under Combined Tension and Shear Loading,” *Proceedings of the Ninth Canadian Masonry Conference*, 2001.

Consultant to Welch, Comer and Associates, Engineers on the Milo Creek Flood Control Project in Wardner, Idaho that received the 2001 “Grand Conceptor” from the Consulting Engineers of Idaho as well as a 2001 “National Engineering Excellence Award” from the American Consulting Engineers Council.

ACI Structural Engineering Outstanding Paper Award, honorable mention, co-recipient with L. Marsh, for “Seismic Retrofitting of Bridge Foundations,” *ACI Structural Journal*. March/April 1999.

1999 Outstanding MS Thesis Award, *The Masonry Society*, awarded to Jason Thompson for his thesis “Behavior and Design of Tension Lap Splices in Reinforced Masonry.” David McLean, Advisor.

ASTM Alan Yorkdale Award for top paper in masonry, co-recipient with J. Thompson and T. Young, for “Tension Lap Splices in Reinforced Concrete Masonry,” *Proceedings of the Eighth Canadian Masonry Conference*, 1998.

Top Presentation Award, American Society of Engineering Educators, Pacific Northwest Section Annual Meeting, 1997.

The Outstanding Faculty Researcher Award in Civil and Environmental Engineering, Washington State University, 1994-95.

Golden Key National Honor Society, Washington State University Academic Advisor of the Year Award, 1991.

Leon Luck Faculty Award to the most effective professor in the Department of Civil and Environmental Engineering, Washington State University, 1990-91 and 1998-99.

The Outstanding Teaching Faculty Member in Civil and Environmental Engineering, Washington State University, 1990-91 and 1994-95.

The American Society of Civil Engineers Most Admired Professor Award, Student Chapter, Washington State University, 1988, 1989, and 1990.

Special Act Award, National Bureau of Standards, for outstanding contributions in laboratory tests of punching shear in concrete slabs, 1986

## **PROFESSIONAL AFFILIATIONS AND SERVICE:**

### Accreditation Board for Engineering and Technology (ABET)

Program Evaluator for Civil Engineering

Coordinated ABET preparation and visit for all WSU engineering programs (2001)

Led ABET preparation and visit for WSU civil engineering program (2007)

Administrative oversight of preparation and visit for all CSU engineering programs (2013 and 2019)

### Alaska University Transportation Center

Member Board of Directors, 2008-2013

### American Concrete Institute: Member, 1983-2013

### American Society of Civil Engineers: Member, 1987-present

Member ASCE Standards Committee on Seismic Rehabilitation of Buildings, 1988-1993

Member Steering Committee for 2003 Structures Congress

Faculty Advisor, WSU ASCE Student Chapter, 1989-1995

### American Society of Engineering Educators: Member, 1996-present

Campus Representative from Washington State University, 1998-2003

Chair and Host of 2001 Pacific Northwest Section Meeting

### Asian Institute of Technology

Member of the AIT Board of Trustees, 2019-present

Co-Chair of the AIT Board of Trustees, 2022-present

Member of AIT Presidential Search Committee, 2022-present

Co-Chair of Committee on Student Relations, 2019-2022

Co-Chair of Committee on Faculty Relations, 2022-present

### 9<sup>th</sup> Australasian Masonry Conference (New Zealand)

Member of the International Steering Committee, 2009-2011

### Building Seismic Safety Council (part of the National Institute of Building Sciences)

Member, Technical Subcommittee 5 on Masonry Structures

### 9<sup>th</sup> International Masonry Conference (Portugal)

Member of the Technical Steering Committee, 2012-14

### Masonry Standards Joint Committee (MSJC) of TMS, ASCE and ACI, 2002-present

Vice Chair for 2011 MSJC Code cycle

Member, Executive Committee, for 2005, 2008 and 2011 MSJC Code cycles

Chair, Reinforcement and Connectors Subcommittee, for 2005 and 2008 MSJC Code cycles

### Math, Engineering and Science Achievement (MESA) Outreach Program

Member, Washington State Board of Directors, 1998-2003

Member, Search Committee for State-Wide Native American Outreach Director, 2000

### NSF Pacific Earthquake Engineering Research Center (PEER)

Member of Education Committee, 1997-2004

### National Society of Black Engineers

Faculty Advisor to WSU NSBE Student Chapter, 1998-2003

PacTrans FHWA Region X University Transportation Center  
Member, Board of Directors, 2011 - 2013

Structural Engineers Association of Washington: Professional Associate, 1989-2013  
FEMA-trained inspector for post-earthquake safety evaluation of buildings (ATC 20-1)

The Masonry Society: Professional Member, 1988-present  
President Elect, 2022  
Chair of Technical Activities Committee, 2011-2016  
Fellow, elected 2006  
Member, Board of Directors, 2003-2007, 2016-present  
Chair of Research Committee, 2000-2006  
Member of Codes and Standards Committee, 1998-2016  
Member of Research Committee, 1998-present  
Member of Technical Program Committee for Ninth North American Masonry Conference, 1998-99  
Member of Technical Program Committee for Tenth North American Masonry Conference, 2006-07  
Member of Technical Program Committee for Thirteenth North American Masonry Conference, 2016-present  
Host of 1999 TMS Masonry Professors Workshop, Spokane Washington

TransNow FHWA Region X University Transportation Center  
Member Board of Directors, 2006-2011

Transportation Research Board  
Member of Concrete Bridges Committee A2CO3, 1993-1999  
Chair and organizer for TRB Session "Repair, Rehabilitation and Retrofit of Concrete Bridges" at 1996  
TRB Annual Meeting

**COURSES TAUGHT:**

	<i>Undergraduate Courses</i>	<i>Graduate Courses</i>
At WSU:	Introduction to Engineering Statics Structural Design Laboratory Steel Design Reinforced Concrete Design Prestressed Concrete Design Reinforced Masonry Design FE Exam Review	Advanced Steel Design Advanced Reinforced Concrete Design Advanced Topics in Reinforced Concrete Earthquake Engineering
At Cornell University:	Engineering Graphics	

**REVIEWER:**

ACI Structural Journal	Forest Products Laboratory technical publications
ASCE Journal of Bridge Engineering	McGraw-Hill
ASCE Journal of Constructed Facilities	Ninth North American Masonry Conference
ASCE Journal of Engineering Mechanics	NSF DLR Panel, 2004
ASCE Journal of Structural Engineering	NSF DTS Panel, 2004
ASCE Structures Congress (2003)	Sixth U.S. Conference on Earthquake Engineering
CRC Press LLC	Tenth North American Masonry Conference
EERI Journal of Earthquake Engineering	TMS Journal

Eighth North American Masonry Conference  
Eleventh North American Masonry Conference  
Fourteenth Intl Brick and Block Masonry Conference  
Fifteenth Intl Brick and Block Masonry Conference  
Fifth International Bridge Conference

TMS Student Thesis and Dissertation Awards  
Transportation Research Board technical papers  
USDA Competitive Grant Program  
University of Rhode Island Transportation Center  
Washington Editorial Review Board

### **CONSULTING:**

Masonry design seminars, Northwest Concrete Masonry Association, 2004 through 2012.

Structural evaluation of water storage structures, Welch Comer & Associates Engineers, Inc. 2006-07.

Masonry code comparisons, National Concrete Masonry Association, 2005-2007.

Structural evaluation of water storage structure, Taylor Engineering, 2006.

Consultant for structural tests, National Concrete Masonry Association, 2003-04.

Seminars on the 2002 MSJC Code, American Concrete Institute, 2002 and 2003.

Expert witness for structural investigation, Welch Comer & Associates Engineers, Inc., 2002.

Load testing of office structure, Coffman Engineers, 2000.

Load testing of parking structure at Seatac Airport, BERGER/ABAM, 2000.

Structural engineering short course for The Longview Fibre Company, 1999.

Structural evaluation of existing building, D'Amato Conversano Engineers, 1999.

Seismic evaluation of emergency water supply for Mercer Island, Nelson Couvrette Engineers, 1998-99.

Structural design of flood control structures, Welch Comer & Associates Engineers Inc., 1998-99.

Field measurement of forces in Evergreen Point Floating Bridge moveable span, Washington State Department of Transportation, 1995.

Structural design of fish diversion systems, River Masters Engineering Inc., 1992 and 1995.

Expert witness for structural collapse, Chase, Haskell, Hayes and Kalamon, 1991-92.

Structural evaluation of low-level radioactive waste depositories, Westinghouse Hanford Company, 1990-91.

### **RESEARCH GRANTS AND CONTRACTS (total of \$18.6 million; personally administered \$8.1 million):**

“Use of Recycled Concrete as Aggregate in Portland Cement Concrete Pavements,” Washington State Department of Transportation, 12/1/2013-3/31/2014, \$20,000.

“Safe and Sustainable Transportation Solutions for the Pacific Northwest,” PacTrans University Transportation Center, Principal Investigator, 5/16/2012-11/30/2014, \$988,000.

“Use of Recycled Concrete as Aggregate in Portland Cement Concrete Pavements,” Washington State Department of Transportation, 4/1/2012-12/31/2014, \$150,000.

“Support for TRAC Administration at WSU,” Washington State Department of Transportation, Principal Investigator, 7/1/11-6/30/13, \$75,000.

“Performance-Based Design of Masonry Shear Wall Structures,” NIST Recovery Act Grant Program, Co-Principal Investigator, 1/1/10-12/31/13, \$1,500,000.

“Support for TRAC Administration at WSU,” Washington State Department of Transportation, Principal Investigator, 7/1/09-6/30/11, \$90,000.

“Advanced Institute Student Support,” TransNow University Transportation Center, Principal Investigator, 7/1/09-6/30/10, \$33,000.

“Evaluation of Retrofit Design for the Columns in the Aurora Avenue - George Washington Memorial Bridge,” Washington State Department of Transportation, Principal Investigator, 10/1/08-2/28/10, \$256,000.

“Advanced Institute Student Support,” TransNow University Transportation Center, Principal Investigator, 7/1/08-6/30/09, \$32,000.

“Student Projects in Transportation Engineering,” Washington State Department of Transportation, Principal Investigator, 7/1/07-6/30/09, \$31,000.

“Smart FRP Composite Sandwich Bridge Decks in Cold Regions,” Alaska University Transportation Center, Co-Principal Investigator, 7/1/07-6/30/10, \$300,000.

“Concrete Performance Using Low Degradation Aggregates,” Washington State Department of Transportation, Co-Principal Investigator, 7/1/07-8/15/09, \$230,000.

“Loss of Service Life Due to Bridge Deck Shrinkage Cracking,” Washington State Department of Transportation, Co-Principal Investigator, 7/1/07-6/30/09, \$100,000.

“Effect of Intermediate Diaphragms to Prestressed Concrete Bridge Girders in Over-height Truck Impacts,” Washington State Department of Transportation, Co-Principal Investigator, 7/1/07-12/31/07, \$50,000.

“Effect of Intermediate Diaphragms in Prestressed Concrete Girder Bridges in Over-Height Truck Impacts,” Washington State Department of Transportation, Co-Principal Investigator, 7/1/07-12/31/07, \$50,000.

“Support for TRAC Administration at WSU,” Washington State University, Principal Investigator, 7/1/07-6/30/09, \$90,000.

“NEESR-SG: Performance-Based Design of New Masonry Structures,” National Science Foundation, Co-Principal Investigator, 10/1/06-9/30/09, \$705,968

“Retrofit of Rectangular and Flared Bridge Columns,” Federal Highway Administration, Principal Investigator, 8/15/06-12/31/07, \$275,000.

“Infrastructure Renewal,” Federal Highway Administration, Project Director, 1/01/05-12/31/08, \$1,350,000.

“Bridge Response to Blast Loadings,” Federal Highway Administration, Principal Investigator, 8/15/05-12/31/07, \$250,000.

“Effects of Long Duration Earthquakes on Bridges,” Federal Highway Administration, Principal Investigator, 7/01/03-6/30/06, \$250,000.

“Effectiveness of Confinement Reinforcement in Masonry Shear Walls,” Masonry Industry Promotion Group, Northwest Concrete Masonry Association, and the National Concrete Masonry Association, Principal Investigator, 8/16/04-6/15/05, \$25,000.

“Fiber Reinforcement in Masonry Grout,” W.R. Grace Inc. – Conn., Principal Investigator, 8/16/04-8/15/05, \$15,000.

“Composite Material Alternatives to Timber in the Construction of Wing Walls for Ferry Terminals,” Federal Highway Administration, Co-Principal Investigator, 7/1/03-12/31/05, \$246,000.

“Seismic Behavior and Retrofit of Bridge Knee Joints,” Washington State Department of Transportation, Principal Investigator, 8/16/02-12/31/04, \$150,000.

“Experimental Testing of Masonry Shear Walls,” Eastern Washington Masonry Promotion Group and Northwest Concrete Masonry Association, Co-Principal Investigator, 8/16/02-5/15/03, \$20,000.

“Reinforcing Limits for Masonry Shear Walls,” Eastern Washington Masonry Promotion Group and Northwest Concrete Masonry Association, Principal Investigator, 1/1/01-12/31/01, \$18,000.

“Performance of Anchor Bolts in Masonry Under Combined Tension and Shear Loading,” Eastern Washington Masonry Promotion Group and Northwest Concrete Masonry Association, Principal Investigator, 1/1/00-5/15/01, \$17,000.

“Measurement of Anchor Cable Forces and Pontoon Response in the Evergreen Point Floating Bridge,” Washington State Department of Transportation, Principal Investigator, 10/1/99-12/31/01, \$260,000.

“End of Program Student Outcomes Assessment,” National Science Foundation, Co-Principal Investigator, 11/1/99-12/31/02, \$800,000.

“Evaluation of Displacement-Based Methods for Seismic Analysis of Highway Bridges,” Washington State Department of Transportation, Co-Principal Investigator, 5/5/00-12/31/01, \$50,000.

“Engineered Wood Composites for Naval Waterfront Facilities,” Office of Naval Research, Co-Principal Investigator, 1/1/98 to 12/31/00, \$7,500,000.

“Retrofitting of Split Concrete Columns,” Washington State Department of Transportation, Principal Investigator, 1/1/98-12/31/99, \$114,742.

“Embedded Anchor Bolts in Masonry,” Eastern Washington Masonry Promotion Group and Northwest Concrete Masonry Association, Principal Investigator, 8/16/98-5/15/99, \$15,000.

“Development of an Instrumentation Plan for Evergreen Point Floating Bridge,” Washington State Department of Transportation, Principal Investigator, 7/1/99-9/30/99, \$13,944.

“Development of Nondestructive Evaluation Methods and Equipment for Wood Transportation Structures,” U.S.D.A. Forest Products Laboratory, Principal Investigator, 9/1/96 to 8/31/99, \$190,000.

“Reinforcement Splices in Concrete Masonry,” Eastern Washington Masonry Promotion Group and Northwest Concrete Masonry Association, Principal Investigator, 8/16/96-6/30/97, \$16,000.

“Dynamic Impact Factors for Highway Bridges,” NCHRP Project 20-5, Topic 28-05, Principal Investigator, 12/1/96 to 2/28/98, \$20,000.



“Effects of Test Setup on Measured Shear Strength of Wood Beams,” U.S.D.A. Forest Products Laboratory, Principal Investigator, 12/1/95 to 6/30/96, \$7,000.

“Experimental Verification of Retrofit Strategies for Multi-Column Bridges,” Washington State Department of Transportation, Principal Investigator, 8/15/95 to 12/31/97, \$120,000.

“Insulated Concrete Masonry,” Eastern Washington Masonry Promotion Group and Northwest Concrete Masonry Association, Principal Investigator, 8/15/95-5/15/96, \$14,000.

“Shear Strength of Sawn Lumber Beams,” U.S.D.A. Forest Products Laboratory, Principal Investigator, 5/1/94 to 2/28/97, \$135,000.

“Experimental Tests of Shaft/Column Connections,” Washington State Department of Transportation, Principal Investigator, 8/16/94 to 8/15/96, \$75,000.

“Analytical Evaluations of Retrofit Strategies for Multi-Column Bridges,” Washington State Department of Transportation, Co-Principal Investigator, 9/1/94 to 8/15/96, \$75,000.

“Seismic Evaluation and Retrofit of Bridge Substructures,” Washington State Department of Transportation, Principal Investigator, 2/21/92 to 6/30/94, \$185,466.

“Review of Design Criteria for Drilled Shaft/Column Connections,” Washington State Department of Transportation, Principal Investigator, 8/1/93 to 6/30/94, \$10,808.

“Lap Splices in Masonry Walls,” Eastern Washington Masonry Promotion Group and Northwest Concrete Masonry Association, Principal Investigator, 8/16/92-5/15/93, \$12,000.

“Design and Analysis of Compact Processing Unit Enclosure/Containment Module,” Battelle Pacific Northwest Laboratory, Principal Investigator, 8/1/93 to 11/15/93, \$37,614.

“Effects of Block and Grout Strengths on Masonry Prism Strength,” Eastern Washington Masonry Promotion Group and Northwest Concrete Masonry Association, Principal Investigator, 8/15/93-5/15/94, \$12,000.

“Bridge Column Strength Degradation,” National Science Foundation, Principal Investigator, 8/15/93 to 8/14/96, \$90,000.

“Analytical Modeling of Bridge Foundations for Seismic Analysis,” Washington State Department of Transportation, Co-Principal Investigator, 8/15/91 to 6/30/93, \$75,000.

“Use of Overlapping Spirals in Rectangular Bridge Columns,” Washington State Department of Transportation, Principal Investigator, 8/15/90 to 6/30/92, \$75,000.

“Seismic Retrofit of Bridge Columns,” Washington State Department of Transportation, Principal Investigator, 1/1/90 to 9/30/91, \$75,000.

“Reinforcing Concrete Masonry Walls Under Combined Axial and Flexural Loading,” Eastern Washington Masonry Promotion Group and Northwest Concrete Masonry Association, Principal Investigator, 8/16/90-8/15/91, \$14,000.

“Seismic Behavior of South Bellevue Access Structures,” Washington State Department of Transportation, Principal Investigator, 7/1/90 to 4/31/91, \$30,000.

“Laboratory Sample Test to Demonstrate Feasibility of Measuring Pavement Deflection Using 3-D Machine Vision,”

Washington State University College of Engineering Research Award, Co-Principal Investigator, 7/1/90 to 6/30/91, \$12,944.

“Predicting Three-Dimensional Load Sharing Among Subsystems in Light-Frame Wood Buildings”, U.S.D.A. Competitive Grant Program, Co-Principal Investigator, 9/15/88 to 9/30/90, \$85,000.

“Plastic Hinge Details for the Bases of Architecturally-Oversized Bridge Columns,” Washington State Department of Transportation, Principal Investigator, 3/1/88 to 6/30/90, \$190,746.

“Ultimate Strength Behavior of Reinforced Concrete Block Masonry Walls,” Washington State University Office of Grant Research Development Grant-in-Aid, Principal Investigator, 7/1/88 to 6/30/89, \$9,460.

#### **REFEREED JOURNAL PUBLICATIONS (total of 58):**

Mavros, M., Ahmadi, F., Shing, P.B., Klingner, R.E., McLean, D., and Stavridis, A., “Shake-Table Tests of a Full-Scale Two-Story Shear Dmoniated Reinforced Masonry Wall Structure,” *ASCE Journal of Structural Engineering*, Oct. 2016. Vol. 142, Issue 10.

Stavridis, A., Ahmadi, F., Mavros, M., Shing, P., Klingner, R. and McLean, D., “Shake-Table Tests of a Full-Scale Three-Story Reinforced Masonry Shear Wall Structure,” *ASCE Journal of Structural Engineering*, Oct. 2016. Vol. 142, Issue 10.

Snook, M., McLean, D., McDaniel, C. and Pollock, D., “Effects of Confinement Reinforcement on Masonry Shear Walls,” accepted for publication in *The Masonry Society Journal*.

Slaughter, A.E., Wolcott, M.P. and McLean, D.I., “Design of Wood-Plastic Composite Bridge Deck Member,” accepted for publication in *The Forest Products Journal*.

Eikanas, I.K., Pollock, D.G., McDaniel, C.C. and McLean, D.I., “Behavior of Concrete Masonry Shear Walls With Varying Aspect Ratios and Flexural Reinforcement,” accepted for publication to *The Masonry Society Journal*.

Wen, H., McLean, D.I., Willoughby, K., “Evaluation of Recycled Concrete Pavements as Aggregates in New Concrete Pavements,” *The Transportation Research Record*, No. 2508, 2015, pp. 73-78.

Ahmadi, F., Sherman, J., Hernandez, J., Kapoi, C., Klingner, R.E., and McLean, D.I., “Seismic Performance of Cantilever Masonry Shear Walls, *ASCE Journal of Structural Engineering*, Vol. 140, Issue 9, September 2014.

Alogla, S., Ahmadi, F., Hernandez, J., Klingner, R.E., and McLean, D.I., “Evaluation of 2011 MSJC Strength-design Shear Provisions for Masonry Shear Walls,” *The Masonry Society Journal*, Vol. 32, No. 1, December 2014, pp. 51-68.

Ahmadi, F., Mavros, M., Klingner, R.E., Shing, P.B., and McLean, D.I., “Displacement-based Seismic Design Procedure for Low-rise Masonry Shear Wall Structures – Part 1: Development and Application,” *EERI Earthquake Spectra*, December 2013.

Ahmadi, F., Mavros, M., Klingner, R.E., Shing, P.B., and McLean, D.I., “Displacement-based Seismic Design Procedure for Low-rise Masonry Shear Wall Structures – Part 2: Validation and Comments,” *EERI Earthquake Spectra*, December 2013.

Stavridis, A., Mavros, M., Ahmadi, F., Shing, P.B., Klingner, R.E., and McLean, D.I., “Ensayos en Mesa Vibrante de una Probeta Tipo Muro Cortante de Mampostería Reforzada, de 3 Niveles, a Escala Completa” (Shake-Table Tests of a 3-Story, Full-Scale, Reinforced Masonry Shear-Wall Specimen”), *Revista SINEDOM* (Journal of the Association

of Structural Engineering) Dominican Republic, May 2013.

Klingner, R.E., Shing, P.B., McGinley, W.M., McLean, D.I., Okail, H. and Jo, S., "Seismic Performance of Low-Rise Reinforced Masonry and Wood-Framed Buildings with Clay Masonry Veneer," *ASCE Journal of Structural Engineering*, Aug 2013, Vol. 139, No. 8, pp. 1326-1339. Recipient of 2014 ASTM Yorkdale Award.

Cofer, W.F., Mathews, D.S. and McLean, D.I., "Effects of Blast Loading on Prestressed Girder Bridges," *Journal of Shock and Vibration*, Vol. 19, Issue 1, 2012, pp. 1-18.

Walkenhauer, B., McLean D., Boone, C. and Lamont M. (2011). "Seismic Retrofitting of Cruciform-Shaped Columns Using FRP Jacketing," *Transportation Research Record*, No. 2251, 2011, pp. 135-143.

Okail, H.O., Shing, P.B., McGinley, W.M., Jo, S. and McLean, D.I., "Shaking-Table Tests of a Full-Scale Single-Story Masonry Veneer Wood-Frame Structure," *Journal of Earthquake Engineering and Structural Dynamics*, Vol. 40, Issue 5, pp. 509-530, April 2011.

Klingner, R. E., P. Benson Shing , W. Mark McGinley , David I. McLean, Hussein Okail , and Seongwoo Jo, "Seismic Performance Tests of Masonry and Masonry Veneer," *Journal of ASTM International*, Vol. 7, No. 3, American Society for Testing and Materials, West Conshohocken, PA January 2010. Also published as part of ASTM STP 1512, J. Farny and B. Behie, eds., American Society for Testing and Materials, West Conshohocken, PA. 2010.

Davis, C.L., McLean, D.I. and Ingham, J.M., "Evaluation of Design Provisions for In-Plane Shear in Masonry Walls," *The Masonry Society Journal*, Vol. 28, No. 2, Dec 2010, pp. 41-60.

Yang, M., Qiao, P., McLean, D.I. and Khaleghi, B., "Effects of Intermediate Diaphragms in Prestressed Concrete Bridge Girders to Over-Height Truck Impacts," *PCI Journal*, 55(1), Winter 2010, pp. 58-78.

ElGawady, M., Endeshaw, M., McLean, D.I. and Sack, R, "Retrofitting of Rectangular Columns with Deficient Lap Splices," *ASCE Journal of Composites for Construction*, Jan.-Feb. 2010.

Mjelde, J., McLean, D., Thompson, J. and McGinley, M., "Performance of Lap Splices in Masonry Shear Walls," *The Masonry Society Journal*, Vol. 27, No. 1, July 2009, pp. 35-54. Recipient of 2011 TMS Best Paper Award.

Shattarat, N.K., Symans, M.D., McLean, D.I. and Cofer, W.F., "Evaluation of Nonlinear Static Analysis Methods and Software Tools for Seismic Analysis of Highway Bridges," *Engineering Structures*, Vol. 30, Issue 5, pp. 1335-1345, May 2008.

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WSU University College *Composing the New Classroom* seminar series, "Incorporating Multimodal Communication into the Civil Engineering Senior Design Capstone Course," February 5, 2013.

9<sup>th</sup> Australasian Masonry Conference, Queenstown, New Zealand, "Seismic Performance of Masonry Structures with Veneers," February 2011.

WSU Innovators Distinguished Lecture, Seattle, Washington, "Better Roads Ahead: Sustainable Solutions to Complex Transportation Needs," April 5, 2010.

Fourteenth International Brick and Block Masonry Conference, Sydney, Australia, "Performance of Lap Splices In Concrete Masonry Shear Walls Under In-Plane Loading," February, 2008.

China Association for Engineering Construction, Annual Meeting, Changsha, China, invited presentation "Improving Ductility in Concrete Masonry Structures," December 2007.

Tongji University, Shanghai, China, invited presentation "Current Masonry Research in the United States," December 2007.

Canterbury University, New Zealand, invited presentation "Effectiveness of Confinement Reinforcement for Improving the Ductility of Masonry," September 2007.

7<sup>th</sup> International Masonry Conference, London, England, "Evaluation of Confinement Methods for Improving the Ductility of Masonry Shear Walls," October, 2006.

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ASCE Inland Empire Section, Spokane, Washington, "Seismic Performance of Retrofit of Bridges," September, 1997.  
ASEE Pacific Northwest Section Annual Meeting, Bellingham, Washington, "Development of a Student Outcomes Assessment Plan," May, 1997.

Northwest Concrete Masonry Association, Portland, Oregon, "Design of Reinforcement Splices in Concrete Masonry," April, 1997.

ACI Spring Convention, Seattle, Washington, "Seismic Retrofitting of Bridge Substructures," April, 1997.

ACI Committee 341 at the ACI Spring Convention, Seattle, Washington, "Strength Degradation of Existing Bridge Columns," April, 1997.

International Wood Engineering Conference, New Orleans, Louisiana, "Recent Research on the Shear Strength of Wood Beams, October 28-31, 1997.

Structures and Geotechnical Graduate Seminar, University of Washington, "Seismic Performance of Reinforced Concrete Bridge Columns," February, 1997.

Fourth NSF Workshop on Bridge Research in Progress, Buffalo, New York, "Strength Degradation of Existing Bridge Columns," June, 1996.

ASTM Committee D07 workshop, Madison Wisconsin, "Shear Strength of Sawn Lumber Beams Using Different Test Setups," April, 1996.

Transportation Research Board Annual Meeting, Washington, D.C., "Strength Degradation of Existing Bridge Columns," January, 1996.

Structural Engineers Association of Washington, Spokane, Washington, "Compressive Strength of Grouted and Ungouted Concrete Masonry Prisms," March, 1995.

Transportation Research Board Annual Meeting, Washington, D.C., "Seismic Retrofit of Bridge Substructures," January, 1995.

Structures and Geotechnical Graduate Seminar, University of Washington, "Recent Research on the Seismic Retrofitting of Bridges," March, 1994.

Transportation Research Board Annual Meeting, Washington, D.C., Committee A2C03 on Concrete Bridges, "Seismic Retrofit of Pile-Supported Footings," January, 1994.

Transportation Research Board Annual Meeting, Washington, D.C., Committee A2C03 on Concrete Bridges, "Research in Progress: Retrofitting Footings for Seismic Loading," January, 1993.

Honors Program, Washington State University, "Importance of Effective Communication," October, 1992.

Asia Pacific International Structural Engineering Conference, Jahor Bahru, Malaysia, "Steel Encased Concrete Columns for Use in High Rise Construction," September, 1992.

Masonry Professors Workshop, University of Washington, "Masonry Education and Research at Washington State University," November, 1991.

Tau Beta Pi, Washington State University student chapter, "Seismic Damage to Buildings and Bridges in Recent Earthquakes," October, 1991.

Washington State Transportation Research Council, Seattle, Washington, "Seismic Retrofitting of Bridge Columns," May, 1991.

Transportation Research Board Annual Meeting, Washington, D.C., "Behavior and Design of Moment-Reducing Bridge Column-Foundation Connection Details," January, 1991.

American Society of Civil Engineers, Inland Empire Section, Spokane, Washington, "Damage to Buildings and Bridges in the Loma Prieta Earthquake," October, 1990.

Forth Rail Bridge Centenary Structures Conference, Edinburgh, Scotland, "Punching Shear in the Perimeter Walls of Concrete Offshore Structures," August, 1990.

Fifth North American Masonry Conference, Urbana, Illinois, "Ultimate Strength Behavior of Reinforced Concrete Block Masonry Walls," June, 1990.

Washington State Transportation Research Council, Seattle, Washington, "Seismic Research at Washington State University," May, 1990.

Transportation Research Board Annual Meeting, Washington, D.C., "Moment-Reducing Hinge Details for the Bases of Bridge Columns," January, 1989.

American Concrete Institute Fall Convention, San Diego, California, "Punching Shear in Arctic Offshore Structures," October, 1989.

NSF Bridge Research in Progress, Des Moines, Iowa, "Plastic Hinge Details for the Bases of Architecturally Oversized Bridge Columns," September, 1988.

Washington State Transportation Commission, Spokane, Washington, "Bridge Research at Washington State University," May, 1988.

#### **GRADUATE STUDENT ADVISING (total of 51 MS and 4 PhD):**

Spencer Boyle, M.S. Thesis title: "Use of Recycled Concrete as Aggregate in Portland Cement Concrete Pavements – Source C." Date of graduation: December 2013.

Tim Spry, M.S. Thesis title: "Use of Recycled Concrete as Aggregate in Portland Cement Concrete Pavements – Source B." Date of graduation: August 2013.

Danny Mjelde, M.S. Thesis title: "Use of Recycled Concrete as Aggregate in Portland Cement Concrete Pavements – Source A." Date of graduation: July 2013.

Louis de Fontenay, M.S. Thesis title: "Rocking Exterior Cladding Panels in High-Rise Building." Date of graduation: December 2012.

Will Cyrier, M.S. Thesis title: "Performance of Masonry Shear Walls with Boundary Elements Under Seismic Loading." Date of graduation: August 2012.

Christina Kapoi, M.S. Thesis title: "Experimental Performance of Masonry Shear Walls Under Seismic Loading." Date of graduation: February 2012.

Jake Sherman, M.S. Thesis title: "Effects of Key Design Parameters on the Seismic Performance of Masonry Shear Walls." Date of graduation: October 2011.

Brian Walkenhauer, M.S. Thesis title: "Seismic Retrofit Of Cruciform-Shaped Columns In The Aurora Avenue Bridge Using FRP Wrapping," Date of graduation: May 2010.

Tim Vaughan, M.S. Thesis title: "Evaluation of Masonry Wall Performance Under Cyclic Loading," Date of graduation: May 2010.

Christophe de Vial, M.S. Thesis title: "Masonry Lap Splices with Reduced Cover." Date of graduation: December 2009.

Debbie Matthews, M.S. Thesis title: "Effects of Blast Loading on Prestressed Concrete Bridges." Date of graduation: December 2008.

Courtney Davis, M.S. Thesis title: "Recommendations for Changes in the Shear Design Provisions in the MSJC Masonry Building Code." Date of graduation: December 2008.

Jingjing Liu, M.S. Nonthesis. Date of graduation, August 2008.

Jon Mjelde, M.S. Thesis title: "Performance of Reinforcement Lap Splice in Masonry Shear Walls," Date of graduation: May 2008.

Thomas Hervillard, M.S. Thesis title: "Use of Polymer Fibers for Improving Ductility in Masonry." Date of graduation: December 2005.

Matt Snook, M.S. Thesis title: "Effects of Confinement Reinforcement on the Performance of Concrete Masonry Shear Walls." Date of graduation: August 2005.

Nasim Shattarat, Ph.D. Dissertation title: "Seismic Behavior and Retrofitting of Knee Joints in Bridges." Date of graduation: August 2004.

Kirk Malmquist, M.S. Nonthesis, Date of graduation: August 2004.

Matt Leslie, M.S. Nonthesis, date of graduation: May 2004.

Ian Eikanas, M.S. Co-advisor. Thesis title: "Experimental Testing of Masonry Shear Walls Under Seismic Loading." Date of graduation: May 2003.

Scott Peterson, Ph.D. Dissertation title: "Experimental and Analytical Predictions of Response in the Evergreen Point Floating Bridge Under Storm Conditions." Date of graduation: December 2002.

Joel Tubbs, M.S. Thesis title: "Performance of Anchor Bolts Embedded in Masonry." Date of graduation: December 2002.

Casey Tallon, M.S. Thesis title: "Reinforcing Limits for Masonry Shear Walls." Date of graduation: December 2001.

Anne Fabrello, M.S. Co-advisor. Thesis title: "Performance of Anchor Bolts in Masonry Under Combined Loading." Date of graduation: May 2001.

Kevin Haiar, M.S. Thesis title: "Performance and Design of Prototype Wood-Plastic Composite Sections." Date of graduation: May 2000.

Paul Rogness, M.S. Thesis title: "Use of Fiber Reinforcement as a Retrofit for R/C Columns." Date of graduation: May 1999.

Scott Peterson, M.S. Thesis title: "Application of Dynamic System Identification to Timber Bridges." Date of graduation: May 1999.

Moein El-Aaarag, M.S. Thesis title: "Retrofit of Split Concrete Bridge Columns." Date of graduation: May 1999.

Monique Paynter, M.S. Thesis title: "Composite Waterfront Structures." Date of graduation: December 1998.

Jason Thompson, M.S. Thesis title: "Behavior and Design of Reinforcement Splices in Concrete Masonry." Date of graduation: August 1997.

Timothy Mealy, M.S. Thesis title: "Seismic Performance and Retrofit of Multi-Column Bridge Bents." Date of graduation: May, 1997.

Scott Kuebler, M.S. Thesis title: "Evaluation of Seismic Retrofit Strategies for Multi-Column Bridge Bents." Date of graduation: May, 1997.

Mike Axthelm, M.S. Nonthesis. Date of graduation: May 1997.

Sherell Ehlers, M.S. Nonthesis. Date of graduation: December 1996.

Omar Jaradat, Ph.D. Dissertation title: "Seismic Evaluation of Existing Bridge Columns." Date of graduation: August, 1996.

Yong Jin Yu, M.S. Thesis title: "A Comparative Study of Analysis Methods for Assessing Seismic Response." Date of graduation: August, 1996.

Steve Hawk, M.S. Thesis title: "Structural Behavior of Insulated Concrete Masonry Prisms and Walls." Date of graduation: May, 1996.

Chris Sanders, M.S. Nonthesis. Date of graduation: May 1996.

Jason N. Peterson, M.S. Thesis title: "The Effects of Splits and Checks on the Shear Strength of Lumber Beams." Date of graduation: December, 1995.

Carol Smith, M.S. Thesis title: "Experimental Tests of Shaft/Column Connections." Date of graduation: December, 1995.

Steven S. Asselin, M.S. Thesis title: "Effects of Member Size on the Shear Strength of Sawn Lumber Beams." Date of graduation: May, 1995.

Steven Goold, M.S. Nonthesis. Date of graduation: August, 1994.

Todd Petrik, M.S. Thesis title: "Effects of Block and Grout Strengths on the Strength of Masonry Prisms." Date of graduation: May, 1994.

Fourat Binous, M.S. Nonthesis. Date of graduation: May, 1994.

Thad D. Saunders, M.S. Thesis title: "Seismic Retrofit of Pile-Supported Footings of Bridges." Date of graduation: December, 1993.

James Cahill, M.S. Nonthesis. Date of graduation: December, 1993.

John Blake, M.S. Thesis title: "Lap Splices in Reinforced Masonry Walls." Date of graduation: August, 1993.

Grant C. Buckingham, M.S. Thesis title: "Use of Overlapping Spirals in Noncircular Bridge Columns." Date of graduation: May, 1992.

Ruth A. McLain, M.S. Thesis title: "Reinforced Concrete Masonry Walls Under Combined Axial and Flexural Loading." Date of graduation: August, 1991.

Laura L. Bernards, M.S. Thesis title: "Seismic Retrofitting of Rectangular Bridge Columns For Shear." Date of graduation: May, 1991.

Kuang Y. Lim, Ph.D. Dissertation title: "Moment-Reducing Hinge Details for the Bases of Bridge Columns." Date of graduation: May, 1990.

Roger L. Heeringa, M.S. Thesis title: "Ultimate Strength Flexural Behavior of Reinforced Concrete Block Masonry Walls." Date of graduation: August, 1989.

Yung-Ho Won, M.S. Thesis title: "The Use of Basalt Fiber as Reinforcement for Concrete." Date of graduation: May, 1989.

John S. Lovrovich, M.S. Thesis title: "Effects of Span-to-Thickness Ratio on the Punching Shear Behavior of Reinforced Concrete Slabs." Date of Graduation: August, 1988.

#### **EXTERNAL REVIEWER FOR DOCTORAL EXAMINATIONS:**

Voon, K.C., Ph.D., Department of Civil and Environmental Engineering, University of Auckland, New Zealand. Dissertation title: "In-Plane Seismic Design of Concrete Masonry Structures." 2007.

Bright Ng'Andu Ph.D., Technische Universiteit Eindhoven, The Netherlands. Dissertation title: "Bracing Steel Frames with Calcium Silicate Element Walls." 2006.

#### **UNDERGRADUATE HONORS PROGRAM THESIS ADVISING:**

Charles Smith, B.S. Thesis title: "Seismic Retrofitting of Split Bridge Columns." Date of graduation: December, 1998.

Matt Brightman, B.S. Thesis title: "Energy Dissipation in Bridges as a Means of Seismic Retrofitting." Date of graduation: December, 1998.

Aaron M. Schutt, B.S. Thesis title: "Permafrost: A Challenge of Arctic Engineering." Date of graduation: May, 1996.

Mary C. Monahan, B.S. Thesis title: "Experimental Testing of a Reinforced Concrete Frame Under Lateral Loads." Date of graduation: May, 1993.

Carol L. Verbrugge, B.S. Thesis title: "Torsion Behavior of Circular Reinforced Concrete Columns." Date of graduation: December, 1992.

John K. Parsons, B.S. Thesis title: "Splice Behavior in Reinforced Concrete Beams," Date of graduation: May, 1992.

Matthew F. Russell, B.S. Thesis title: "An Analytical Literature Review of Basalt Fiber Reinforced Concrete," Date of graduation: May, 1988.