

# STEPHEN T. MUENCH

## *Curriculum Vitae*

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## EDUCATIONAL HISTORY

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University of Washington, Seattle WA  
Doctor of Philosophy in Civil Engineering  
2004

Dissertation: A Computer-Based Multimedia Pavement Training Concept for use in a Self-Managed Learning Program for Engineers

University of Washington, Seattle WA  
Masters of Science in Civil Engineering  
1998

Thesis: Asphalt Concrete Temperature Differential Damage in Washington State

University of Washington, Seattle WA  
Bachelor of Science in Civil Engineering  
1990

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## EMPLOYMENT HISTORY

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University of Washington  
Seattle, WA, USA  
Assistant Professor, Department of Civil & Environmental Engineering 9/2004 – present

University of Washington  
Seattle, WA, USA  
Research Assistant, Department of Civil & Environmental Engineering 1/2001 – 6/2004

Perteet, Inc.  
Everett, WA, USA  
Design Engineer II 1/1999 – 12/2000

University of Washington  
Seattle, WA, USA  
Research Assistant, Department of Civil & Environmental Engineering 9/1997 – 12/1998

United States Navy Various locations and positions (see below) Nuclear Submarine Officer	8/1990 – 9/1997
Naval Submarine Training Center Pacific Pearl Harbor, HI Tactics Training Department Director	8/1996 – 9/1997
Naval Submarine Training Center Pacific Pearl Harbor, HI Senior Instructor	5/1995 – 8/1996
USS WILLIAM H. BATES (SSN 680) Pearl Harbor, HI Quality Assurance Officer, Division Officer, Watch Officer	4/1992 – 5/1995
Submarine School Groton, CT Student	1/1992 – 3/1992
Nuclear Propulsion Training Unit, Idaho National Engineering Lab. Idaho Falls, ID Student	6/1991 – 12/1991
Naval Nuclear Power School Orlando, FL Student	11/1990 – 5/1991
Combined Federal Campaign Seattle, WA Loaned Executive	8/1990 – 11/1990

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### AWARDS AND HONORS

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28<sup>th</sup> Annual South African Transportation Conference (SATC) best paper award, 2009  
Nominated for Distinguished Teaching Award, 2009, University of Washington  
K.B. Woods Award, 2004, Transportation Research Board  
Premier Award, 2003, National Engineering Education Delivery System (NEEDS)  
R1edu Award, 2003, R1edu (34-university consortium)  
Valle Scholar, 1997-1998, Valle Scholarship and Scandinavian Exchange Program  
Coral Sales Scholarship, 1998, Coral Sales Company  
Naval Reserve Officer Training Corps (NROTC) 4-year scholarship, 1986-1990, U.S. Navy  
Navy Commendation Medal, 1997, U.S. Navy  
Navy Achievement Medal (3 awards), 1992, 1993, 1995, U.S. Navy  
Navy Expeditionary Medal, 1992, U.S. Navy

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### AFFILIATIONS AND OTHER APPOINTMENTS

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None.

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## PUBLICATIONS

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Superscript legend: 1: my graduate student, 2: other graduate student, 3: institutional collaborator, 4: external collaborator

### Refereed archival journal publications

1. Pierce, L.M.<sup>1</sup>; Munden, H.J.<sup>2</sup>; Mahoney, J.P.<sup>3</sup> **Muench, S.T.**; Waters, M.<sup>4</sup> and Uhlmeyer, J.<sup>4</sup> (in press). Quieter HMA Pavements in Washington State. Accepted for publication in the *Transportation Research Record*.
2. Li., J.<sup>1</sup>; Mahoney, J.P.<sup>3</sup>, **Muench, S.T.** and Pierce, L.M.<sup>1</sup> (2008). Bituminous Surface Treatment Protocol for the Washington State Department of Transportation. *Transportation Research Record 2084*, TRB, National Research Council, Washington, D.C., pp. 65-72.
3. Kristjansdottir, O.<sup>1</sup>; **Muench, S.T.**; Michael, L.<sup>4</sup> and Burke, G.<sup>4</sup> (2007). Assessing the Potential for Warm Mix Asphalt Technology Adoption. *Transportation Research Record 2040*, TRB, National Research Council, Washington, D.C., pp. 91-99.
4. **Muench, S.T.**; Mahoney, J.P.<sup>3</sup>; Wataru, W.<sup>4</sup>; Chong, L.<sup>4</sup> and Romanowski, J.<sup>4</sup> (2007). Best Practices for Long-Lasting Low-Volume Pavements. *Journal of Infrastructure Systems*, Vol. 13, No. 4. pp. 311-320.
5. Li., J.<sup>1</sup>; **Muench, S.T.**; Mahoney, J.P.<sup>3</sup>; Sivaneswaran, N.<sup>4</sup>; Pierce, L.M.<sup>1</sup> and White, G.C.<sup>3</sup> (2006). Calibration of NCHRP 1-37A software for the Washington state department of transportation: Rigid pavement portion. *Transportation Research Record 1949*, TRB, National Research Council, Washington, D.C., pp. 43-53.
6. **Muench, S.T.** (2006). A Self Managed Learning Model for Civil Engineering Training. *Journal of Professional Issues in Engineering Education and Practice*, Vol. 132, No. 3, pp. 209-216.
7. Li., J.<sup>1</sup>; **Muench, S.T.**; Mahoney, J.P.<sup>3</sup>; Pierce, L.M.<sup>1</sup>; Sivaneswaran, N.<sup>4</sup> and White, G.C.<sup>3</sup> (2005). The Highway Development and Management System in Washington State: Calibration and Application for the Department of Transportation Road Network. *Transportation Research Record 1933*. Transportation Research Board, National Academies, Washington, D.C., pp. 53-61.
8. **Muench, S.T.** and Mahoney, J.P.<sup>3</sup> (2004). A Computer-Based Multimedia Pavement Training Tool for Self-Directed Learning. In *Transportation Research Record 1896*. TRB, National Research Council, Washington, D.C., pp. 3-12. Winner of the 2004 K.B. Woods Award best paper in the area of design and construction of transportation facilities.
9. **Muench, S.T.**; White, G.C.<sup>3</sup>; Mahoney, J.P.<sup>3</sup>; Turkiyyah, G.M.<sup>3</sup>; Sivaneswaran, N.<sup>4</sup>; Pierce, L.M.<sup>4</sup> and Li, J.<sup>1</sup> (2004). Washington State's Web-Enabled Pavement Management System. *Transportation Research Record 1889*. TRB, National Research Council, Washington, D.C., pp. 35-46.

10. Mahoney, J.P.<sup>3</sup>; **Muench, S.T.**; Pierce, L.M.<sup>4</sup>; Read, S.A.<sup>4</sup>; Jakob, H.<sup>4</sup>; Moore, R.<sup>4</sup> (2000). Construction-Related Temperature Differentials in Asphalt Concrete Pavement: Identification and Assessment. *Transportation Research Record 1712*. TRB, National Research Council, Washington, D.C., pp. 93-100.

*Journal articles in preparation*

1. **Muench, S.T.**; Mahoney, J.P.<sup>3</sup> White, G.C.<sup>4</sup> (submitted August 2009). Pavement Interactive: Pavement Knowledge Transfer with Web 2.0. Submitted for review to the *ASCE Journal of Transportation Engineering*.
2. **Muench, S.T.**; Anderson, J.L.<sup>1</sup> and Soderlund, M.<sup>1</sup> (Submitted June 2009). Greenroads: a sustainability performance metric for roadways. Submitted to *Transportation Research Part D: Transport and Environment*.
3. **Muench, S.T.** and Anderson, J.L.<sup>1</sup> (Submitted June 2009). Weighting a sustainability performance metric for roadways: Greenroads. Submitted to *Transportation Research Part D: Transport and Environment*.
4. **Muench, S.T.** Moomaw, T.<sup>4</sup> and Willoughby, K.A.<sup>4</sup> (submitted July 2009) De-bonding of hot mix asphalt pavements in Washington State. Submitted for review to the *International Journal of Pavement Engineering*.
5. Mahoney, J.P.<sup>3</sup>; Uhlmeyer, J.S.<sup>4</sup>; Morin, P.<sup>4</sup>; Luhr, D.<sup>4</sup>; Willoughby, K.A.<sup>4</sup>; **Muench S.T.** and Baker, T.<sup>4</sup> (submitted July 2009). Pavement Preservation Funding and Performance in Washington State. Submitted for review to the *Transportation Research Record*.
6. Weiland, C.<sup>1</sup> and **Muench, S.T.** (submitted July 2009). Life Cycle Assessment of Interstate Highway Pavement Reconstruction Options in Seattle, Washington. Submitted for review to the *Transportation Research Record*.
7. Pierce, L.M.<sup>1</sup>; **Muench, S.T.** and Mahoney, J.P.<sup>3</sup> (submitted July 2009). Long-Term Performance of Dowel Bar Retrofit in Washington State. Submitted for review to the *Transportation Research Record*.
8. **Muench, S.T.** (submitted July 2009). Roadway Construction Sustainability Impacts: A Life Cycle Assessment Review. Submitted for review to the *Transportation Research Record*.
9. Li, J.<sup>1</sup>; Uhlmeyer, J.S.<sup>4</sup>; Mahoney, J.P.<sup>3</sup>; **Muench, S.T.** (submitted July 2009). Use of the AASHTO 1993 Guide, MEPDG and Historical Performance to Update the WSDOT Pavement Design Catalog. Submitted for review to the *Transportation Research Record*.
10. **Muench, S.T.**; Anderson, J.L.<sup>1</sup> and Bevan, T.<sup>4</sup> (submitted August 2009). Greenroads: A Sustainability Performance Metric for Roadways. Submitted for review to the *Transportation Research Record*.
11. Bodvarsson, G.A.<sup>1</sup>; **Muench, S.T.** and Wang, Y.<sup>3</sup> Effects of loop detector installation on portland cement concrete lifespan: case study on I-5. In preparation for submission to *ASCE Journal of Transportation Engineering*.

## Conference proceedings and other non-journal articles

- *Fully refereed publications*

1. Pierce, L.M.<sup>4</sup>; Mahoney, J.P.<sup>3</sup>; **Muench, S.T.**; Uhlmeier, J.<sup>4</sup> and Luhr, D.<sup>4</sup> (accepted for presentation 2010). Utilization of Bituminous Surface Treatments for Maintaining Hot Mix Asphalt Pavements Due to Restricted Budgetary Constraints. *First International Conference on Pavement Preservation*, 12-16 April 2010, Newport Beach, CA.
2. Steyn, W.<sup>4</sup>; Mahoney, J.P.<sup>3</sup>; **Muench, S.T.** and White, G.C.<sup>4</sup> (2009). *Implementation of Interactive Web-Based Training Tools in Pavement Engineering*. 28<sup>th</sup> Annual South African Transportation Conference (SATC), 6-9 July 2009, Pretoria, South Africa. Winner of Best Paper award.
3. **Muench, S.T.**; Anderson, J.L.<sup>1</sup> and Soderlund, M.<sup>1</sup> (2009). Greenroads: Development of a Sustainability Rating System for Roadways. Presentation at the *Transportation Research Board's 2009 Annual Meeting*, 11-15 January 2009, Washington, DC.
4. Uhlmeier, J.S.<sup>4</sup>; Pierce, L.M.<sup>1</sup>; Kinne, C.<sup>4</sup>; Anderson, K.A.<sup>4</sup>; **Muench, S.T.**; Mahoney, J.P.<sup>3</sup> and Valentine, C.<sup>4</sup> (2008). Cold In-Place Recycling in Washington State. *Proceedings of the International ISAP Symposium: Asphalt Pavements and the Environment*, 18-20 August 2008, Zurich, Switzerland, pp. 119-131.
5. **Muench, S.T.**; Soderlund, M.<sup>1</sup> and Willoughby, K.A.<sup>1</sup> (2008). Green Roads: an Environmental Rating System for Road Design and Construction. *Proceedings of the International ISAP Symposium: Asphalt Pavements and the Environment*, 18-20 August 2008, Zurich, Switzerland, pp. 611-622.
6. Soderlund, M.<sup>1</sup>; **Muench, S.T.**; Willoughby, K.<sup>4</sup>; Uhlmeier, J.<sup>4</sup> and Weston, J.<sup>4</sup> (2008). Green Roads: A Sustainability Rating System for Roadways. Presented at the *Transportation Research Board's 2008 Annual Meeting*, 13-17 January 2008, Washington, D.C.
7. Ozolin, B.<sup>1</sup>; **Muench, S.T.**; Uhlmeier, J.<sup>4</sup> and Pierce, L.M.<sup>1</sup> (2007). CA4PRS Use in Washington State. *International Conference on Optimizing Paving Concrete Mixtures and Accelerated Concrete Pavement Construction and Rehabilitation*, 7-9 November 2007, Atlanta, GA.
8. **Muench, S.T.**; Ozolin, B.<sup>1</sup>; Uhlmeier, J.<sup>4</sup> and Pierce, L.M.<sup>1</sup> (2007). Rapid Concrete Panel Replacement in Washington State: Lessons Learned. *International Conference on Optimizing Paving Concrete Mixtures and Accelerated Concrete Pavement Construction and Rehabilitation*, 7-9 November 2007, Atlanta, GA.
9. **Muench, S.T.**; Mahoney, J.P.<sup>3</sup>; Pierce, L.M.<sup>1</sup>; Uhlmeier, J.<sup>4</sup> and Anderson, K.<sup>4</sup> (2006). The Evolution of Long-Life Concrete Pavements in Washington State. *Proceedings of the International Conference on Long-Life Concrete Pavements*, 24-27 October 2006, Chicago, IL.

10. **Muench, S.T.**; White, G.C.<sup>3</sup>; Mahoney, J.P.<sup>3</sup>; Sivaneswaran, N.<sup>4</sup>; Pierce, L.M.<sup>4</sup> (2004). *Maintenance and Rehabilitation of Low-Volume Pavements in Washington State*. Transportation Research Board 2005 annual meeting, Washington, D.C.
  11. **Muench, S.T.**; Mahoney, J.P.<sup>3</sup>; White, G.C.<sup>3</sup>; Pierce, L.M.<sup>4</sup> and Sivaneswaran, N.<sup>4</sup> (2004). Long-Lasting Low-Volume Pavements in Washington State. *Proceedings of the International Symposium on the Design and Construction of Long Lasting Asphalt Pavements*. June 7-9, 2004, Auburn, AL.
  12. White, G.C.<sup>3</sup>; **Muench, S.T.**; Mahoney, J.P.<sup>3</sup>; Turkiyyah, G.M.<sup>3</sup>; Sivaneswaran, N.<sup>4</sup> and Pierce, L.M.<sup>4</sup> (2004). PMSView: A Web-Enabled Pavement Management System. *Proceedings: 6<sup>th</sup> International Conference on Managing Pavements*. October 19-24, 2004, Brisbane, Australia.
  13. **Muench, S.T.** and Mahoney, J.P.<sup>3</sup> (2004). Computer-Based Training for an Expanding Workforce. *8<sup>th</sup> Conference on Asphalt Pavements for Southern Africa*, Sun City, North West Province, South Africa, September 12-16, 2004.
- **Refereed by abstract only**
    1. Anderson, J.L.<sup>1</sup>; **Muench, S.T.** and Soderlund, M.<sup>1</sup> (2009). Greenroads: A Sustainability Rating System for Roadways. *Engineering Sustainability 2009: Innovations that Span Boundaries*, 19-21 April 2009, Pittsburgh, PA.
    2. White, G.C.<sup>3</sup>; **Muench, S.T.**; Mahoney, J.P.<sup>3</sup>; Turkiyyah, G.M.<sup>3</sup>; Sivaneswaran N.<sup>4</sup>; Pierce, L.M.<sup>4</sup>; Ahmed K.M.<sup>3</sup> (2004). PMSView: A Web-Enabled GIS Application for Managing Pavements. *ITI Fifth Arab GIS Conference: The Role of the Geoinformation Services in the E-Government*, Cairo, 6-7 September 2004.

#### **Abstracts, letters, non-refereed papers, technical reports**

- **Technical Reports**
  1. Pierce, L.M.<sup>1</sup> and **Muench, S.T.** (2009). *Evaluation of Dowel Bar Retrofit for Long-Term Pavement Life in Washington State*. WA-RD 727.1, Washington State Department of Transportation (WSDOT), Olympia, WA.
  2. **Muench, S.T.** and Moomaw, T.<sup>4</sup> (2009). *De-Bonding of Hot Mix Asphalt Pavements in Washington State: An Initial Investigation*. WA-RD 712.1 and TNW 2008-10. Washington State Department of Transportation (WSDOT) and Transportation Northwest Regional Center X (TransNow), Seattle, WA.
  3. Brown, E.R.<sup>4</sup>; Ahlrich, R.<sup>4</sup>; Rollings, R.<sup>4</sup>; **Muench, S.T.**; Prowell, B.<sup>4</sup>; Cooley, A.<sup>4</sup> and James R.<sup>4</sup> (2008). *Airfield Asphalt Pavement Construction Best Practices Manual*. AAPT Project 05-01. Auburn University, Auburn, AL.
  4. Li, J.<sup>1</sup>; Mahoney, J.P.<sup>3</sup> and **Muench, S.T.** (2007). *Bituminous Surface Treatment Protocol*. WA-RD 652.1. Washington State Department of Transportation (WSDOT), Olympia, WA.

5. Ozolin, B.<sup>1</sup> and **Muench, S.T.** (2007). *Rapid Pavement Construction Tools, Materials and Methods*. WA-RD 670.1. Washington State Department of Transportation (WSDOT), Olympia, WA.
6. Li, J.<sup>1</sup>; **Muench, S.T.** and Mahoney, J.P.<sup>3</sup> (2004). *PCC Models for Rehabilitation/Reconstruction Decision-Making*. WA-RD 588.2. Washington State Department of Transportation (WSDOT), Olympia, WA.
7. Li, J.<sup>1</sup>; **Muench, S.T.**; Mahoney, J.P.<sup>3</sup>; White, G.C.<sup>3</sup>; Pierce, L.M.<sup>4</sup> and Sivaneswaran, N.<sup>4</sup> (2004). *Application of HDM-4 in the WSDOT Highway System*. WA-RD 588.1. WSDOT, Olympia, WA.
8. **Muench, S.T.** (2004). *A Computer-Based Multimedia Pavement Training Concept for use in a Self-Managed Learning Program for Engineers*. Doctoral Dissertation. University of Washington, Seattle, WA.
9. **Muench, S.T.** and Mahoney, J.P.<sup>3</sup> (2001). *A Quantification and Evaluation of WSDOT's Hot-Mix Asphalt Concrete Statistical Acceptance Specification*. WA-RD 517.1. Washington State Department of Transportation (WSDOT), Olympia, WA.
10. Willoughby, K.A.<sup>4</sup>; Mahoney, J.P.<sup>3</sup>; Pierce, L.M.<sup>4</sup>; Uhlmeyer, J.S.<sup>4</sup>; Anderson, K.W.<sup>4</sup>; Read, S.A.<sup>4</sup>; **Muench, S.T.**; Thompson, T.R.<sup>4</sup> and Moore, R.<sup>4</sup> (2001). *Construction-Related Asphalt Concrete Pavement Temperature Differentials and the Corresponding Density Differentials*. WA-RD 476.1. WSDOT, Olympia, WA.
11. **Muench, S.T.** (1998). *Asphalt Concrete Temperature Differential Damage in Washington State*. Master's Thesis. University of Washington, Seattle, WA.

#### Other significant research dissemination (web sites, software, Wikis, etc.)

- **Websites**

1. **Muench, S.T.**; Anderson, J.<sup>1</sup> and Koester, J.<sup>1</sup> (2008). *Greenroads*. [<http://www.greenroads.us>]. This is the website for our current Greenroads rating system research effort. Google Analytics shows 602 visits from 45 countries in the April-July 2009 time frame.

- **Multimedia Publications (electronic and web-based learning)**

1. **Muench, S.T.** (2007). *Hot Mix Asphalt Airport Construction Best Practice Manual*. Airfield Asphalt Pavement Technology Program (AAPTTP). Demonstration website done for AAPTTP Project 05-01. [<http://www.aaptt.org>]
2. **Muench, S.T.**; Mahoney, J.P.<sup>3</sup> and White, G.C.<sup>3</sup> (2006). *Pavement Interactive*. An online collaborative environment for pavements. Pavement Tools Consortium, Seattle, WA [<http://www.pavementinteractive.org>].
3. **Muench, S.T.**; Mahoney, J.P.<sup>3</sup> and Pierce, L.M.<sup>1</sup> (2005). *PTC Pavement Guide Interactive*. Pavement Tools Consortium, Seattle, WA. [<http://ptc.ce.washington.edu>].

4. **Muench, S.T.** and the National Center for Asphalt Technology<sup>4</sup>. (2004). *The Virtual Superpave Laboratory*. Publication ED-001. National Asphalt Pavement Association, Landham, MD. Also available online for review at [<http://training.ce.washington.edu/VSL>]
  5. **Muench, S.T.**; Mahoney, J.P.<sup>3</sup> and Pierce, L.M.<sup>4</sup> (2003). *WSDOT Pavement Guide Interactive*. Washington State Department of Transportation, Olympia, WA. Available from WSDOT Engineering Publications [<http://www.wsdot.wa.gov/fasc/EngineeringPublications/order.htm>]
  6. **Muench, S.T.** (2003). *HAPI Asphalt Pavement Guide*. Hawaii Asphalt Paving Industry, Honolulu, HI. [[http://www.hawaiiasphalt.com/pavement\\_guide.htm](http://www.hawaiiasphalt.com/pavement_guide.htm)]
  7. **Muench, S.T.** (2002). *WAPA Asphalt Pavement Guide*. Washington Asphalt Pavement Association, Seattle, WA. [[http://www.asphaltwa.com/pavement\\_guide.htm](http://www.asphaltwa.com/pavement_guide.htm)]
  8. **Muench, S.T.** and Mahoney, J.P.<sup>3</sup> (2002). *NAPA Guide for Hot Mix Asphalt Pavement*. Publication TAS-030. National Asphalt Pavement Association, Landham, MD.
- **Non-Refereed Articles**
    1. Cervarich, M.B.<sup>4</sup> and **Muench, S.T.** (2006). Online training: What, why, and how. *Better Roads*, v. 76, no. 11, p. 97-101.
    2. **Muench, S.T.** and Willoughby, K.A.<sup>4</sup> (2006). Research Pays Off: Preventing Pavement Failure Caused by Hot-Mix Asphalt Temperature Differentials: Washington State's Systematic Approach. *TR News*, No. 246, pp. 26-28.
    3. **Muench, S.T.** (2005). Perpetual Pavements for the Rest of Us: Long-Lasting Low-Volume Pavements. *HMAT*, Vol. 10, No. 1. pp. 22-24.
    4. **Muench, S.T.**; White, G.C.<sup>3</sup> and Willoughby, K.A.<sup>4</sup> (2004). New Tools for Hot Mix Asphalt Pavement. *Asphalt Magazine*. Asphalt Institute, Lexington, KY.
    5. **Muench, S.T.** (2003). Rolling a perfect score. *Roads & Bridges*, August 2003.

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## OTHER SCHOLARLY ACTIVITY

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### Invited lectures and seminars

1. Oregon Transportation Summit, Portland State University, Portland, OR, *Nuts and Bolts of Green Infrastructure*, 11 September 2009.
2. Washington State Department of Transportation Climate Change Activities Group, Olympia, WA, *Greenroads: a sustainability rating system for roadways*, 23 September 2008.
3. American Road and Transportation Builder's Association (ARTBA) headquarters, Washington, D.C. *Green Roads* Web-cast, 14 January 2008.

### Presentations given at conferences (presenter listed first)

1. **Muench, S.T.**, "Greenroads: a sustainability performance metric for roadways", *Western Association of State Highway and Transportation Officials (WASHTO) 2009 Annual Meeting*, Seattle, WA, July 12-16, 2009.
2. **Muench, S. T.**, "Sustainable Roadways: Greenroads", *American Publics Works Association (APWA) Washington Chapter Spring Conference*, Tacoma, WA, April 7-10, 2009.
3. **Muench, S.T.**, "Greenroads", *Road Builder's Clinic*, Coeur d'Alene, ID, 3-5 March 2009.
4. **Muench, S.T.**, Anderson, J.L.<sup>1</sup> and Weiland, C.<sup>1</sup>, "Warm Mix Asphalt in Washington State", *Rocky Mountain Asphalt Conference & Equipment Show*, Denver, CO, 18-20 February 2009.
5. **Muench, S.T.**, Anderson, J.L.<sup>1</sup> and Soderlund, M.<sup>1</sup>, "Greenroads: a rating system that distinguishes high performance sustainable new, reconstructed or rehabilitated roads", *Rocky Mountain Asphalt Conference & Equipment Show*, Denver, CO, 18-20 February 2009.
6. **Muench, S.T.** and Chan, C.<sup>4</sup>, "Greenroads", *Roads to Green 2009 Conference* sponsored by the Consulting Engineers of British Columbia (CEBC), Vancouver, B.C., 3 February 2009.
7. **Muench, S.T.** and Croft, C.<sup>4</sup>, Western Federal Lands Highway Division (WFLHD) Sustainability Best Practices and Greenroads. *WFLHD Winter Conference*, Portland, OR, 27 January 2009.
8. **Muench, S.T.**, "Warm Mix Asphalt", *Granite Northwest annual training*, Everett, WA, March 2009.
9. **Muench, S.T.**, "Greenroads", *Transportation Research Board 2009 Annual Meeting*, Washington, D.C., 11-15 January 2009.
10. **Muench, S.T.**, "Rating your road for sustainability: Greenroads and construction activities", *Transportation Research Board 2009 Annual Meeting*, Washington, D.C., 11-15 January 2009.

11. **Muench, S.T.**, “Integrating sustainability into our roads: learning, engineering and living green”, *Montana Joint Engineers Conference (JET)*, Helena, MT, 6-7 November 2008.
12. **Muench, S.T.**, “Greenroads”, *Rocky Mountain Asphalt User/Producer Group Annual Meeting*, Phoenix, AZ, 15-17 October 2008.
13. **Muench, S.T.** and Anderson, J.L.<sup>1</sup>, “Greenroads: a sustainability rating system for roadways”, *ASCE Transportation and Development Institute (T&DI) Sustainable Pavements Workshop*, Bellevue, WA, 15 October 2008.
14. Anderson, J.L.<sup>1</sup> and **Muench, S.T.**, “Greenroads: a sustainability rating system for roadways”, *ASCE Transportation and Development Institute (T&DI) Committee Meeting*, Bellevue, WA, 16 October 2008.
15. **Muench, S.T.**, Bevan, T.<sup>4</sup>, “Integrating sustainability into our roads: learning, engineering and living green”, *Washington State APWA Chapter Spring 2008 conference*, Ocean Shores, WA, 2-4 April 2008.
16. **Muench, S.T.** and Willoughby, K.A.<sup>4</sup>, “Green Roads”, *U.S. EPA Resource Conservation Challenge (RCC) Workshop*, Crystal City, Arlington, VA, 5-6 March 2008.
17. **Muench, S.T.**, “The Foundation and Future of Sustainable Roadways”. *Transportation Research Board’s 2008 Annual Meeting*, Washington, D.C., 13-17 January 2008.
18. **Muench, S.T.**, “Tack Coats: What we know, what we don’t know, what we need to find out, and why”, *19<sup>th</sup> Annual WAPA/WSDOT Joint Technical Conference*, Everett, Seattle, Tacoma, and Kelso, WA, March 2007.
19. **Muench, S.T.**, “Online Training for the Hot Mix Asphalt Industry”, *18<sup>th</sup> Annual WAPA/WSDOT Joint Technical Conference*, Seattle and Tacoma, WA, March 2006.
20. **Muench, S.T.**, “Long-Lasting Low-Volume Pavements in Washington State”, *Greater Iowa Asphalt Pavement Conference*, Des Moines, IA, 1-2 March 2006.
21. **Muench, S.T.**; White, G.C.<sup>3</sup>; Mahoney, J.P.<sup>3</sup>; Sivaneswaran, N.<sup>4</sup>; Pierce, L.M.<sup>4</sup>, “Long-Lasting Low-Volume Pavements in Washington State”, *59<sup>th</sup> Annual Ohio Transportation Engineering Conference*, Columbus, OH, 27-28 October 2005.
22. **Muench, S.T.**; White, G.C.<sup>3</sup>; Mahoney, J.P.<sup>3</sup>; Sivaneswaran, N.<sup>4</sup>; Pierce, L.M.<sup>4</sup>, “Long-Lasting Low-Volume Pavements in Washington State”, *Asphalt Pavement Innovations Conference*, Peoria, IL, 12-13 April 2005.
23. **Muench, S.T.** and Mahoney, J.P.<sup>3</sup>, “Virtual Superpave Laboratory”, *WASHTO Construction and Materials Meeting*, Seattle, WA, 22-24 March 2005.
24. **Muench, S.T.**, “Perpetual Pavements for the Rest of Us: Long-Lasting Low-Volume Pavements”, *Oregon Asphalt Conference*, Eugene, OR, 3 March 2005.
25. **Muench, S.T.**, “Pavement Tools”, *Oregon Asphalt Conference*, Eugene, OR, 3 March 2005.

26. **Muench, S.T.**; Mahoney, J.P.<sup>3</sup> and White, G.C.<sup>3</sup>, “New Computer Tools for Hot Mix Asphalt”, *2005 National Asphalt Pavement Association Annual Meeting*, Kona, HI, 12-15 February 2005.

### **Professional society memberships**

Transportation Research Board	2004 - present
International Society of Asphalt Pavements (ISAP)	2004 – present
American Society of Civil Engineers	2004 – 2006
American Society of Engineering Education	2009 – present

### **Other (reviews)**

- ***Archival journal paper reviews (number reviewed)***
  - Transportation Research Board (19)
  - ASCE Journal of Materials in Engineering (6)
  - ASCE Journal of Infrastructure Systems (4)
  - ASCE Journal of Professional Issues in Engineering Education and Practice (1)
  - International Journal of Pavement Engineering (3)
  - Journal of Transportation Engineering (3)
  
- ***Refereed conference reviews (number reviewed)***
  - Accelerated Pavement Testing International Conference (4)
  - Concrete Pavement Technology Program 2009 Conference (1)
  - ASCE 2008 Airfield and Highway Pavements Conference (1)
  
- ***Proposal reviews (number reviewed)***
  - The University of Washington Royalty Research Fund (1)
  - University Transportation Research Centers (7)

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**GRADUATE STUDENTS**

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**Chaired Doctoral Degrees**

<b>Student Name</b>	<b>Dissertation Title</b>	<b>Completed (Year)</b>	<b>Current Employer</b>
Manisa Veeravigrom	None yet	Qualification exam scheduled 10/2009	Current student
Jeralee Anderson	None yet	Qualification exam scheduled 10/2009	Current student Shear Moments, Inc. CH2M HILL (part time)
Yen Yu Lin	None yet	Qualification exam passed 3/2009 General exam scheduled 1/2010	Current student
Linda M. Pierce	Evaluation of Dowel Bar Retrofit for Long-Term Pavement Life in Washington State	2009	Applied Pavement Technology
Jianhua Li (co-chair w/Mahoney)	Calibration and Application of Analytical Tools for the Washington State Department of Transportation Road Network	2006	Washington State DOT

**Chaired Masters Degrees**

<b>Student Name</b>	<b>Level of Supervision</b>	<b>Thesis/Paper Title (if applicable)</b>	<b>Completed (Year)</b>	<b>Current Employer</b>
Abhishek Gupta	Project	None yet	2011 (expected)	Current student
Hendrik Schoeman	Project	None yet	2011 (expected)	Current student
Adlai Evans	Project	None yet	2011 (expected)	Current student
Russell Torgesen	Project	None yet	2010 (expected)	Current student
Logan Wallace	Project	None yet	2010 (expected)	Current student
John Beattie	Project	None yet	2010 (expected)	Current student
Fady Masoud	Project	None yet	2010 (expected)	Current student
Jared Koester	Thesis	None yet	2010 (expected)	Current student, Icon Materials
Chris Croft	Thesis	None yet	2009 (expected)	Current student
Ryan Mak	Thesis	None yet	2009 (expected)	Current student
Aleta Borschewa	Project	None yet	2009 (expected)	Current student, WSDOT
Ancelmo McCarthy	Project	A Case Study of the Greenroads Rating Credit	2009	U.S. Navy

<b>Student Name</b>	<b>Level of Supervision</b>	<b>Thesis/Paper Title (if applicable)</b>	<b>Completed (Year)</b>	<b>Current Employer</b>
		System and Website using a Washington State Department of Transportation Project		
Sam Comer	Project	None yet	2009	Cornerstone GC, Inc.
Jeralee Anderson	Thesis	Sustainability in Civil Engineering	2008	Ph.D. student with me now Shear Moments, Inc. CH2M HILL (part time)
Gutmundur Bodvarsson (co-chair w/Wang)	Thesis	Effects of loop detector installation on portland cement concrete lifespan: case study on I-5	2008	Consulting, Iceland
Jessyca Woodruff	Project	Pervious Concrete	2008	Consulting, USA
Masoud Kayanda	Project	Workzone Impacts of Traffic Mitigation Strategies	2008	Washington State DOT
Konstantinos Kouvaras	Project	Evaluation of the Sustainability of Using Reclaimed Asphalt Pavement for the Production of Hot Mix Asphalt	2008	J&P-Avax S.A., Greece
Stephen Lampart	Project	Sustainability and the Use of B20 Biodiesel in Non-Road Construction Equipment	2008	U.S. Navy
Jeremy Siemens	Project	Construction Staking Productivity	2008	Unknown
Craig Weiland	Thesis	Life Cycle Assessment of Portland Cement Concrete Interstate Highway Rehabilitation and Replacement	2008	Kiewit Pacific, Inc.
Shane Celeen	Project	A Review of the Current Specifications and Practices of the Use of Recycled Concrete Aggregate Nationwide	2007	U.S. Army
Nancy Myers	Project	Stone Matrix Asphalt: The Washington Experience	2007	Spokane Community College
Jeremy Ramberg	Project	Stormwater Mitigation: A Case Study on the use of Porous Pavements, Filter Cartridges, and Retention Ponds to Mitigate Stormwater Runoff	2007	U.S. Navy
Eric McGarrah	Project	Evaluation of Current Practices of Reclaimed Asphalt Pavement/Virgin Aggregate as Base Course Material	2007	Washington State DOT
Alisa Cotter	Thesis	Best Practices for PCC Pavements in Washington State: Studded Tire Wear Mitigation	2007	Sellen Construction
Martina Söderlund	Thesis	Sustainable Roadway Design-A Model For An	2007	Stantec, Inc.

Student Name	Level of Supervision	Thesis/Paper Title (if applicable)	Completed (Year)	Current Employer
		Environmental Rating System		
Brett Ozolin	Thesis	Rapid Pavement Construction Tools, Materials and Methods	2007	BergerABAM
Olof Kristjansdottir	Thesis	Warm Mix Asphalt for Cold Weather Paving	2006	Mannvit Engineering, Iceland

### Other significant student supervision

- *Thesis Committee Participation*

Student Name	Level of Supervision	Thesis/Paper Title (if applicable)	Completed (Year)
Mike Hansen	Committee member	Assessment of the I-5 Portland cement concrete pavements of King County	2008
Ngan Ha Nguyen	Committee member	Quantitative safety analysis for intersections on Washington State two-lane rural highways	2007
Heather Munden	Committee member	Lower Noise Pavement Options for Washington State	2006
Joon-Ki Kim	Committee member	A numerical examination of freeway rear-end accidents considering the mechanism of accident occurrence	2004

- *Undergraduate Student Research Advising*

Student Name	Level of Supervision	Paper Title or Topic	Completed (Year)
Rosslyn Luke	Undergrad. Research	Greenroads	2009 – present
Nick Jones	Undergrad. Research	Greenroads	2009 – present
Paul Prigge	Undergrad. Research	Greenroads	2009 – present
Josh Hatfield	Undergrad. Research	Greenroads	2009 – present
Jared Koester	Undergrad. Research	Greenroads, Best Practices for Hot Mix Asphalt Airport Construction	2008 – present
John Blair	Undergrad. Research	De-bonding of hot mix asphalt pavements in Washington State: an initial investigation	2008

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**RESEARCH ACTIVITIES**

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**Funded Research**

<b>Funding Agency</b>	<b>Title</b>	<b>Total Amount (Subcontracts)</b>	<b>UW Match</b>	<b>Your Amount</b>	<b>Your Role, Other Pi's co-Pi's</b>	<b>Dates (start-finish)</b>
NCHRP	NCHRP Project 01-46: Handbook for Pavement Design, Construction and Management	\$400,000		\$20,000	Role: Co-PI as part of Pavia Systems, Inc. PI: Linda Pierce (AP Tech, \$225k) Co-PI: Pavia Systems, Inc. (\$175k total incl. Muench amt.)	2009-2011
TransNow	Greenroads: Pilot Project Assessment	\$26,166		\$26,166	PI	2009-2010
NCHRP	NCHRP Project 08-74: Sustainability Performance Measures for State Departments of Transportation and Other Transportation Agencies	\$500,000		\$20,000	Role: Co-PI PI: J. Zietsman (Texas Transp. Institute, \$215k) Co-PIs: C. Porter (Cambridge Systematics, \$175k), S. Seskin (CH2M HILL, \$30k), J. Crossett (High Street Consulting, \$25k), R. Hall (Virginia Tech, \$10k), G. Marsden (U of Leeds, \$25k)	2009-2011
FHWA	Western Federal Lands Highway Division: Sustainability Best Practices and Greenroads Rating System	\$185,000		\$185,000	Role: PI	2008-2010
TransNow	Sustainable Roadway Design and Construction: Online Course	\$40,000		\$16,408	Role: Co-PI PI: S. Brown (WSU) Co-PI: M. Wolcott (WSU) Co-PI: S. Shen (WSU)	2008-2009
Washington State DOT	Determination of Optimum HMA Density based on Pavement Performance	\$100,000		\$50,000	Role: Co-PI (joint) Co-PI: J. Mahoney (UW CEE, \$50k)	2008-2010
Oregon DOT	Open Graded Friction Courses for the Pacific Northwest	\$140,000		\$107,000	Role: PI	2009-2010
State Pavement Technology	Green Roads: An Sustainability Rating System for Roadway Design and Construction	\$80,000		\$80,000	Role: PI	2008-2010

<b>Funding Agency</b>	<b>Title</b>	<b>Total Amount (Subcontracts)</b>	<b>UW Match</b>	<b>Your Amount</b>	<b>Your Role, Other Pi's co-Pi's</b>	<b>Dates (start-finish)</b>
Consortium (WA, CA, TX, MN)						
TransNow	Green Roads: An Environmental Ratings System for Roadway Design and Construction	\$49,120		\$49,120	Role: PI	2007-2009
Airfield Asphalt Pavement Technology Program (AAPTP)	AAPTP 05-01: Development of Hot Mix Asphalt Airport Construction Best Practice Manual	\$300,000		\$47,500	Role: Co-PI PI: E.R. Brown (Auburn University, \$145k) Co-PIs: R. Ahlrich (Burns, Cooley & Dennis, Inc., \$62.5k), R. Rollings (\$45k)	2006-2009
TransNow	De-Bonding Cracking in Hot Mix Asphalt Pavement	\$50,758		\$50,758	Role: PI	2006-2008
Washington State DOT	Best Practices for the Design and Construction of Portland Cement Concrete Pavements in Washington	\$180,000		\$180,000	Role: PI	2005-2009
Washington State DOT	Rapid Pavement Construction	\$50,000		\$50,000	Role: PI	2005-2007
Washington State DOT	AASHTO 2002 Design Guide Calibration	\$100,000		\$5,000	Role: Co-PI PI: J. Mahoney (UW CEE, \$95k)	2005-2007
Washington State DOT	Evaluation of Dowel Bar Retrofit for Long-Term Life	\$80,000		\$80,000	Role: PI	2005-2009
TransNow	Virtual Construction Paving Simulator	\$30,000		\$2,000	Role: Investigator PI: G. Turkiyyah (UW CEE, \$28k)	2005-2006
Pavement Tools Consortium (WA, CA, TX, MN, FL, MD, IL, ID, KS, FHWA)	Pavement Tools Consortium	\$1,000,000		\$50,000	Role: Investigator PI: J. Mahoney (UW CEE, \$1,000k)	2004-2009
<b>Total</b>		<b>\$3,311,044</b>		<b>\$1,018,952</b>		

### Pending Proposals

Funding Agency	Title	Total Amount (Subcontracts)	UW Match	Your Amount	Your Role, Other PI's co-PI's	Dates (start-finish)
NSF	NSF Engineering Research Center for Infrastructure Systems Research: A Systems Framework for Sustainable Interdependent Infrastructure	\$18,500,000		undet.	Role: Researcher	2010-2015
NCHRP	NCHRP Project 20-83(05) Climate Change and the Highway System: Impacts and Adaptation Approaches	\$1,000,000		\$100,000	Role: Co-PI PI: G. Flintsch (Virginia Tech)	2009-2012
NCHRP	NCHRP Synthesis 20-05/Topic 41-04 Sustainable Pavement Maintenance Practices	\$35,000		\$35,000	Role: PI	2010-2011
Oregon DOT	Greenroads: Pilot Project Assessment	\$110,000		\$110,000	Role: PI	2009-2012
<b>Total</b>		<b>\$19,645,000</b>		<b>\$245,000</b>		

### Unfunded Proposals (Optional)

Funding Agency	Title	Total Amount (Subcontracts)	UW Match	Your Amount	Your Role, Other PI's co-PI's	Dates (start-finish)
National Energy Technology Lab. (US DOE)	Renewable Energy Research and Development program: SMART Move: Smart Cars, Smart Roads, Smart Jobs	\$9,471,691		\$250,000	Role: Co-PI PI: M. Soma (UW EE)	2010-2013
NSF	Integrative Graduate Education and Research Traineeship Program (IGERT) Engineering: Theme - Eco-Highway Infrastructure	\$3,000,000		\$300,000	Role: Co-PI PI: J. Mahoney (UW CEE) Co-PI: M. Soma, M. Sarikaya (UW EE and MS)	2010-2015
NCHRP	SHRP 2 R06(A) Nondestructive Testing to Identify Bridge Deck Deterioration	\$800,000		\$63,598	Role: Co-PI PI: L. Khazanovich	2009-2012

<b>Funding Agency</b>	<b>Title</b>	<b>Total Amount (Subcontracts)</b>	<b>UW Match</b>	<b>Your Amount</b>	<b>Your Role, Other PI's co-PI's</b>	<b>Dates (start-finish)</b>
FHWA	CTIP (Coordinated Federal Lands Highway Technology Implementation Program): Green Roads: An Sustainability Rating System for Roadway Design and Construction	\$90,000		\$90,000	Role: PI	2008-2010
FHWA	Recycled Materials Resource Center (RMRC)	\$4,000,000			Role: Co-PI PI: M. Marasteanu (U. of Minn.) Co-PI: Mahoney (UW)	2007-2011
TransNow	Content Management System for Technology Transfer	\$15,902		\$15,902	Role: PI	2006-2008
TransNow	University of Washington Undergraduate Student Employment Desires	\$3,866		\$3,866	Role: PI	2006
TransNow	Stone Matrix Asphalt (SMA) in Washington State	\$8,943		\$8,943	Role: PI	2006-2008
Washington DOT	Performance-Based Contracting	\$50,000		\$50,000	Role: PI	2005-2007
US Dept of Education	Fund for the Improvement of Post Secondary Education (FIPSE): Interactive, Media-rich, Web-enabled Tools for Transportation Infrastructure Education	\$500,000		\$100,000	Role: Co-PI PI: J. Mahoney (UW)	2004-2007
NCHRP	NCHRP Project 10-69 Guidelines for Dowel Alignment in Concrete Pavements (2 <sup>nd</sup> of 6 applicants)	\$500,000			Role: PI Co-PI: G. Turkiyyah (UW)	2005-2007
NCHRP	NCHRP Project 9-40 Optimization of Tack Coat for HMA Placement (2 <sup>nd</sup> of an unknown number of applicants)	\$350,000		\$25,000	Role: Co-PI PI: R. West (National Center for Asphalt Technology, Auburn University)	2005-2006

**Un-sponsored research.**

<b>Title</b>	<b>Reason for Undertaking</b>	<b>Dates (Start, Finish)</b>
Sustainable Technologies in Roadway Design and Construction	This helps keep me current in transportation infrastructure sustainability and allows investigation of these technologies as opportunity arises. Generally, work arises out of collaboration with the Washington State DOT (WSDOT) and has resulted in enough material for publication. Also supplements the work on Greenroads.	2007-present
Long-Lasting Low-Volume Pavements	WS DOT had substantial data to suggest that the idea of a long-lasting (> 35 years) low-volume pavement was viable. I saw an opportunity to help WSDOT and produce some basic implementable guidelines on how to produce such pavements on purpose.	2004-2006

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DOCUMENTATION OF TEACHING EFFECTIVENESS

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**Courses Taught & Student Evaluations**

Course	Title	Quarter/Year	Credits	Enrollment	Eval.	Response	1 <sup>d</sup>	2 <sup>d</sup>	3 <sup>d</sup>	4 <sup>d</sup>	1-4 avg.
CEE 597	Pavement Construction & QC	Spring 2009	3	12	yes	8/12	4.5	4.5	4.7	4.8	4.6
CEE 596	Pavement Construction (online)	Spring 2009	3	18	yes <sup>b</sup>	16/18	4.4	4.4	3.9	4.3	4.3
CEE 595	Construction Materials (online)	Winter 2009	3	11	yes <sup>a</sup>						
CEE 404	Infrastructure Construction	Winter 2009	4	33	yes	27/33	4.5	4.6	4.9	4.8	4.7
CEE 306	Construction Engineering	Autumn 2008	3	61	yes	48/61	3.7	3.6	3.8	3.9	3.7
CEE 597	Pavement Construction & QC	Spring 2008	3	11	yes	9/11	4.8	4.8	4.9	4.9	4.9
CEE 596	Pavement Construction (online)	Spring 2008	3	13	yes <sup>b</sup>						
CEE 595	Construction Materials (online)	Winter 2008	3	10	yes <sup>a</sup>						
CEE 404	Infrastructure Construction	Winter 2008	4	47	yes	27/47	4.1	4.0	4.3	4.3	4.2
CEE 306	Construction Engineering	Autumn 2007	3	48	yes	36/48	4.0	3.8	4.2	4.1	4.0
CEE 599	Pavement Construction & QC	Spring 2007	3	8	yes <sup>c</sup>						
CEE 320	Transportation Engineering I	Spring 2007	3	59	yes	43/59	4.4	4.0	4.6	4.4	4.3
CEE 596	Pavement Construction (online)	Spring 2007	3	9	yes <sup>a</sup>	2/9	4.5	4.5	4.5	4.0	4.3
CEE 595	Construction Materials (online)	Winter 2007	3	8	yes <sup>a</sup>						
CEE 404	Infrastructure Construction	Winter 2007	4	31	yes	29/31	4.1	4.1	4.3	4.1	4.1
CEE 500	Trans/Construction Seminar	Winter 2007	1	18	no						
CEE 498	21 <sup>st</sup> C. Civil & Env. Engr.	Winter 2007	1	71	yes	33/71	4.6	4.6	4.8	4.6	4.6
CEE 596	Pavement Construction (online)	Spring 2006	3	16	yes <sup>a</sup>						
CEE 404	Infrastructure Construction	Spring 2006	4	38	yes	30/38	3.8	3.8	4.1	4.0	3.9
CEE 500	Trans/Construction Seminar	Winter 2006	1	12	no						
CEE 320	Transportation Engineering I	Winter 2006	3	39	yes	34/39	4.4	4.0	4.6	4.4	4.3
CEE 599	Construction Materials (online)	Winter 2006	3	16	yes <sup>a</sup>						
CEE 599	Pavement Construction (online)	Spring 2005	3	9	yes <sup>a</sup>						
CEE 599	Construction Materials (online)	Winter 2005	3	13	yes <sup>a</sup>						

Course	Title	Quarter/Year	Credits	Enrollment	Eval.	Response	1 <sup>d</sup>	2 <sup>d</sup>	3 <sup>d</sup>	4 <sup>d</sup>	1-4 avg.
CEE 500	Trans/Construction Seminar	Winter 2005	1	14	no						
CEE 320	Transportation Engineering I	Winter 2005	3	62	yes	49/62	4.1	4.0	4.5	4.5	4.4
CEE 500	Trans/Construction Seminar	Winter 2005	1	12	no						
CEE 320	Transportation Engineering I	Winter 2004	3	70	yes	55/70	4.1	4.0	4.4	4.3	4.2
CEE 599	Pavement Construction (online)	Spring 2004	3	9	yes <sup>a</sup>						
CEE 599	Pavement Construction (online)	Spring 2003	3	2	yes <sup>a</sup>						

Notes:

- a. This is a UW Educational Outreach (UWEO) course that was team taught with Professor Joe Mahoney. Duties were shared 50/50 in the teaching of this course. UWEO uses its own evaluation methods that closely mimic those used by UW. When I inquired about getting their historical records of course evaluations they were unable to produce any except CEE 596 for Spring 2007 and Spring 2009. From 2003-2006 mid-course evaluations were e-mailed to the instructor as they came in. These were generally very favorable but the response rate was low.
- b. This is a UW Educational Outreach (UWEO) course. UWEO uses its own evaluation methods that closely mimic those used by UW. Records other than for Spring 2007 and Spring 2009 are not available.
- c. This was the first time this course was taught. Although the official UW evaluation was not done, a non-standard evaluation was which is included in this dossier.
- d. 1 = the course as a whole, 2 = the course content was, 3 = the instructor's contribution to the course, 4 = the instructor's effectiveness in teaching the subject matter (for online courses 4 = the effectiveness of the delivery format was)

**Supervision of independent study (design projects and research).**

**Independent Study**

<b>Course</b>	<b>Student Name</b>	<b>Paper Title or Topic</b>	<b>Quarter</b>	<b># Students (Credit Hrs.)</b>
CEE 499	Sabine Eisma	Greenroads Evaluation of 2 <sup>nd</sup> and 4 <sup>th</sup> Avenue paving by the City of Seattle	Spring 2009	1(3)
CEE 600	Jeralee Anderson	The Green Structural Paradox	Autumn 2008	1(3)
CEE 600	Martina Soderlund	Investigate impacts of LEED standards on construction industry	Winter 2007	1(2)
CEE 499	Vahid Daneshford	Construction engineering careers – case study for Kiewit Pacific, Inc.	Autumn 2006	1(2)
CEE 499	Euneka Robinson-McCutcheon	Maturity Meter Use by WSDOT	Spring 2006	1(2)
CEE 499	Enrique Garcia	City of Seattle Internships	Spring 2006	1(2)
CEE 499	Maizer Oujidani	Costs of HMA/PCC for WSDOT	Spring 2006	1(2)
CEE 600	Olof Kristjánssdóttir	Use of TransCAD for Transportation design class	Winter 2006	1(2)
CEE 600	Thorsteinn Hermansson	Use of InRoads and Microstation for geometric design class	Winter 2005	1(3)

**List of other teaching contributions**

- **Curriculum Development**

**On campus courses.** I have had the opportunity to develop and teach seven in-person (as opposed to online) classes at UW in 5 years. All these courses were developed from scratch rather than inheriting an existing syllabus. These are:

- **CEE 100.** I took the initiative to develop this highly successful course for freshmen and sophomores that introduces them to Civil and Environmental Engineering. Currently, it has over 100 enrolled and in course surveys has been credited with recruiting top students to our department.
- **CEE 320.** I developed my version of this course as a Ph.D. student. This class, as taught now by Yinhai Wang and Anne Goodchild, still has most of the elements I developed as a Ph.D. student and new professor.
- **CEE 306.** In 2007 I switched my junior-level responsibility to CEE 306 to accommodate new teaching assignments in the division because I had the versatility to do so. I use some innovative teaching and have also included sustainability and environmental regulations components in this class.
- **CEE 360.** Along with my Ph.D. student, Jeralee Anderson, I took the initiative and helped develop a new required class for all juniors that covers sustainability in civil engineering.
- **CEE 404.** This class focuses on a real-world infrastructure construction project (repave I-5) and has strong elements of both transportation and construction. It usually attracts about 50 or so students but I limit enrollment to about 30 now.
- **CEE 500.** I redeveloped this seminar to focus on the elements of research/thesis writing since either a thesis or research paper is required of all transportation/construction graduate students.

- **CEE 597.** A graduate class in pavement construction, this one is case study based and all work is done online including writing construction case studies. We use the Pavement Interactive Wiki I helped develop through Joe Mahoney's work (<http://www.pavementinteractive.org/index.php?title=UW:CEE597>).

**Online courses.** I have developed and teach 2 online courses in the UW Construction Engineering Online Master's program that is administered by University of Washington Educational Outreach (UWEO). This has allowed me to become proficient at online education and is also a source of 20-30 CEE construction masters students, for which Joe Mahoney and I split advising duties.

- **CEE 596.** I co-developed this course on Pavement Construction with Joe Mahoney and now teach it solo. It is substantially different than the in-class 597 course.
- **CEE 595.** I co-developed and now co-teach this course on construction materials with Joe Mahoney.

**Center for Sustainable Engineering Workshop (2007)**

*Center for Sustainable Engineering*

As part of my effort to include sustainability in my academic work, I attended a competitively selected one-week workshop on sustainability and how to incorporate this into engineering curriculum. Workshop was run as part of a NSF grant to encourage sustainability in engineering.

**Asphalt Technology Professor Training Course (2002)**

*National Center for Asphalt Technology, Auburn University, AL*

As part of my effort to improve my technical abilities in transportation infrastructure, I attended a two-week intensive course on asphalt technology. Topics include construction practices, asphalt testing and grading, hot mix asphalt mix design, materials characterization, rehabilitation and maintenance.

• **Short Courses, Workshops and Other Educational Programs**

<b>Date</b>	<b>Course Title</b>	<b>Instruction Hrs.</b>	<b>Participants</b>
4/2009	Engineering Professional Programs PE Review Course	5	About 60
10/2008	Engineering Professional Programs PE Review Course	5	About 60
6/2008	HMA Pavements and Sustainability Seminar for Hawaii Asphalt Paving Industry/LTAP	8	About 100
3/2008	Engineering Professional Programs PE Review Course	5	About 60
9/2007	Engineering Professional Programs PE Review Course	5	About 50
3/2007	Engineering Professional Programs PE Review Course	5	About 70
10/2006	Engineering Professional Programs PE Review Course	5	About 50
10/2006	HMA Maintenance and Rehabilitation. 2 seminars for Hawaii Asphalt Paving Industry/LTAP	16	About 80

<b>Date</b>	<b>Course Title</b>	<b>Instruction Hrs.</b>	<b>Participants</b>
3/2006	Pavement Preservation, LCCA and Mix Design 1 seminar for Hawaii Asphalt Paving Industry/LTAP	8	About 100
3/2006	Engineering Professional Programs PE Review Course	5	About 60
6/2005	National Center for Asphalt Technology (NCAT) Professor Training Course	4	About 20
6/2005	HMA Structural Design 2 seminars for Hawaii Asphalt Paving Industry/LTAP	16	About 100
4/2005	Engineering Professional Programs PE Review Course	5	About 60
11/2004	HMA Construction 2 seminars for Hawaii Asphalt Paving Industry/LTAP	16	About 150
10/2004	Engineering Professional Programs PE Review Course	5	About 60
7/2004	HMA Maintenance and Rehabilitation. 2 seminars for Hawaii Asphalt Paving Industry/LTAP	16	About 100
4/2004	Engineering Professional Programs PE Review Course	5	About 80
4/2004	HMA Pavement Overview 3 seminars for Hawaii Asphalt Paving Industry/LTAP	24	About 200
10/2003	Engineering Professional Programs PE Review Course	5	About 80
6/2002	HMA Pavements 1 seminar for Hawaii Asphalt Paving Industry/LTAP	8	About 100

**Other supporting documents**

None.

**Teaching Awards, Nominations for Teaching Awards**

Nominated for Distinguished Teaching Award, 2009, University of Washington

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## SERVICE

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### Departmental service

- transp./const. search committee member (Y. Wang chair). CEE  
2008-2009
- committee (chair). CEE web  
2008-present
- committee (T. Larson chair). CEE ABET  
2008-present
- undergraduate education committee (P. Arduino chair). CEE  
2007-present
- strategic hiring committee member (R. Palmer chair) CEE  
2006-2007
- transp./hydrology search committee member (Rutherford/Palmer chair) CEE  
2005
- sportation/Construction division strategic plan (creator) Tran  
2005
- computer committee member (P. Arduino chair) CEE  
2005-2006
- transp./const./water resources search committee member (Turkiyyah chair) CEE  
2003

### University service

- without Borders – UW Student Chapter Advisor Engineers  
2009-present
- Washington Club Trustee Board Member University of  
2006-present

### Professional society and other service

- professional engineer in the state of Washington. Licensed  
License number: 37404 2000-present
- TRB committee AFH60 Flexible Pavement Construction. Organized 2 invited speaking  
sessions on sustainability topics at the Transportation Research Board (TRB) Annual  
Meeting (2007 and 2008). Member of  
2006-present
- TRB committee AFD40 Full-Scale Accelerated Pavement Testing. Drafted and published  
2010 meeting call for papers for committee. Friend of  
2008-present
- leadership group for the Sustainability Track of the Concrete Pavement Road Map,  
National Concrete Pavement Technology Center Member,  
2009-present
- GreenLITES Academic Advisory Council, NY State DOT Member,  
2008-present
- Testimony before the City and County of Honolulu Transportation Committee on the  
condition of pavements in Hawaii 2006

- Seminars on pavement and sustainability-related material done for the Hawaii Asphalt Paving Industry (HAPI) – the professional trade association for asphalt pavements in Hawaii. Payment for these seminars is far below market value; I view them as service to the community.

**Community service**

- Engineering Open House UW 2003-2006

**International, national or governmental service**

- hington State Department of Transportation (WSDOT) SR 520 Was 2008  
Bridge Replacement and HOV Program Noise Mitigation Expert Review Panel