Lawrence L. Sutter
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Materials Science & Engineering
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EDUCATION

Ph.D., Civil Engineering, Michigan Technological University, 2001.
Dissertation: "*An Approach to Characterizing Materials Related Distress in Portland Cement Concrete Pavements*"
Advisor: Dr. Thomas J. Van Dam

M.S., Civil Engineering - Environmental Engineering Option, Michigan Technological University, 1995
Thesis: "*Characterization of Lead-Bearing Phases in Municipal Waste Combustor Fly Ash*"
Advisor: Dr. George R. Dewey

B.S., Metallurgical Engineering - Mineral Processing Option, Michigan Technological University, 1991

A.A.S., Electrical Engineering Technology, Ohio Institute of Technology, 1976

PROFESSIONAL EXPERIENCE

2013 – present	Professor, Materials Science & Engineering
2007 – 2012	Director, Michigan Tech Transportation Institute
2007 – 2013	Director, University Transportation Center for Materials in Sustainable Transportation Infrastructure
2006 – 2013	Professor, Michigan Tech Transportation Institute
2006	Professor, School of Technology, Michigan Technological University
2005 – 2006	Program Chair, Graduate Programs, School of Technology, Michigan Technological University
2004 – 2006	Program Chair, Construction Management, School of Technology, Michigan Technological University
2004 – 2006	Program Chair, Surveying Engineering, School of Technology, Michigan Technological University
2002 – 2006	Associate Professor, School of Technology, Michigan Technological University
2001 – present	Adjunct Associate Professor, Department of Civil and Environmental Engineering, Michigan Technological University
1997 – 2002	Assistant Professor, School of Technology, Michigan Technological University
1995 – 1997	Instructor, General Engineering, Michigan Technological University
1992 –1998	Consulting Engineer, Superior Analytical, Houghton MI
1979 – 1994	Engineer/Scientist/Instructor, Department of Metallurgical Engineering, Michigan Technological University
1976 – 1979	Field Service Engineer, Philips Electronic Instruments, Skokie IL
1975 – 1976	Lab Technician, Ohio Institute of Technology, Columbus OH

PROFESSIONAL AFFILIATIONS

American Concrete Institute
American Society for Testing and Materials
Transportation Research Board

UNIVERSITY SERVICE ACTIVITIES

2014-2015	Faculty Fellow, Research Administration
2014	Presidential Blue Ribbon Panel on Government Relations
2011-present	University Research Internal Review Board (IRB)
2005 - 2007	Research Advisory Council, University Senate Representative
2005 - 2007	University Search Committee for Provost (Committee Chair)
2004, 2005	University Senate President Candidate
2004 - 2007	University Senator At-Large
2004 - 2007	University Senate Executive Committee Member
2004 - 2007	University Senate Research Committee Chair
2002 - 2004	University Senate Representative to the Computer Executive Committee
2001 - 2002	Member of the Provost's Select Committee to Review the School of Technology
1998 - 2003	University Senator for the School of Technology
1998 - 2003	University Senate Research Committee Member
1998 - 2000	University Senate Liaison Committee on Intellectual Property Policy

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RESEARCH FUNDING

1. Wisconsin Department of Transportation, $144, 958, "Laboratory Study for Comparison of Class C Versus Class F Fly Ash for Concrete Pavement ", Principal Investigator, 8/11 - 3/13.
2. Wisconsin Department of Transportation, $71,137, "Reduction of Minimum Required Weight of Cementitious Materials in WisDOT Concrete Mixtures – Phase II", Principal Investigator, 2/10 - 7/11.
3. U.S. Department of Transportation, $1,400,00, "Bridge Condition Assessment Using Remote Sensors," Co-Principal Investigator, 1/10 – 12/11.
4. National Concrete Paving Technology Center, $98,016, "A Study of Premature PCC Joint Deterioration", Principal Investigator, 12/09 -5/10.
5. National Concrete Paving Technology Center, $49,963, "Phase I – Joint Deterioration Study", Principal Investigator, 12/09 -5/10.
6. Great Lakes Cement Promotion Association, $35,000, Michigan Tech Concrete Initiative, Co-Principal Investigator, 9/08 - 8/09 *(Facility Support)*.
7. Wisconsin Department of Transportation, $114, 938, "Reduction of Minimum Required Weight of Cementitious Materials in WisDOT Concrete Mixtures", Principal Investigator, 10/07 - 12/10.
8. National Cooperative Highway Research Program, $749,125, "Specifications and Protocols for Acceptance Tests of Fly Ash Used in Highway Concrete", Principal Investigator, 7/07 - 7/11.
9. Great Lakes Cement Promotion Association, $35,000, Michigan Tech Concrete Initiative, Co-Principal Investigator, 9/07 - 8/08 *(Facility Support)*.
10. Michigan Department of Transportation, $304,826, "Impact of Hydrated Cement Paste Quality and Entrained Air-Void System on the Durability of Concrete", Principal Investigator, 4/07 - 12/10.
11. Michigan Department of Transportation, $180,182, "Efficient Use of Recycled Concrete in Transportation Infrastructure", Co-Principal Investigator, 4/07 - 4/09.
12. Federal Highway Administration, $2,450,000, "Alkali-Silica Reactivity (ASR) Development and Deployment Program", Co-Principal Investigator, 1/07 - 1/10.
13. Great Lakes Cement Promotion Association, $35,000, Michigan Tech Concrete Initiative, Co-Principal Investigator, 9/06 - 8/07 *(Facility Support)*.
14. United States Department of Transportation, $2,000,000, "University Transportation Center for Materials in Sustainable Transportation Infrastructure", 2006 Co-Principal Investigator, 2007 – 2012, Principal Investigator, 7/06 – 12/12,.
15. Michigan Department of Transportation, $350,000, "Evaluation of Concrete Pavements with Materials-Related Distress", Principal Investigator, 12/05 - 5/07.
16. Great Lakes Cement Promotion Association, $45,000, Michigan Tech Concrete Initiative, Co-Principal Investigator, 9/05 - 8/06 *(Facility Support)*.
17. Michigan Department of Transportation, $250,000 per yr. min., Master Contract - Renewal of the MTU Transportation Materials Research Center (TMRC), Co-Principal Investigator, 9/05 - 8/08 *(Facility Support)*.
18. WinEstimator Inc., $71,245, $0, Gift in Kind: Donation of 30 WinEST software licensees, Principal Investigator, 8/05 *(Facility Support)*.
19. Innovative Pavement Research Foundation, $175,977, Concrete Mixes and Pavement Construction for De-icing Facilities, Co-Principal Investigator, 9/04 - 3/06.
20. Great Lakes Cement Promotion Association, $35,000, Michigan Tech Concrete Initiative, Co-Principal Investigator, 9/04 - 8/05 *(Facility Support)*.
21. South Dakota Department of Transportation, $599,962, Investigation of the Long Term Effects of Magnesium Chloride and Other Concentrated Salt Solutions on Pavement and Structural Portland Cement Concrete, Principal Investigator, 9/03 - 9/06.
22. Wisconsin Department of Transportation, $199.965, Evaluation of Methods for Characterizing Air-Void Systems in Wisconsin Paving Concrete, Principal Investigator, 6/03 - 5/06.

RESEARCH FUNDING (cont.)

23. Michigan Department of Transportation, $131,547, Mineral Characterization and Cataloging of Quarried Aggregate Sources Used in Michigan Highway Construction, Principal Investigator, 6/01 - 5/02.
24. National Cooperative Highway Research Program, $349,734, of "Early-Opening-to-Traffic" Portland Cement Concrete for Pavement Rehabilitation, Co-Principal Investigator, 2/00 - 3/02.
25. National Science Foundation, $724,654, Acquisition of Instrumentation for Microstructural Characterization of Materials that are Non-Conducting or Contain Volatile Phases, Co-Principal Investigator, 1/00 - 7/03 *(Facility Support)*.
26. Conoco, $50,000, Second Year Funding for the MTU Carbon Technology Center (CTC), Co-Principal Investigator, 12/99 - 12/00.
27. Conoco, $113,944, Demonstrating the Functionality of Carbon Fiber Modified Asphalt Mixtures—Phase I, Co-Principal Investigator, 1/99 - 12/99.
28. Conoco, $20,500, Demonstrating the Functionality of Carbon Fiber Modified Asphalt Mixtures—Phase 0, Co-Principal Investigator, 12/98 - 12/99.
29. Conoco, $40,000, $36,000, Establishment of the MTU Carbon Technology Center (CTC), Co-Principal Investigator, 12/98 - 12/99.
30. Michigan Department of Transportation, $257,558, A Study of Materials-Related Distress (MRD) in Michigan's PCC Pavements—Phase II, Co-Principal Investigator, 11/98 - 12/00.
31. Michigan Department of Transportation, $250,000 per yr. min. Master Contract, Establishment of the MTU Transportation Materials Research Center (TMRC), Co-Principal Investigator, 10/98 - 9/03 *(Facility Support)*.
32. Michigan Department of Transportation, $7,500, Preliminary Investigations of Deterioration of Fast-Setting Concrete Patches, Co-Principal Investigator, 4/98 - 9/98.
33. MTU Faculty Dev. Grant, $1,500, $1,500, Novel Methods of Characterizing Materials Related Distress in Portland Cement Concrete, Principal Investigator, 3/98 *(Facility Support)*.
34. Michigan Department of Transportation, $124,135, A Study of Materials-Related Distress (MRD) in Michigan's PCC Pavements-Phase I, Co-Principal Investigator, 12/97 - 8/00.
35. Federal Highway Administration, $400,913, $36,821, Detection, Analysis, and Treatment of Materials-Related Distress in Concrete Pavements, Co-Principal Investigator, 10/96 - 9/99.
36. Michigan Department of Transportation, $130,000, The Effect of Film Thickness on AC Durability, Co-Principal Investigator, 3/96 - 3/98.
37. Federal Highway Administration, $90,488, Effects of Higher Strength and Associated Concrete Properties on Pavement Performance, Co-Principal Investigator, 10/95 - 9/98.

PUBLICATIONS

Journal Publications

1. Ahmed, Z.T., D. W. Hand, L. L. Sutter, M. K. Watkins. Fly Ash Iodine Number for Measuring Adsorption Capacity of Coal Fly Ash. *ACI Materials Journal*, V. 111, No. 4, (2014). pp 383-390. DOI: 10.14359/51686582
2. Ahmed, Z.T., D. W. Hand, M. K. Watkins, L. L. Sutter. Air-Entraining Admixture Partitioning and Adsorption by Fly Ash in Concrete. *Ind. Eng. Chem. Res*., 2014, 53 (11), pp 4239–4246. DOI: 10.1021/ie4018594
3. Ahmed, Z.T., D. W. Hand, M. K. Watkins, L. L. Sutter. Combined Adsorption Isotherms for Measuring the Adsorption Capacity of Fly Ash in Concrete. *ACS Sustainable Chemistry & Engineering* 03/2014; 2(4):614–620. DOI: 10.1021/sc500043s
4. Watkins, M.K., Z.T. Ahmed, L. L. Sutter, D. W. Hand. Characterization of Coal Fly Ash by the Absolute Foam Index. *ACI Materials Journal*, V. 111, No. 1-6, January-December 2015. DOI: 10.14359/51686792
5. Peterson, K., G. Julio-Betancourt, L.L. Sutter, R.D. Hooton, D. Johnston. "Observations of Chloride Ingress and Calcium Oxychloride Formation in Laboratory Concrete and Mortar at 5 °C." Cement and Concrete Research, Volume 45, March 2013, Pages 79–90.

Journal Publications (cont.)

6. Ahlborn, T.M., R. Shuchman, L. L. Sutter, C. N. Brooks, D. K. Harris, J. W. Burns, K. A. Endsley, D. C. Evans, K. Vaghefi, R. C. Oats. An Evaluation of Commercially Available Remote Sensors for Assessing Highway Bridge Condition. Journal of Bridge Engineering 11/2010; 17(6).
7. Peterson, K.W., L.L. Sutter, M. Radlinski, "The Practical Application of a Flatbed Scanner for Air-Void Characterization of Hardened Concrete," Journal of ASTM International, Vol. 6, No. 9, 15 p., 2009.
8. Huntzinger, D.N., J.S. Gierke, S.K. Kawatra, T.C. Eisele, and L.L. Sutter, "Carbon Dioxide Sequestration in Cement Kiln Dust through Mineral Carbonation", Environ. Sci. Technol., 2009, 43 (6), pp 1986–1992.
9. Peterson, K.W., J. Carlson, L.L. Sutter, T. Van Dam, "Methods for Threshold Optimization for Images Collected from Contrast Enhanced Concrete Surfaces for Air-Void System Characterization," Materials Characterization, Vol. 60, No. 7, pp. 710-715, 2009.
10. Buch, N., T. Van Dam, K.W. Peterson, L.L. Sutter, "Evaluation of High-Early Strength PCC Mixtures Used in Full Depth Repairs," Journal of Construction and Building Materials, Vol. 22, No. 3, pp. 162-174, 2008.
11. Sutter, L.L., K.W. Peterson, S.H. Touton T.J. Van Dam, and D. Johnston, "Petrographic Evidence Of Calcium Oxychloride Formation In Mortars Exposed to Magnesium Chloride Solution", Cement and Concrete Research, Volume 36, Issue 8, August, 2006, pp. 1533-1541.
12. Peterson, K.W., D. Gress, T.J. Van Dam, and L.L. Sutter, "Crystallized Alkali- Silica Gel in Concrete from the Late 1890s", Cement and Concrete Research, Volume 36, Issue 8, August, 2006, pp. 1523-1532.
13. Carlson, J., L.L. Sutter, T.J. Van Dam, and K.W. Peterson, "Comparison Of A Flat-Bed Scanner And The RapidAir 457 System For Determining Air-Void System Parameters Of Hardened Concrete," Journal of the Transportation Research Board, Transportation Research Record 1979, Transportation Research Board, 2006, pp. 60-68.
14. Sutter, L.L., T.J. Van Dam, K. W. Peterson, and D. Johnston, "Long Term Effects of Magnesium Chloride and Other Concentrated Salt Solutions on Pavement and Structural Portland Cement Concrete – Phase I Results," Journal of the Transportation Research Board, Transportation Research Record 1979, Transportation Research Board, 2006, pp. 54-59.
15. King, J.A., M. G. Miller, R. L. Barton, J. M. Keith, R. A. Hauser, K. R. Peterson, L. L. Sutter. Thermal and electrical conductivity of carbon–filled liquid crystal polymer composites. Journal of Applied Polymer Science. 12/2005. 99(4):1552 - 1558. DOI: 10.1002/app.22452.
16. Chen, Y., J. C. Crittenden, S. A. Hackney, L.L. Sutter, and D. W. Hand, "Preparation of a Novel TiO2-Based p–n Junction Nanotube Photocatalyst," Environmental Science and Technology, May 2005, 39 (5), 1201–1208.
17. Delem, L., T. Van Dam, K. R. Peterson, and L.L. Sutter, "Evaluation of Premature Deterioration of Concrete Bridge Barriers by Petrographic Examination", Journal of the Transportation Research Board, Transportation Research Record 1893, Transportation Research Board, 2004, pp. 11-17.
18. Mitchell, D., G. Frohnsdorff, L.L. Sutter, et. al, "Service-Life Modeling and Design of Concrete Structures for Durability", Concrete International, December 2004, pp. 1-7.
19. Heiser, J.A., J.A. King, J.P. Konell, I. Miskioglu, and L. L. Sutter, "Tensile and Impact Properties of Carbon Filled Nylon 6,6 Based Resins", Journal of Applied Polymer Science, Vol. 91, 2004, pp. 2881-2893.
20. Heiser, J.A., J.A. King, J.P. Konell, and L. L. Sutter, "Shielding Effectiveness of Carbon Filled Nylon 6,6", Polymer Composites, Volume 25, Issue 4, Pages 407 – 416.
21. Heiser, J.A., J.A. King, J.P. Konell, and L. L. Sutter, "Electrical Conductivity of Carbon Filled Nylon 6,6", Advances in Polymer Technology, Vol. 23, No.2, pp.135-146, 2004.
22. Hansen, K.F., T.J. Van Dam, K.W. Peterson, and L.L. Sutter "Effect of Sample Preparation on Chemical Composition and Morphology of Alkali-Silica Reaction Products," Journal of the Transportation Research Board, Transportation Research Record 1834, 2003, pp. 1-7.
23. Van Dam, T.J., K.W. Peterson, L.L. Sutter, and M.E. Housewright, "Study of Deterioration in Concrete Pavements Constructed with Slag Coarse Aggregate," Journal of the Transportation Research Board, Transportation Research Record 1834, 2003, pp. 8-15.
24. Sutter, L.L., K.W. Peterson, and T.J. Van Dam, "Using Epifluoresence Optical Microscopy to Identify the Causes of Portland Cement Concrete Distress: A Case Study," Journal of the Transportation Research Board, Transportation Research Record 1798, 2002, pp. 22-30.

Journal Publications (cont.)

25. Sutter, L.L., K.W. Peterson, T.J. Van Dam, and G.R. Dewey, "Laboratory Testing, Data Analysis, and Interpretation Procedures for Distressed Concrete Pavements," Journal of the Transportation Research Board, Transportation Research Record 1775, 2001, pp. 64-76.
26. Van Dam, T.J., N.J. Buch, K.F. Hanson, J. Hiller, L.L. Sutter, and R. Muethel, "Michigan's Approach to a State-Wide Investigation of Materials-Related Distress in Concrete Pavements," Journal of the Transportation Research Board, Transportation Research Record 1775, 2001, pp. 1-9.
27. Peterson, K.W., R.A. Swartz, L.L. Sutter, and T.J. Van Dam, "Air Void Analysis of Hardened Concrete with a Flatbed Scanner," Journal of the Transportation Research Board, Transportation Research Record 1775, 2001, pp. 36-43.
28. Burns, R.A., Crittenden, J.C., Hand, D.W., Selzer, V.H., Sutter, L.L., Salman, S.R., "Effect of Inorganic Ions in Heterogeneous Photocatalysis of TCE", ASCE Journal of Environmental Engineering, January 1999 Vol. 125 (1), pp. 77-85.
29. Sandell, J.F., G.R., Dewey, L.L., Sutter, J.A., Willemin, "Evaluation of Lead Bearing Phases in Municipal Waste Combustor Fly Ash", ASCE Journal of Environmental Engineering, January 1996 Vol. 122 (1), pp. 34-40.
30. Willemin, J.A., C.C. Nesbitt, G.R. Dewey, Sandell, J.F., and L.L. Sutter, "Flow Injection Analysis of MWC Fly Ash Leaching Characteristics", Journal of Air and Waste Management, November 1995 Vol. 45 (11), pp. 871-876.

Books/Other Publications

1. Christiansen, M.U. and L.L. Sutter, *Waste glass for use in geopolymers.* ACI Special Publication SP-294 Advances in Green Binder Systems, 2013. **294**.
2. Sutter, L.L., "Metallurgical Examination of Copper Artifacts from 20KE20", The Michigan Archeologist Vol. 39, No. 3-4 (1993): pp. 166-170.

Reviewed Conference Proceedings

1. Ahlborn, T.M., D.K. Harris, C.N. Brooks, and L.L. Sutter, "Integration for Traditional and Non-Traditional Remote Sensing for Bridge Condition Assessment," 5th International Conference on Structural Health Monitoring of Intelligent Infrastructure, Cancun Mexico.
2. Sutter, L.L., J. Vermillion, K.W. Peterson, M. King, "Effect of Entrained Air-Void and Supplementary Cementitious Materials on Durability of Concrete", Proceedings of the 2nd International Conference on Sustainable Construction Materials and Technologies, Ancona, Italy, June 28-30, 2010, pp. 1289-1298.
3. Sutter, L.L., K.W. Peterson., M. King, "Chloride Profiling Using X-ray Microfluorescence," Proceedings of the 12th Euroseminar on Microscopy Applied to Building Materials, Dortmund, Germany, 2009.
4. Van Dam, T., K.W. Peterson, L.L. Sutter, K. Smith, "Durability Of Concrete Pavements Used For Aircraft Deicing Facilities," 87th Annual Meeting of the Transportation Research Board, Washington, D.C., 2008.
5. Peterson, K., Van Dam, T., Sutter, L., "Determination of the Paste to Void Proximity Distribution in Two Dimensions from a Cross-Section through a Concrete Specimen," *Proceedings of the 8th Euroseminar on Microscopy Applied to Building Materials*, Athens, Greece, September 4-7, 2001, pp. 611-617.
6. Van Dam, T.J., D. Gress, K.W. Peterson, L.L. Sutter, and T.J. Bates, "Comparison of Field and Laboratory Concrete Exposed to Potassium Acetate Runway Deicer," Proceedings of the First International Conference on Advances in Concrete, September 19-21, 2007, Washington, D.C., pp. 389-402.
7. Sutter, L.L., K.W. Peterson, T.J. Van Dam. "Methods for Threshold Optimization for Images Collected from Contrast Enhanced Concrete Surfaces for Air-Void System Characterization", Proceedings of the 11th Euroseminar on Microscopy Applied to Building Materials, Porto, Portugal, June 5-8, 2007.
8. Van Dam, T. J., L.L. Sutter, and K.W. Peterson, "Getting it Right: Achieving Long-Life through Material Selection, Mix Design, and Construction," Proceedings of the International Conference on Long-Life Concrete Pavements, Chicago, IL, October 24-27,2006. pp. 369-386.
9. Anderson, C. P., L. L. Sutter, D. N. Huntzinger, and J. S. Gierke, "Effects of Carbonation on the Mineral Composition of Cement Kiln Dust", Proceedings of the 29th Conference on Cement Microscopy, Quebec City, PQ, Canada May 20 -24, 2007, p. 442-471.
10. Peterson, K., L.L. Sutter, T. Van Dam, "Virtual Hardened Concrete Sample Exchange Program", Proceedings of the 29thConference on Cement Microscopy, Quebec City, PQ, Canada May 20 -24, 2007, pp. 131-134.

Reviewed Conference Proceedings (cont.)

11. Carlson, J.C., L.L. Sutter, K.W. Peterson, T.J. Van Dam. "An Update on Application of a Flat-Bed Scanner for Performing ASTM C 457", Proceedings of the 27th International Conference on Cement Microscopy, Victoria, B.C., Canada, April 24-28, 2005.
12. Sutter, L.L., K.W. Peterson, S.H. Touton T.J. Van Dam, and D. Johnston. "Petrographic Evidence Of Calcium Oxychloride Formation In Mortars Exposed To Magnesium Chloride Solution", Proceedings of the 10th Euroseminar on Microscopy Applied to Building Materials, Paisley, Scotland, June 22-25, 2005.
13. Peterson, K.W., D. Gress, T.J. Van Dam, and L.L. Sutter. "Alkali-Silica Reaction In Concrete From The Late 1890's", Proceedings of the 10th Euroseminar on Microscopy Applied to Building Materials, Paisley, Scotland, June 22-25, 2005.
14. Sutter, L.L., K.W. Peterson, T.J. Van Dam. "The X-Ray Microscope: A New Tool for Measuring the Density of Hardened Cement Paste", Proceedings of the 9th Euroseminar on Microscopy Applied to Building Materials, Trondheim, Norway, September 8-12, 2003.
15. Sutter, L.L., T.J. Van Dam, K.W. Peterson, and A. Ganguly, "The X-Ray Microscope: A New Tool for Determining Chloride Ion Diffusion in Hardened Concrete", Proceedings of the Conference on Advances in Cement and Concrete, Copper Mountain, Colorado, August 10-14, 2003.
16. Sutter, L.L., K.W. Peterson, T. J. Van Dam, "Applications of an X-Ray Analytical Microscope to the Analysis of Concrete." Proceedings of the 25th International Conference on Cement Microscopy, Richmond, Virginia. April 6-10, 2003.
17. Peterson, K.W., L.L. Sutter, T. J. Van Dam. "Air Void Analysis of Hardened Concrete with a High Resolution Flatbed Scanner." Proceedings of the 24th International Conference on Cement Microscopy, San Diego, California. April 8-11, 2002, pp. 304-316.
18. Hammerling, D., K.W. Peterson, L.L. Sutter, T. J. Van Dam, and G.R. Dewey, "Ettringite: Not Just in Concrete." Proceedings of the 22nd International Conference on Cement Microscopy, Montreal, Canada. April 30 to May 4, 2000, pp. 431-441.
19. Peterson, K.W., D. Hammerling, L.L. Sutter, T. J. Van Dam, and G.R. Dewey, "Oldhamite: Not Just in Meteorites," Proceedings of the 21st International Conference on Cement Microscopy, Las Vegas, NV, April 25-29, 1999, pp. 394-405.
20. Sutter, L. L., "Macro Programming with NIH Image for Implementing ASTM C 457", Proceedings of the 20th Annual Meeting of the International Cement Microscopy Association, 1998, pp. 382-393.
21. Sutter, L. L., P. Lehoux, G. R. Dewey "Composition Based Phase Distribution Analysis of Portland Cement Clinker", Proceedings of the 19th Annual Meeting of the International Cement Microscopy Association, 1997, pp. 14-29.
22. Landon, D.B., L.L. Sutter, "The Place of Scientific Research in Historical Archaeology: An Example from the Ohio Trap Rock Mine Site", Proceedings of the Society for Archaeology, October 1994, Plenum Press.
3. Mainwaring, P.R., Sutter, L.L., Kramer, R.S., Hwang, J. Y, "Improved Characterization of Materials by Integrated Image Analysis and Microanalysis Methods," 120th Annual TMS Meeting, New Orleans, Louisiana; Journal of Metals, November 1990, p. 62.

Non-Reviewed Conference Proceedings

1. Sutter, L.L., G.R., Dewey, and J.F. Sandell "Characterization of Lead Bearing Phases in Municipal Waste Combustor Fly Ash", The Proceedings of the Microscopy Society of America, August 1996.
2. Dewey, G.R., L.L., Sutter, and J.F., Sandell "Reactivity Based Approach for Classifying Fly Ash", The Proceedings of the American Power Conference, April 1996, Chicago, Illinois.
3. Sutter, L.L., J.F. Sandell, and G.R Dewey, "Applications of Electron Microprobe and Mineral Liberation Analysis Techniques to Municipal Solid Waste Combustor Fly Ash", Proceedings of the International Symposium on Extraction and Processing for the Treatment and Minimization of Wastes, February 1994.

Selected Reviewed Reports

1. Sutter, L.L., R.D. Hooton, and S. Schlorholtz, "Methods for Evaluating Fly Ash for Use in Highway Concrete," National Cooperative Highway Research Program Report 749, Transportation Research Board of the National Academies, Washington, D.C., September 2013, 78 pp.

Selected Reviewed Reports (cont.)

2. Ahlborn, T.M., R. Shuchman, L.L. Sutter, D.K. Harris, C.N. Brooks, J.W. Burns, "Bridge Condition Assessment Using Remote Sensors - Final Report," Cooperative Joint Agreement DTOS59-10-H-00001, February 2013.
3. Ahlborn, T.M., R. Shuchman, L.L. Sutter, D.K. Harris, C.N. Brooks, J.W. Burns, K.A. Endsley, D.C. Evans, K. Vaghefi, and R.C. Oats, "An Evaluation of Commercially Available Remote Sensors for Assessing Highway Bridge Condition," DTOS59-10-H-00001 Monograph, 70 pp,. October 2010.
4. Ahlborn, T.M., R. Shuchman, L.L. Sutter, D.K. Harris, C.N. Brooks, J.W. Burns, K.A. Endsley, D.C. Evans, K. Vaghefi, and R.C. Oats, "The State-of-the-Practice of Modern Structural Health Monitoring for Bridges: A Comprehensive Review," Michigan Tech Transportation Institute for the USDOT/RITA, June 2010.
5. Peterson, K.W., L.L. Sutter, "Impact of Hydrated Cement Paste Quality and Entrained Air-Void System on the Durability of Concrete," Final Report, RC-1552, Michigan Department of Transportation. Lansing, Michigan, USA, March, 2011.
6. Sutter, L.L., K.W. Peterson, and, "Reduction of Minimum Required Weight of Cementitious Materials in Concrete Mixes," Final Report 0092-08-08, Wisconsin Department of Transportation, Madison, Wisconsin, July, 2011.
7. Taylor, P., L.L. Sutter, J. Weiss, "Investigation of Deterioration of Joints in Concrete Pavements – Final Report," FHWA Contract No. DTFH61-06-H-00011 Work Plan 26, Prepared for the Federal Highway Administration, Washington, D.C., August, 2012.
8. Sutter, L. L., Anzalone, G. C., and Peterson, K. W., Alkali Silica Reactivity and Potassium Acetate Deicers: Identifying Fundamental Mechanisms, R&D Serial No. 3223, Portland Cement Association, Skokie, Illinois, USA, July, 2012.
9. Sutter, L.L., K.W. Peterson, "Evaluation of Concrete Pavements with Materials-Related Distress," Final Report, RC-1533, Michigan Department of Transportation. Lansing, Michigan, USA, March, 2010.
10. Sutter, L.L., K.W. Peterson, and T.J. Van Dam, "Investigation of the Long Term Effects of Magnesium Chloride and Other Concentrated Salt Solutions on Pavement and Structural Portland Cement Concrete," Final Report SD2002-01, South Dakota Department of Transportation, Pierre, South Dakota, June 2007.
11. Sutter, L.L., K.W. Peterson, and T.J. Van Dam, "Evaluation of Methods for Characterizing Air-Void Systems in Wisconsin Paving Concrete," Final Report 0092-03-16, Wisconsin Department of Transportation, Madison, Wisconsin, July, 2007.
12. Van Dam, T.J., and L.L., Sutter, "Concrete Mixes and Pavement Construction for De-icing Facilities", Final Report 03-03, Innovative Pavement Research Foundation, April 2006.
13. Van Dam, T., Peterson, K., Sutter, L., Lemmertz, P., "Petrographic Evaluation of Cores from the Mosel Avenue Bridge," Final Report, RC-1443, Michigan Department of Transportation, Lansing, Michigan, USA, March, 2004.
14. Van Dam, T.J., K.W. Peterson, and L.L., Sutter, "Preliminary Investigation of the Role of Bacteria in Concrete Degradation," Final Report RC-1444, Michigan Department of Transportation. Lansing, MI, April, 2004.
15. Van Dam, T.J., L. Delem, K.W. Peterson, and L.L. Sutter, "Causes and Cures for Cracking of Concrete Barriers: Final Report, TMRC-03-02," Michigan Department of Transportation, Lansing, MI, February, 2003.
16. Sutter, L.L., T.J. Van Dam, K.W. Peterson, "Mineral Characterization and Cataloging of Quarried Aggregate Sources Used in Michigan Highway Construction," Final Report, RC-1459, Michigan Department of Transportation, Lansing, Michigan, USA, January, 2003.
17. Van Dam, T.J., L.L. Sutter, N. Buch, and J. Sytsma, "Durability of 'Early-Opening-To-Traffic' Portland Cement Concrete For Pavement Rehabilitation," Final Report, NCHRP 18-04B, Prepared for the National Cooperative Highway Research Program, Washington, D.C., May 2002.
18. Van Dam, T.J., L.L. Sutter, K.D. Smith, M.J. Wade, K.W. Peterson, "Guidelines for Detection, Analysis, and Treatment of Materials-Related Distress in Concrete Pavements, Volume 1: Final Report", FHWA Contract No. DTFH61-96-C-00073, Prepared for the Federal Highway Administration, Turner-Fairbank Highway Research Center, McLean, VA, September, 2001.

Selected Reviewed Reports (cont.)

19. Van Dam, T.J., L.L. Sutter, K.D. Smith, M.J. Wade, K.W. Peterson, "Guidelines for Detection, Analysis, and Treatment of Materials-Related Distress in Concrete Pavements, Volume 2: Guidelines Description and Use", FHWA Contract No. DTFH61-96-C-00073, Prepared for the Federal Highway Administration, Turner-Fairbank Highway Research Center, McLean, VA, September, 2001.
20. L.L. Sutter, K.W. Peterson, Van Dam, T.J., K.D. Smith, M.J. Wade. "Guidelines for Detection, Analysis, and Treatment of Materials-Related Distress in Concrete Pavements, Volume 3: Case Studies Using the Guidelines", FHWA Contract No. DTFH61-96-C-00073, Prepared for the Federal Highway Administration, Turner-Fairbank Highway Research Center, McLean, VA, September, 2001.

Selected Technical Presentations (not shown above)

1. "Ash Classification – Or Not?," American Coal Ash Association Winter Meeting, Savannah, GA, February, 2015.
2. "The Future of Fly Ash," Nebraska Concrete Paving Association Annual Meeting, Lincoln, NB, January, 2015.
3. "Class C and Class F Fly Ash: Comparisons, Applications, and Performance," Minnesota Concrete Council, Minneapolis, MN, December, 2014.
4. "The Future of Fly Ash," Sierra Nevada Concrete Association Technical Meeting, Reno, NV, November, 2015.
5. "The Future of Fly Ash," Sierra Nevada Concrete Association Technical Meeting, Las Vegas, NV, November, 2015.
6. "Supplementary Cementitious Materials: Properties, Tests, and Specifications," Technical Seminar for 3M Corporation, St. Paul, MN, November, 2015.
7. "A Summary of NCHRP Project 18-13: Flt Ash tests and Specifications," National Concrete Consortium, September, 2015.
8. "Microscopy and Damage Analysis", Presented at the University of Toronto Summer Course on Cement Chemistry, Toronto, Canada, April, 2014.
9. "Mineral Composition of Portland Cement", Presented at the University of Toronto Summer Course on Cement Chemistry, Toronto, Canada, April, 2014.
10. "Liquid Deicers: Effects on Concrete Pavements," Nebraska Concrete Paving Association Annual Meeting, Lincoln, NB, January, 2014.
11. "Use of Surface Sealers to Reduce Ingress of Deicing Chemicals on Portland Cement Concrete Pavements," Transportation Research Board Annual meeting, January 2014.
12. "Can Cement Specifications Be Used to Reduce Cracking in Concrete?," 123 Forum: Can Cement Specifications Be Used to Reduce Cracking in Concrete?, American Concrete Institute Fall Meeting, Phoenix, AZ, October, 2013.
13. "E701 Documents - An Overview," A Fresh Look at Cementitious Materials and Admixtures, American Concrete Institute Fall Meeting, Phoenix, AZ, October, 2013.
14. "A Summary of Proposed Changes to AASHTO M 295 Resulting from NCHRP Project 18-13 - Specifications and Protocols for Acceptance Tests of Fly Ash Used in Highway Concrete ," World of Coal Ash, Lexington, KY, April, 2013.
15. "Mechanisms and Background," CP Tech Center Training on Joint Distress – Causes and Cures, Minneapolis, MN, April, 2013.
16. "Drainage of Concrete Pavements," CP Tech Center Training on Joint Distress – Causes and Cures, Minneapolis, MN, April, 2013.
17. "Sealants for Concrete Pavements," CP Tech Center Training on Joint Distress – Causes and Cures, Minneapolis, MN, April, 2013.
18. "Specifications and Testing of Fly Ash in the US," Session in Honor of Dick Stehly: Increased Beneficial Use of Fly Ash – History, Accomplishments, and Challenges," American Concrete Institute Spring Meeting, Minneapolis, April, 2013.
19. "Mechanisms and Background," CP Tech Center Training on Joint Distress – Causes and Cures, Plymouth, MI, March, 2013.

Selected Technical Presentations (cont.)

20. "Drainage of Concrete Pavements," CP Tech Center Training on Joint Distress – Causes and Cures, Plymouth, MI, February, 2013.
21. "Sealants for Concrete Pavements," CP Tech Center Training on Joint Distress – Causes and Cures, Plymouth, MI, February, 2013.
22. "Mechanisms and Background," CP Tech Center Training on Joint Distress – Causes and Cures, Indianapolis, IN, February, 2013.
23. "Drainage of Concrete Pavements," CP Tech Center Training on Joint Distress – Causes and Cures, Indianapolis, IN, February, 2013.
24. "Sealants for Concrete Pavements," CP Tech Center Training on Joint Distress – Causes and Cures, Indianapolis, IN, February, 2013.
25. "Concrete Permeability and Curing," 2013 Michigan Concrete Association Winter Conference and Workshop, Plymouth, MI, February, 2013.
26. "Joint Distress in Portland Cement Concrete Pavements," Transportation Engineering Road Research Alliance Pavement Conference, St Paul, MN, February, 2013.
27. "Tests for Adsorption of Air-Entraining Agents by Coal Fly Ash," American Coal Ash Association Winter Meeting, Grapevine, TX, February, 2013.
28. "Joint Deterioration of Concrete Pavements in the Upper Midwest," Session 699 Petrography of Highway Materials, 2013 Transportation Research Board Annual Meeting, Washington DC, January, 2013.
29. "Fly Ash and Air, and Why Should You Care," Presented at the Wisconsin Ready-Mix Association Annual Meeting, Wisconsin Dells, WI, January, 2013.
30. "Joint Distress in Portland Cement Concrete Pavements, "2012 Michigan Winter Operations Conference," Lansing, MI, October, 2012.
31. "Joint Distress in Portland Cement Concrete Pavements," 2012 International Conference on Long-Life Concrete Pavements, Seattle, WA, September, 2012.
32. "Tests for Adsorption of Air-Entraining Agents by Coal Fly Ash," Bi-Annual Workshop on Emerging Developments Related to Concrete – Supplementary and Alternative Cementitious Materials (SCMs and ACMs)", Federal Highway Administration, Turner-Fairbank Highway Research Center, McLean, VA, September, 2012.
33. "Joint Distress in Portland Cement Concrete Pavements," 2012 National Pavement Preservation Conference, Nashville, TN, August, 2012.
34. "Observations on the Microwave Oven Procedure for the Determination of Water Content in Fresh Concrete," AASHTO Sub-Committee on Materials, Biloxi MS, August, 2012.
35. "Impact of Hydrated Cement Paste Content and Entrained Air-Void System Parameters on the Durability of Concrete," XXI Nordic Concrete Research Symposium 2011, Hämeenlinna, Finland, May, 2011.
36. "Microscopy and Damage Analysis", Presented at the University of Toronto Summer Course on Cement Chemistry, Toronto, Canada, May, 2012.
37. "Mineral Composition of Portland Cement", Presented at the University of Toronto Summer Course on Cement Chemistry, Toronto, Canada, May, 2012.
38. **"**Effect of Microwave Power on the Determination of Water Content in Fresh Concrete", Presented at the ASTM Summer Meeting, Anaheim CA, June 2011.
39. "Concrete Materials Technology Research and Implementation Program", Presented an the National Concrete Consortium, Indianapolis, IN, April 2011.
40. "Can We Develop Codes and Specifications That Lead To Durable, Sustainable Concrete Alternatives?", Presented at the 2011 Annual Concrete Technical Conference, Albany NY, February 2011.
41. "Role of Codes and Specifications in Allowing Durable, Sustainable Concrete Alternatives", Presented at the Transportation Research Board Annual Meeting, Washington DC, January 2011.

Selected Technical Presentations (cont.)

42. "Highway Materials and Carbon Footprint Assessment", Lead Author: Darrell Cass, Michigan Tech, Presented at the Louisiana Transportation Conference, Baton Rouge, LA, January 2011.
43. "Fly Ash Characterization & Specifications: Demands and Directions", Presented at the FHWA Workshop: Steps Needed in the Research & Development of New Specifications for the Proper Inclusion of Fly Ash into Concrete Mixes for Highway Pavements and Other Transportation Structures, Washington DC, September, 2010.
44. "Fly Ash Characterization & Specifications: Demands and Directions," Workshop – Steps Needed in the Research & Development of New Specifications for the Proper Inclusion of Fly Ash into Concrete Mixes for Highway Pavements and Other Transportation Structures, Federal Highway Administration, Turner-Fairbank Highway Research Center, McLean, VA, September, 2010.
45. "Update on PCA R&D 07-10a Investigating the Effect of Potassium Acetate on Concrete Durability", Presented at the Portland Cement Association Durability Committee Meeting, Chicago, IL, September, 2010.
46. "Microscopy and Damage Analysis", Presented at the University of Toronto Summer Course on Cement Chemistry, Toronto, Canada, May, 2010.
47. "Concrete Durability and the Role of Deicers", Presented on behalf of Todd's Ready-Mix, Hayward, WI, April, 2010.
48. "Achieving Durability in Concrete Pavements", Presented at the Michigan Concrete Paving Association Annual Meeting, Plymouth, MI, February, 2010.
49. "Impact of Hydrated Cement Paste Quality and Entrained Air-Void System on the Durability of Concrete", Presented at the National Concrete Consortium, St. Louis, MO, October, 2009.
50. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the Minnesota Concrete Council Workshop, Minneapolis, MN, September, 2009.
51. "Update on PCA R&D 07-10a Investigating the Effect of Potassium Acetate on Concrete Durability", Presented at the Portland Cement Association Durability Committee Meeting, Chicago, IL, August, 2009.
52. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the Wisconsin Ready-Mix Association Annual Meeting, Wisconsin Dells, WI, January, 2009.
53. "Potassium Acetate Related Deterioration of Concrete Pavements: Research Plan", Presented at the Portland Cement Association Durability Committee Meeting, Chicago, IL, August, 2009.
54. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the Iowa Highway Research Review Board, Ames IA, April 2009.
55. "Transportation Research at Michigan Tech", Presented at the Dura-Int Concrete Durability Workshop, Helsinki, Finland, February, 2009.
56. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the Michigan Concrete Paving Association Annual Meeting, Plymouth, MI, February, 2009.
57. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the Michigan County Engineers Workshop, Midland, MI, February, 2009.
58. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the Wisconsin Concrete Paving Association Annual Meeting, Appleton, WI, February, 2009.
59. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the Wisconsin Ready-Mix Association Annual Meeting, Wisconsin Dells, WI, January, 2009.
60. "Deicer Basics: How They Work and Why We Use Them", Presented at the Wisconsin Ready-Mix Association Annual Meeting, Wisconsin Dells, WI, January, 2009.
61. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete: Phase II Results", Presented at the Transportation Research Board Annual Meeting, Washington D.C., January, 2009.
62. "Binders for Sustainable Concrete Pavements", Presented at the Transportation Research Board Annual Meeting, Washington D.C., January, 2009.
63. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the Southeast Michigan Council of Governments (SEMCOG) Winter Maintenance Workshop, Detroit, MI, October, 2008.

Selected Technical Presentations (cont.)

64. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the National Concrete Consortium, Minneapolis, MN, September, 2008.
65. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the Mid-Continent Transportation Symposium, Madison, WI, August, 2008.
66. "The Deleterious Chemical Effects of Concentrated Deicing Solutions on Portland Cement Concrete", Presented at the Michigan Concrete Paving Association, Grand Rapids, MI August, 2008.
67. "Concrete Sustainability: A Vision for Sustainable Construction With Concrete in North America", Presented at the National Concrete Consortium, Baton Rouge, LA, April, 2008.
68. "Deicing Chemicals and Possible Effects on Portland Cement Concrete", Presented at the 2007 Michigan Concrete Association Annual Meeting, Midland, MI, February, 2007.
69. "Deicing Chemicals and Possible Effects on Portland Cement Concrete Pavements", Presented at the 2007 University of Minnesota Transportation Conference, St. Paul, MN, December, 2007**.**
70. "Concrete Petrography Techniques", International Conference on Cement Microscopy, Panel Discussion on Sample Preparation for Concrete Petrography, Denver, CO, April, 2006.
71. "Concrete Petrography: A Sword, A Shield, or a Beacon of Truth?", Presented at the 2006 Michigan Concrete Association Annual Meeting, Troy, MI February, 2006.
72. "Cement and Concrete Chemistry", a one day seminar presented to the Technical Advisory Panel, Dow Corning, Midland MI, January, 2006.
73. "Cement and Concrete Technology", a one day seminar presented to the Technical Advisory Panel, Dow Corning, Midland MI, May, 2005.
74. "Further Development of a Flat-Bed Scanner for Determining Air-Void System Parameters of Hardened Concrete", Presented to the Society of Concrete Petrographers Annual Meeting, Reno, NV June, 2005.
75. "The Role of Scanning Electron Microscopy in Concrete Petrography", Presented at the *Symposium on Techniques for Concrete Petrography*, ASTM Spring meeting 2005, June, Reno, NV.
76. "Use of a High Resolution Flatbed Scanner to Determine the Air Content of Hardened Concrete" Presented to the Norwegian Geological Survey, Trondheim, Norway, May, 2004**.**
77. "The X-ray Microscope: A New Tool for Materials Characterization" Presented to the Norwegian Geological Survey, Trondheim, Norway, May, 2004.
78. "Materials Related Distress in Concrete Pavements", Presented at the 2004 Michigan Concrete Association Annual Meeting, Grand Rapids, MI, February, 2004**.**
79. "Emerging Microscopy and X-Ray Analytical Techniques for Characterizing the Microstructure of Portland Cement Concrete", Purdue University, Department of Civil Engineering, October, 2003.
80. "Field Testing of Fresh Portland Cement Concrete", Presented at the LTAP Bridge and Culvert Conference, Marquette MI, September, 2002.
81. "Air-Void Analysis of Hardened Concrete with a High-Resolution Flatbed Scanner", Presented at the Symposium on Methods for Evaluation of Hardened Field Concrete sponsored by ASTM, Miami, FL, December, 2002.
82. "A Systematic Approach to Characterizing Materials Related Distress in Portland Cement Concrete Pavements", Presented at the *Symposium on Methods for Evaluation of Hardened Field Concrete* sponsored by ASTM, Miami, FL, December, 2002.
83. New Techniques for Characterizing Transportation Construction Materials", Presented at the 2001 Transportation Materials Research Center Conference, Houghton, MI, October 2001.
84. "Field Distress Survey, Sampling Procedures, Laboratory Testing, Data Analysis, and Interpretation Procedures for Distressed Concrete Pavements," Presented to the Transportation Research Board Committee for Research on Improved Concrete Pavements, Irvine, CA, June, 2001.
85. "Data Interpretation and Diagnosis of Deteriorated Concrete Pavements," Presented at the January 2001 Annual Meeting of the Transportation Research Board, *Workshop on Investigative Techniques for Assessing Concrete Durability Problems: State-of-the-Practice*, Washington, DC, January, 2001.

Selected Technical Presentations (cont.)

86. "Guidelines for Laboratory Tests Used to Characterize Materials Related Distress in Portland Cement Concrete Pavements", Presented at the 1999 Transportation Materials Research Center Conference, Houghton, MI, October 1999.
87. "Transportation Materials Research at MTU", presented to the Michigan County Engineers Workshop, Sponsored by the Michigan Local Technical Assistance Program, Houghton, MI April, 1999.
88. Panel Discussion: "Automated Methods of Analyzing Concrete", Twentieth Annual Meeting of the International Cement Microscopy Association, April, 1998, Guadalajara, Mexico**.**

GRADUATE STUDENTS ADVISED

Ph.D. Students Advised

Mary Christiansen, Civil & Environmental Engineering, 2013.
Karl Peterson, Civil & Environmental Engineering, 2008.

Ph.D. Committees Served

Khatereh Vaghefi, Civil & Environmental Engineering, 2013.
Zeyad Ahmed, Civil& Environmental Engineering, 2012.
Charlotte Jeltema, Chemical Engineering, 2007.
Debra Huntzinger, Geological Engineering, 2006.

M.S. Students Advised

Gerald Anzalone, Civil & Environmental Engineering, 2012.
Jacob Vermillion, Civil & Environmental Engineering, 2008.
Jacob Fall, Civil & Environmental Engineering, 2008.
Jeremy Carlson, Civil & Environmental Engineering, 2005.
Sayward Touton – Civil & Environmental Engineering, 2004.
Megan Housewright – Civil & Environmental Engineering, 2003.
Angela Matelski - Geological Engineering, 2002

M.S. Committees Served

Chris Mullen, Civil & Environmental Engineering, 2013.
Tracy Hunter, Education, 2013.
Cecilia Anderson, Geological Engineering, 2006.
Melzar Coulter, Civil & Environmental Engineering, 2005.
Anirban Ganguly, Civil & Environmental Engineering, 2003.
Andrea Johnson , Materials Science & Engineering, 2002.
Karl Hansen, Civil & Environmental Engineering, 2001.
Jon Sytsma, Civil & Environmental Engineering, 2001.
Dorit Hammerling, Civil & Environmental Engineering, 2000.
Emily Aldrich, Civil & Environmental Engineering, 2000.

COURSES TAUGHT

GN120	Computer Applications and Visualization	CET2251	Soils in Construction
CET254	Contracts and Specifications	CET3252	Water & Wastewater Technology
EMT242	Engineering Materials	CET3000	Building Materials & Methods
CET1000	Public Speaking & Group Leadership	CET3100	Building Mechanical & Electrical Systems
CET1100	Introduction to Computer Applications	CET4100	Construction Equipment Management
CET1141	Cemented Aggregate Mixtures	MY442	Scanning Electron Microscopy

EDITORSHIPS

1994 – 2012 - Proceedings of the International Cement Microscopy Association.

PATENTS

U.S. Patent # 4,916,719
Patent Date: April 10, 1990
Title: "On-line Analysis of Ash Containing Slurries"
Investigators: S.K. Kawatra, L.L. Sutter, T.C. Eisle

REVIEW PANELS

Cement and Concrete Composites
Cement, Concrete, and Aggregates
Journal Environmental Science and Technology
Journal of ASTM International
Journal of Geotechnical and Geoenvironmental Engineering
Journal of Materials in Civil Engineering
Journal of the Transportation Research Board
Journal of Testing and Evaluation
Proceedings of the Euroseminar on Microscopy Applied to Building Materials
Proceedings of the International Conference on Sustainable Construction Materials and Technologies

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HONORS

2006 - First Runner-Up: Editors Choice Award for Environmental Technology Paper of the Year of 2005
2005 - Named to MTU Academy of Teaching Excellence
2005 - Nominated for Distinguished Teaching Award – Associate Professor

PROFESSIONAL SERVICE

American Concrete Institute – ***Board Level Committee Membership*** - Educational Activities Committee (EAC), ***Chairman*** Committee 232 - Fly Ash and Natural Pozzolans in Concrete, ITG-10 Alternative Cementitious Materials***, Voting Member*** Committee 130 – Sustainability of Concrete, Committee 201 - Durability, Committee 221 – Aggregate, Committee 225 - Cement, Committee 233 – Ground Slag, Committee 240 – Natural Pozzolans, Committee E701 - Materials for Concrete Construction; ***Member***, Committee 211 - Proportioning, 239 – Ultra-High Performance Concrete.

American Society for Testing and Materials (ASTM) - ***Committee Membership***: C01 Cement, C09 Concrete and Concrete Aggregates, D04 Road and Paving Materials, E60 Sustainability; ***Chairman***, C09.24 Sub-committee on Supplementary Cementitious Materials; ***Subcommittee Membership***: C01.90 Executive Committee, C01.10 Hydraulic Cements for General Concrete Construction, C01.23 Compositional Analysis, C01.26 Heat of Hydration, C01.29 Sulfate Resistance, C01.31 Volume Change, C01.32 Alkali, C01.48 Performance of Cementitious Materials and Admixture Combinations, C01.95 Coordination of Standards, C01.98 Sustainability Assessment, C01.99 Research, C09 Executive Committee, C09.24 Supplementary Cementitious Materials, C09.26 Chemical Reactions, C09.27 Ground Slag, C09.40 Ready-Mixed Concrete, C09.48 Performance of Cementitious Materials and Admixture Combination, C09.50 Risk Management for Alkali Aggregate Reactions, C09.60 Testing Fresh Concrete, C09.65 Petrography, C09.66 Concrete's Resistance to Fluid Penetration, C09.67 Resistance to the Environment, C09.95 Coordination, C09.98 Evaluation of Laboratories, C09.99 Research, D04.31 Calcium and Sodium Chlorides and Other Deicing Materials, D04.32 Bridges and Structures, E60.01 Buildings and Construction, E60.80 General Sustainability Standards.

International Cement Microscopy Association (ICMA) - ***Office,*** Past General Chairman

Federal Demonstration Project (FDP) – ***Co-Chair***, Membership Committee, ***Member***, Executive Committee, Faculty Committee, Faculty Steering Committee.

CONSULTING

2013 – present - Dr. Sutter serves as a Senior Consultant to American Engineering Testsing supporting activities related to concrete paving and concrete durability.

2006 - Dr. Sutter and Dr. Sidney Diamond (Purdue University) provided a one day seminar on Cement and Concrete Chemistry to the Technical Advisory Board of Dow Corning. The board is composed of academicians from Northwestern University, Harvard, MIT, Yale, and technical leaders from within Dow Corning.

2005 - Dr. Sutter and Dr. Van Dam provided a one-day seminar on Cement and Concrete Technology to the Technical Advisory Board of Dow Corning. The board is composed of academicians from Northwestern University, Harvard, MIT, Yale, and technical leaders from within Dow Corning.

2005 - Dr. Sutter served as an expert witness in a California litigation case regarding the use of scanning electron microscopy for the analysis of hardened concrete subject to sulfate attack.

2005 - Provided technical expertise to Zak Dirt of Fort Collins, Colorado regarding magnesium chloride attack to sidewalks and other flatwork.

2005 - Consulted with engineers and technicians at Cleveland Cliffs Mining on development of an automated iron-ore pellet testing instrument.

2005 - Consulted with representatives of the Montana Department of Transportation regarding premature bridge-deck failures.

2002 – present - Dr. Sutter has consulted with Applied Pavement Technology, Inc. Consulting has included investigations of materials-related distress on three airport projects that has resulted in one conference proceeding and financial support of the NC/VP laboratory.

2004 - Provided a declaration in a class action suit in California regarding sulfate attack on concrete slabs on grade. The declaration focused on support of a specific method of determining the water to cementitious materials ratio of a hardened concrete. The law firm was Kasdan, Simonds & Epstein in Irvine, California.

1995 – 1998 - Dr. Sutter presented numerous seminars on advanced applications of scanning electron microscopes (SEM) to materials and metallurgical engineering applications. Clients over the past seven years have included the University of Cincinnati, Argonne Labs (2 Seminars), Pacific Northwest Laboratories (Battelle Laboratories), University of Georgia, NASA Research at Huntsville Alabama, Air Force Research, San Antonio, TX , and Charles Evans Associates, San Francisco, CA. Topics presented include quantitative image analysis, electron microprobe analysis, and electron backscattered diffraction.

PUBLIC SERVICE

Continuing Education for Teachers

Aug/Sept. 2001 - Conducted training sessions to instruct Houghton Middle School science teachers on environmental electron microscopy and applications in K-12 education.

August 2001 - Conducted electron microscopy laboratory sessions for participants in the Masters of Engineering program offered to high school teachers by Engineering Fundamentals.

July 2001 - Conducted electron microscopy laboratory sessions for participants in the Internet 2 workshop offered for K-12 information technology personnel. Performed remote microscopy link with the University of Michigan.

Women in Engineering/Summer Youth Programs

July 2007 – Provided instruction for Summer Youth Program students in applications of microscopy for forensic science.

July 2001 - Conducted electron microscopy laboratory sessions for participants in the Women in Engineering studying Environmental Engineering.

K-12 Outreach

2009 - 2013

Provided demonstrations and hands-on experience making concrete to two Houghton Elementary 4th grade classes.

2008

Served as Assistant Team Manager for the Houghton Middle School Lego League Team. *The team placed first in the U.P. regional competition and 14h in statewide competition*.

Provided in class demonstrations on material properties to 6th grade science classes.

Provided demonstrations and hands-on experience making concrete to two Houghton Elementary 4th grade classes.

2007

Served as Team Manager for Houghton 7th grade Destination Imagination team. *The team placed first in the U.P. regional competition and fifth in statewide competition.*

Served as Assistant Team Manager for the Houghton Middle School Lego League Team. *The team placed first in the U.P. regional competition and 16h in statewide competition.*

Provided demonstrations and hands-on experience making concrete to three Houghton Elementary 4th grade classes, two Hancock Elementary 4th grade classes, and two Lake Linden Elementary 4th grade classes.

2006

Served as Team Manager for Houghton Elementary 6th grade Destination Imagination team. *The team placed second in the U.P. regional competition and fifteenth in statewide competition.*

Provided demonstrations and hands-on experience making concrete to two Houghton Elementary 4th grade classes.

Provided demonstrations of electron microscopes at Michigan Tech for Houghton Elementary 6th grade science class.

***K-12 Outreach* (*cont.*)**

2005

Served as Team Manager for Houghton Elementary 5th grade Destination Imagination team. *The team placed first in the U.P. regional competition and seventh in statewide competition.*

Provided demonstrations of various electron microscopes at Michigan Tech for Houghton Elementary 5th grade class.

Provided demonstrations and hands-on experience making concrete to Houghton Elementary 4th grade class.

Provided demonstrations of various electron microscopes at Michigan Tech for Houghton Elementary 4th grade class.

2004

Conducted live demonstration of environmental scanning electron microscope for approximately 25 Houghton Elementary School students.

Conducted a two-hour learning session for Houghton Elementary 4thgrade students where basics of concrete were taught.

2003

Conducted live demonstration of environmental scanning electron microscope for approximately 65 Calumet Elementary School students.

Conducted a two-hour learning session for Houghton Elementary third grade students where basics of concrete were taught and students made and formed concrete.

2002

Conducted training sessions to instruct high school science teachers on environmental electron microscopy and applications in K-12 education.

2001

Conducted live demonstration of environmental scanning electron microscope for approximately 65 Houghton Middle School students.

Conducted training sessions to instruct Houghton Middle School science teachers on environmental electron microscopy and applications in K-12 education.

Conducted electron microscopy laboratory sessions for participants in the Internet 2 workshop offered for K-12 information technology personnel. Performed remote microscopy link with the University of Michigan.

Other Community Service

2004 - 2007

Served as a Board Member of the Copper Country Suzuki Association. *Office Held: Vice-President*.

2000 - 2004

Volunteer at Houghton Elementary School - performed entertainment and assist with Spring Art Show.

Volunteer at Houghton Elementary School - performed entertainment, conduct reading groups, assist with Spring Art Show.

2001

Dr. Sutter and students in his Spring 2001 CET3270 class investigated alternative materials for sidewalks in Houghton at the request of the West Houghton Neighborhood Association and the City of Houghton.

1981 - present

Volunteer for Little Brothers- Friends of the Elderly - Work at holiday parties for elderly, deliver meals, participated as committee member on their recent Capital Campaign.

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COLLABORATORS (*all MTU except where noted*)

T. Ahlborn, P. Bergstrom, M. Broekmans (Norwegian Geological Survey), T. Cavaline (UNC-Charlotte), J. Crittenden (Georgia Tech), Y. Deshpande, G. Dewey, J. Gierke, S. Grant, D. Gress (University of New Hampshire), D. Hand, W. Hansen Univ. of Michigan), J. Hiller, R. Hodek, D. Hooton (University of Toronto), K. Kawatra, J. King, T. King, D. Landon, P. Lautala, T. Ley (Oklahoma State University), K. Mattila, L. Matuana, T. McNinch, J. Mihelcic (Univ. of S. Florida), J. Sandell, S. Schlorholtz (Iowa State University), K. Smith (APTech), B. Sproule, P. Taylor (Iowa State), M. Thomas (University of New Brunswick), P. Tikalsky (Oklahoma State University), T. Van Dam (NCE Consulting), J. Vandenbosche (University of Pittsburg), S. Vitton, C. Williams (Iowa State University), J. Weiss, (Purdue), D. Wright.