



Civil and Environmental Engineering

August 14, 2018

Lisa Wallick, P.E.
Stormwater Management Group Program Manager
Detroit Water & Sewerage Department
6425 Huber Street
Detroit, MI 48211

RE: Dispute Review Panel – Invitation for Participation

Dear Lisa,

Thank you for the invitation to participate on the DWSD Dispute Review Panel.

I accept the invitation to be considered.

I have attached my resume for review.

Feel free to contact me with any questions at (313) 706-9060.

Best,

A handwritten signature in black ink, appearing to read 'Carol J. Miller', is written over a faint, light-colored circular stamp.

Carol J. Miller, PhD. PE
Professor, Civil and Environmental Engineering
Director, Healthy Urban Waters
5050 Anthony Wayne Drive, Room 2154
Wayne State University
Detroit, MI 48202

WAYNE STATE UNIVERSITY

Carol J. Miller, PhD, PE

EDUCATION

Graduate: The University of Michigan, Ann Arbor, Michigan, December 1984 (PhD)
The University of Michigan, Ann Arbor, Michigan, December 1980 (MSE)
Baccalaureate: The University of Michigan, Ann Arbor, Michigan, August 1979 (BSE)

PROFESSIONAL APPOINTMENTS

Director, WSU Water Initiative/Center, 2014 (December) – Present
Chair, Department of Civil and Environmental Engineering, WSU, 2007 – 2012.
Board Member, Water Environment Research Federation (WERF), Arlington, VA, 2014-Present.
U.S. Chair, Great Lakes Science Advisory Board, International Joint Commission, 2014-Present.
Professor, Department of Civil and Environmental Engineering, WSU, 1998 – present.
Co-Director, Huron to Erie Alliance for Research and Training (HEART), 2012 – present.
Co-Director, Urban Watershed Environmental Research Group (UWERG), WSU, 2010-present.
International Joint Commission, Science Advisory Board (SAB), Appointed Member, 2011-Present.
Chair, Wayne State University President's Standing Committee on Environmental Initiatives, 2008-2012.
Chair, Wayne State University, College of Engineering, Faculty Assembly, 1998-1999.
US Army Corps of Engineers, IPA assignment, Flood Studies, Summer 1989.
Associate Professor, Department of Civil and Environmental Engineering, WSU, 1989 - 1998.
Assistant Professor, Department of Civil and Environmental Engineering, WSU, 1984 - 1989.

Signature: _____ 03/16/18

PROFESSIONAL REGISTRATION

Licensure: Professional Engineer Number 31003, Michigan, Continuous since 1989

PROFESSIONAL SOCIETY MEMBERSHIP

National Society of Professional Engineers

- SE Michigan Section Board (2005-2009) elected

American Society of Civil Engineers

International Association for Great Lakes Research (IAGLR)

HONORS AND AWARDS

Board Member – Water Environment Research Foundation, 2015 – present

National Academy of Sciences Invited Speaker, May 2014

Guest Editor – Sustainable Computing (Elsevier), Special Issue on Water&Energy, 2014

Fellow - Engineering Society of Detroit, Inducted as Fellow, June 2012

Member - Chi Epsilon, National Civil Engineering Honor Society

Member - Tau Beta Pi - National Engineering Honor Society

Member - Sigma Xi

Career Development Chair Award, WSU

Engineering Educator of the Year, Michigan Society of Professional Engineers

Engineer of the Year, Michigan Society of Professional Engineers, SE Michigan

Faculty Service Award, WSU

WSU Fall Convocation: Featured Faculty Speaker (2009)

WSU Inaugural Chair Mentoring Session Speaker (2011)

National Science Foundation, External Review (Committee of Visitors) of CMS Division

International Joint Commission, Science Advisory Board (2010-Present)

Chair, State of Michigan Board of Licensing for Professional Engineers, 2001-03

Rackham Dissertation Fellowship, The University of Michigan

H.W. King Hydraulics Fellowship, The University of Michigan

RESEARCH IN PROGRESS (Not Funded)

1. Smart and Connected Communities: Data Driven Approaches of Distributed Electricity Transactional Model for Sustainable Energy Development. A NSF SCC proposal is currently under review. CWang is PI
2. Energy and Environmental Big Data Analytic - Towards Sustainable Energy Development and Environmentally Sensitive Energy Use, working with Environmental Engineering colleagues and industry (E2i, WattTime, Great Lakes Water Authority, etc.), planning to submit a NSF proposal.
3. Microplastics and Emerging Contaminants in Source Water – Proposal under Review by GLWA – Expected Award June 2018. Zhang and Miller.
4. NIEHS Superfund – Miller with Runge-Morris are co-PIs on P30 grant submission - CLEAR: Center for Leadership in Environmental Awareness and Research (Fall, '18)

FUNDED RESEARCH AND GRANTS (SELECTED LISTING)

CURRENT

1. Educate and enable Illinois residents to actively reduce home- and work-related carbon emissions using innovative Carbon Cash and LEEM technologies, **Illinois Science & Energy Innovation Foundation**, PI, \$100,000, 1/1/2018 – 12/31/2018.
2. REU Site: Summer Academy in Sustainable Manufacturing, **NSF**, Senior Personnel with one student summer support for three years (about \$24,000 in total, PI: Jeremy Rickli), \$370,642, 11/1/2015-10/1/2018, 4%.
3. **National Science Foundation**, Field Stations and Marine Laboratories: HEART Field Stations for HEALTHY URBAN WATERS (2016-2018). PI
4. **National Science Foundation**, NRT: Transformative Research in Urban Sustainability and Training T-RUST, (2017-2021) \$2,900,000; co-PI. (Donna Kashian, PI)
5. **National Science Foundation**, Identifying Generation and Emission Sources for Individual Loads at Specific Locations and Times: Toward Environmentally Sensitive and Guided Electricity Usage, (2015-2018) \$359,965; co-PI. NSF, ECCS-1508910. (Caisheng Wang, PI)
6. **National Institute of Health; National Institute of Environmental Health Sciences** (2016-2018), Rapid Response to Contaminants in Flint Drinking Water. \$421,435 total, McElmurry, S.P.; Miller, C.J.; Pitts, D.K.; Sackey, D.J.; Seeger, M.; Masten, S.J.; Hanna-Attisha, M. McElmurry is PI
7. **American Water Works Association (AWWA)**, (2016 – July 2018). *Accelerating the Shift to Environmentally Sensitive Electricity through Collaborative Competition* (GLPF project #1072). Total Grant \$550,000. WSU portion \$150,000. PI.
8. **Michigan Energy Office** (2017-2018). PI. Benchmarking Energy Consumption in Detroit's Municipal Buildings. \$80,000. (two awards)
9. **Erb Family Foundation**, (2015-2018). PI. Healthy Urban Waters. \$650,000

COMPLETED

- **National Science Foundation** (2015-16), CBET Award # 1541869, A Workshop for Integrative and Sustainable Food, Energy, and Water in Transitioning Urban Landscapes, \$28,840. PI
- **National Science Foundation** (2013-14), Field Station and Marine Laboratory Planning Grant: HEART Field Center. PI
- **US Army Corps of Engineers** (2014-2016), Dam Capacity II - Analysis under Changing Climate: Modeling, Radionuclide Dating, and Analysis. PI
- **DTE Energy** (2013-14), Evaluation of Pressure Surge Failure of PVC Piping in Power Plant Operation: Valve Closure Features. PI
- **NOAA, Michigan Sea Grant** (2014 – 2016), Two-Stage Ditch Design in Macomb County, MI. PI
- **Great Lakes Protection Fund** (2013-2015), Real-Time Energy Impact Monitors for Residential, Industrial and Policy Use. PI

- **State of Michigan** (2014-2015), Beach Health Monitoring via Rapid Methods using qPCR: Pilot at Lake St. Clair MetroPark Beach. Co-PI \$100,000 Paul Muelle (HCMA) is PI. Funding for students and equipment only.
- **Michigan Department of Environmental Quality** (2012-2014). Great Lakes Large Aquatic Ecosystem Data Exchange. Co-PI. McElmurry is PI
- **Great Lakes Commission** (2010-11), Delisting of Beneficial Use Impairments of the Detroit River Area of Concern. PI
- **Ford Motor Company** (2011), Sustainable Technologies Workshops and Conference. PI
- **URC** (2010-11), Innovation in Water Science and Technology, Education and Entrepreneurship - Creating Michigan's WaterHub through Academic-Government-Private Partnerships. co-PI with Love (UM) and Rose (MSU)
- **University of Detroit Mercy** (2010), Incorporating Environmental Sustainability into Transit Oriented Development on Detroit LRT System. (PI: Khasnabis)
- **US Army Corps of Engineers** (2009-12), Sediment Yield and Dam Capacity in the Great Lakes Watershed. PI
- **Great Lakes Protection Fund** (2008-14), Real-Time System Optimization for Sustainable Water Transmission and Distribution. PI
- **National Science Foundation** (2007-2010), Collaborative Project: Development of Materials for Teaching Design for Sustainability via Spiral Learning. co-PI
- **WSU** (2008-2009), Digital Library for Complex Environmental Analyses of the St. Clair Watershed. Wayne State University, Office of the Vice President for Research. PI, with McElmurry, Fotouhi, Pitts, Kashian.
- **WSU** (2007-2008), Assessment and Compilation of Data for the Digital Library for Urban Environmental Data and Watershed Management. Wayne State University, Office of Vice-President for Research. Co-PI (Baskaran is PI)
- **Michigan Dept. of Transportation and FHWA** (2007-10), A Critical Evaluation of Bridge Scour for Michigan-Specific Conditions. co-PI
- **WSU Faculty Global Grants Competition** (2006), Civil and Environmental Engineering Collaboration in Education and Research with Venezuelan Universities. PI
- **American Water Works Association Research Foundation** (2003). Pharmaceuticals, Personal Care Products and Endocrine Disruptors -- Occurrence, Fate and Transport in the Great Lakes Water Supplies and the Effect of Advanced Treatment Processes on Their Removal: AN AWWARF TAILORED COLLABORATION PROPOSAL. co-PIs: The Windsor Utilities Commission – Oakland University – Wayne State University. Dr. Miller's portion is the hydraulic model of the Detroit River.
- **Detroit Water and Sewerage Department** (2003), Pump System Training Program for DWSD Engineers and Operators. PI
- **Center for Urban Labor and Metropolitan Affairs** (2001), Professional Engineering Policy in Michigan: Implications of Globalization, 2001 Summer Faculty Research Support from the State Policy Center. PI
- **National Science Foundation** (2002-2003), REU supplement to 3-D Characterization and Analytical Description of Desiccation Cracking. PI.

- **National Science Foundation** (1998-2003), 3-D Characterization and Analytical Description of Desiccation Cracking. PI
- **U.S. EPA (Rouge Program Office; Camp Dresser and McKee)** (1998-2001), Full Scale 2-D Numerical Model Calibration for Predicting Combined Sewer Overflow Treatment Basin Efficiency. PI
- **WSU Internal Seed Funding Competition** (1997-98). Fate and Mobility of Polychlorinated Biphenyls (PCBs) in Landfills. co-PI with G. Shreve.
- **National Science Foundation** (1995-97), Containment and Remediation of Mixed Waste Streams. PI
- **National Science Foundation** (1993-95). Kinematic Wave Formulation for Flow Through Macro-Porous Soil. PI
- **Foamseal Corporation**, Oxford MI (1993-94). Evaluation of a Poly-urea Spray Elastomer for Landfill Cover Liner Applications: Phase II - Field Evaluation. PI
- **Foamseal Corporation**, Oxford MI (1991-93). Evaluation of a Poly-urea Spray Elastomer for Landfill Cover Liner Applications: Phase I - Material Design and Analysis. PI
- **Barber Fund** (1990). Categorizing Hazardous Waste Sites to Obtain More Efficient Cost Allocations and Cleanups. co-PI with Prof. Robert Abrams of WSU Law School.
- **Assorted Grants** Prior to 1990 - Engineering Foundation, WSU, KMart Corporation, City Management Corporation.

REFEREED JOURNALS AND TRANSACTIONS

- Bilhan, O., Emiroglu, M.E., Miller, C., Ulas, M. (2018). The Evaluation of the Effect of Nappe Breakers on the Discharge Capacity of Trapezoidal Labyrinth Weirs by ELM and SVR Approachs. *Journal of Flow Measurement and Instrumentation*. (Under review)
- Sadatiyan A., S. M., Miller, C. J. (2017). PEPSO: Reducing Electricity Usage and Associated Pollution Emissions of Water Pumps. *Water*, 9, 9, 640. <http://www.mdpi.com/2073-4441/9/9/640.htm>
- Bilhan, Omer & Aydin, Mehmet & Emiroglu, Muhammet & Miller, Carol. (2017). Experimental and CFD Analysis of Circular Labyrinth Weirs. *Journal of Irrigation and Drainage Engineering*. 10.1061/(ASCE)IR.1943-4774.0001301.
- Alighalehbabakhani, F., Miller, C.J., Baskaran, M., Selegean, J., Barkach, J., Dahl, T., Abkenar, S.M. (2017). Forecasting the remaining reservoir capacity in the Laurentian Great Lakes watershed, *Journal of Hydrology*, 555, 926-937, <https://doi.org/10.1016/j.jhydrol.2017.10.052>

- Zhao, Z., Wang, C., Wang, Y., **Miller, C.J.** (2017). Temporal and Spatial Load Management for Cost and Emission Reduction, *Canadian Journal of Electrical and Computer Engineering (CJECE)*, 40, 2, 83-92.
- Mao, X., **Miller, C.**, Zheng, X., Zhou, L. (2017). Cement Improved Highly Weathered Phyllite for Highway Subgrades: a case study in Shaanxi Province, *Journal of Traffic and Transportation Engineering*, 4, 4, 403-411. <http://www.sciencedirect.com/science/article/pii/S2095756417303094>.
- Watson, S., **Miller, C.J.**, Arhonditsis, G., et al. (2016). The re-eutrophication of Lake Erie: Harmful algal blooms and hypoxia. *Harmful Algae*, 56, 44-66. <http://dx.doi.org/10.1016/j.hal.2016.04.010>
- Alighalehbabakhani, F., **Miller, C.J.**, Seleguean, J.P., Barkach, J., Sadatiyan Abkenar, S. M., Dahl, T., Baskaran, M. (2016). Estimates of sediment trapping rates for two reservoirs in the Lake Erie watershed: Past and present scenarios. *Journal of Hydrology*, 544, 147-155. <http://dx.doi.org/10.1016/j.jhydrol.2016.11.032> 0022-1694/ 2016 Elsevier.
- Bilhan, O., Emiroglu, M.E., **Miller, C.J.** (2016). Experimental Investigation of Discharge Capacity of Labyrinth Weirs with and without Nappe Breakers. *World Journal of Mechanics*, 6, 207-221. <http://dx.doi.org/10.4236/wjm.2016.67017>
- Kumar, A., Hage-Hassan, J., Baskaran, M., **Miller, C.**, et al. (2016). Multiple sediment cores from reservoirs are needed to reconstruct recent watershed changes from stable isotopes ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) and C/N ratios: case studies from the mid-western United States, *Journal of Paleolimnology*, 56, 15. doi:10.1007/s10933-016-9888-0.
- Calappi, T., **Miller, C.** (2016). Decay of Pressure Fluctuation in the Hyporheic Zone around a Cylinder. *World Journal of Mechanics*, 6, 159-168. doi: [10.4236/wjm.2016.64013](http://dx.doi.org/10.4236/wjm.2016.64013).
- Treemore-Spears, L.J., Grove, J. M., Harris, C. K., Lemke, L. D., **Miller, C. J.**, Pothukuchi, K., Zhang, Y., Zhang, Y. L. (2016). A workshop on transitioning cities at the food-energy-water nexus, *Journal of Environmental Studies and Sciences*, 6, 1, 90-103. <http://dx.doi.org/10.1007/s13412-016-0381-x>.
- Kumar, A., Hage-Hassan, J., Baskaran, M., **Miller, C.J.**, Seleguean, J.P., Creech, C.T. (2016). Multiple sediment cores from reservoirs are needed to reconstruct recent watershed changes from stable isotopes ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) and C/N ratios: case studies from the midwestern United States. *Journal of Paleolimnology*, 56, 15-31, doi: 10.1007/s10933-016-9888-0.

- Miller, C.** (2015). Introduction to special issue on Computing for a Greener Water/Energy/Emissions Nexus. *Sustainable Computing: Informatics and Systems*, 8, 1-2.
- Miller, C.J.** (2015). Computing for a Greener Water/Energy/Emissions Nexus, *Sustainable Computing: Informatics and Systems* 8, 1-2, DOI: 10.1016/j.suscom.2015.11.001 (Dr. Miller is Editor of this Special Issue).
- Baskaran, M., Miller, C., Anupam, K., Andersen, E., Selegan, J., Creech, C., Barkach, J.** (2015). Sediment Accumulation Rates and Sediment Dynamics Using Five Different Methods in a Well-Constrained Dam: Case Study from Riley Dam, MI. *Journal of Great Lakes Research*, 41, 2, 607-617, ISSN 0380-1330, <http://dx.doi.org/10.1016/j.jglr.2015.03.013>.
- Baskaran, M., Miller, C.J., Kumar, A., Andersen, E., Hui, J., Selegan, J.P., Creech, C.T., Barkach, J.** (2015). Sediment Accumulation Rates and Sediment Dynamics Using Five Different Methods in a well-constrained Impoundment: Case Study from Union Lake, Michigan. *Journal of Great Lakes Research*, 41, 607-617.
- Harris, A., Rogers, M., Miller, C.J., McElmurry, S., Wang, C.** (2015). Residential emissions reductions through variable timing of electricity consumption. *Applied Energy*, 158, 484-489. Impact Factor: 7.182.
- Creech, C., Siqueira, R., Selegan, J., Miller, C. J.** (2015). Anthropogenic impacts to the sediment budget of São Francisco River navigation channel using SWAT. *International Journal of Agriculture & Biological Engineering* Open Access at <http://www.ijabe.org> Vol. 8 No.3 (133).
- Wang, C., Miller, C., Nehrir, M. H., Sheppard, J., McElmurry, S.** (2015). A load profile management integrated power dispatch using a Newton-like particle swarm optimization method, *Sustainable Computing: Informatics and Systems*, 8, 8-17. ISSN 2210-5379, <http://dx.doi.org/10.1016/j.suscom.2014.10.001>.
- Rogers, M., Xu, G., Miller, C., McElmurry, S., Shi, W., Wang, Y., ... Xu, C.** (2015). HERO: A smart-phone application for location based emissions estimates, *Sustainable Computing: Informatics and Systems*, 8, 3-7. ISSN 2210-5379, <http://dx.doi.org/10.1016/j.suscom.2014.09.001>.
- Abkenar, S.M.S., Stanely, S.D., Chase, D.V., Miller, C.J., McElmurry, S.P.** (2014). Evaluation of genetic algorithms using discrete and continuous methods for pump optimization of water distribution systems, *Sustainable Computing: Informatics and Systems*. DOI: [10.1016/j.suscom.2014.09.003](http://dx.doi.org/10.1016/j.suscom.2014.09.003)
- Jin, S., Miller, C., Loya- Smalley, C., Tucker, E., Qaqish, A.** (2013). Optimizing water delivery system storage and its influence on air pollutant emission

- reduction, *Sustainable Computing: Informatics and Systems*, 8, 1-6. ISSN 2210-5379, <http://dx.doi.org/10.1016/j.suscom.2014.09.002>
- Alighalehbabakhani, F., Sadatiayn, M., Jin, S., **Miller, C.J.**, Fracasso, P., McElmurry, S. (2014). Comparative evaluation of three distinct energy optimization tools applied to real water network (Monroe), *Sustainable Computing: Informatics and Systems*, 8, 29-35. ISSN 2210-5379, <http://dx.doi.org/10.1016/j.suscom.2014.11.001>
- Mao, X., **Miller, C.**, Hou, Z., Khandker, A., Xiao, X. (2014). Experimental Study of Soil Water Migration in Freezing Process, *Geotechnical Testing Journal*, 37, No. 3, 2014, 436–446. doi:10.1520/GTJ20130119. ISSN 0149-6115.
- International Joint Commission (2014). A Balanced Diet for Lake Erie: Reducing Phosphorus Loadings and Harmful Algal Blooms. Report of the *Lake Erie Ecosystem Priority*. ISBN: 978-1-927336-07-6. **Miller** is one of work group authors.
- Wang, Y., Wang, C., **Miller, C.**, McElmurry, S.P., Rogers, M.M. (2014). Locational Marginal Emissions: Analysis of pollutant emission reduction through spatial management of load distribution. *Applied Energy*, 119, 141-150 [doi:10.1016/j.apenergy.2013.12.052](http://dx.doi.org/10.1016/j.apenergy.2013.12.052)
- Rogers, M., Wang, Y., Wang, C., McElmurry, S.P., **Miller, C.J.** (2013). Evaluation of a Rapid LMP-Based Approach for Calculating Marginal Unit Emissions. *Applied Energy*, 111, 812-820. [doi:10.1016/j.apenergy.2013.05.057](http://dx.doi.org/10.1016/j.apenergy.2013.05.057)
- Baskaran, M., **Miller, C.**, Anupam, K., Andersen, E., Selegan, J., Creech, C., Barkach, J. (2013). Sediment Accumulation Rates and Sediment Dynamics Using Five Different Methods in a Well-Constrained Dam: Case Study from Riley Dam, MI. *Journal of Great Lakes Research*, 41, 607-617.
- Calappi, T., **Miller, C.**, Carpenter, D., Dahl, T (2012). Developing a family of curves for the HEC-18 scour equation. *International Journal of Geosciences*, 3, No. 2, 297-302. doi:10.4236/ijg.201232031
- Carter, T.H., Wang, C., Miller, S.S., McElmurry, S.P., **Miller, C.J.**, Hutt, I.A (2011). Modeling of power generation pollutant emissions based on locational marginal prices for sustainable water delivery, *Energytech*, 2011 IEEE. Cleveland, OH: IEEE. p. 1-6. [DOI:10.1109/EnergyTech.2011.5948499](http://dx.doi.org/10.1109/EnergyTech.2011.5948499) (refereed)
- Carpenter, D., **Miller, C.**, Calappi, T., Hettiarachchi, H., McClarren, M. (2011). Project # 85106 and 108493: A critical review of bridge scour for Michigan specific conditions, Final report submitted to Michigan Department of Transportation, Office of Best Practices, Lansing Michigan.

- M. Rifai, S., Miller, C. (2009). Theoretical Assessment of Increased Tensile Strength of Fibrous Soil Undergoing Desiccation, *Journal of Geotechnical and Geoenvironmental Engineering, ASCE*, 135, 12.
- Sha K., Zhan G., Al-Omari S., Calappi T., Shi W., Miller C. (2009) Data Quality and Failures Characterization of Sensing Data in Environmental Applications. In: Bertino E., Joshi J.B.D. (eds) *Collaborative Computing: Networking, Applications and Worksharing*. CollaborateCom 2008. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol 10. Springer, Berlin, Heidelberg.
- Han, Y.S., Lee, J.Y., Miller, C., Franklin, L. (2009). Characterization of humic substances in landfill leachate and impact on the hydraulic conductivity of geosynthetic clay liners. *Waste Management & Research*, 27, 3, 233-241.
- Miller, C., Mishra, M. (2007). Modeling of leakage through cracked clay liners II: a new perspective, *Journal of the American Water Resources Association*, 25, 557 - 563.
- Miller, C., Mishra, M. (2007). Modeling of leakage through cracked clay liners I: state of the art *Journal of the American Water Resources Association*, 25, 3, 551 - 556.
- Miller, C.J., Rifai, S. (2004). Fiber Reinforcement for Waste Containment Soil Liners, *ASCE Journal of Environmental Engineering (JEE)*, 130, 8, 891-896.
- Inci, G., Miller, C., Yesiller, N. (2004). Design of Zebra Mussel Control Measures for Hydro-Electric Power Projects. *Civil and Environmental Engineering*.
- Miller, C.J. (2003). Groundwater Monitoring, *Encyclopedia of Agrochemicals*, 2, 689-694.
- Miller, C. J., Yesiller, N., Yaldo, K., Merayyan, S. (2002). Impact of Soil Type and Compaction Conditions on Soil Water Characteristic, *Journal of Geotechnical and Geoenvironmental Engineering*, 128, 9, 733-742.
- Miller, C., Merayyan, S., Yesiller, N. (2000). Unsaturated Performance Comparison of Compacted Clay Landfill Liners, *Advances in Unsaturated Geotechnics*, 555-568.
- Yesiller, N., Inci, G., Miller, C. (2000). Ultrasonic Testing for Compacted Clayey Soils, *Advances in Unsaturated Geotechnics*, 54-68.

- Lee, J.Y., Miller, C. (2000). Fractal dimension for the cracks of compacted clay liners in the landfill cover system in winter condition, *Geosciences Journal*, 4, 2, 89-93.
- Yesiller, N., Miller, C.J., Inci, G., Yaldo, K. (2000). Desiccation and cracking behavior of three compacted landfill liner soils, *Engineering Geology*, 57, 1-2, 105-121.
- Miller, C. J., Merayyan, S., Yesiller, N. (2000). Influence of Unsaturated Soil Parameters on Predicted Leakage from Compacted Clay Landfill Liners, *Advances in Unsaturated Geotechnics, ASCE GSP 99*, 555-568.
- Miller, C., Lee, J-Y. (1999). Response of landfill clay liners to extended periods of freezing, *Engineering Geology*, 51, 4, 291-302.
- Miller, C.J., Mi, H., Yesiller, N. (1998). Experimental Analysis of Desiccation Crack Propagation in Clay Liners, *Journal of the American Water Resources Association*, 34, 3, 677-686.
- Miller, C.J., Denning, C. (1997). Poly-urea Spray Elastomer for Waste Containment Applications, *Emerging Technology*, 4, 2, 6-7.
- Miller, C.J., Lee, J. Y. (1997). Depth of Frost Penetration in Landfill Cover Systems, *Environmental Engineering Science*, 14, 1, 67-72.
- Miller, C.J. (1997). Polyurea Spray Elastomer Used for Containment, *Tech Trends, EPA*, 4-5.
- Salim, I., Miller, C.J., Howard, J. (1996). Combined Adsorption Isotherm-Sequential Extraction Analysis of a Landfill Liner, *Soil Science Society of America Journal*, 60, 1, 107-114.
- Miller, C.J., Kummler, R.H., McMicking, J.H., Powitz, R.W. (1992). Closure to "Educational Program for Hazardous Waste Management", *Journal of Professional Issues in Engineering*, 116, 2, 221-228.
- Miller, C.J. (1990). Training Municipal Employees in Hazardous Waste Issues, *Journal of Professional Issues in Engineering*, 116, 1, 61-66.
- Miller, C.J., Mishra, M. (1989). Field Verification of HELP Model for Landfills: Discussion, *Environmental Engineering Journal of the ASCE*, 115, 4, 882-884.
- Miller, C.J., Mishra, M. (1989). Hazardous Waste Containment for Clay Liners, *Groundwater Management: Quantity and Quality* (191-201), International Association of Hydrological Sciences, Publication No. 188, 1989, ISBN 0-947571-32-9.

- Miller, C.J., Mishra, M. (1989).** Modeling of Leakage Through Compacted Clay Liners - I: State of the Art, *Water Resources Bulletin*, 25, 3, 551-556.
- Miller, C.J., Mishra, M. (1989).** Modeling of Leakage Through Cracked Clay Liners - II: A New Perspective. *Water Resources Bulletin*, 25, 3, 557-563.
- Miller, C.J., Wright, S.J. (1988),** Application of Variably Saturated Flow Theory to Clay Cover Liners. *Hydraulic Engineering Journal of the ASCE*, 114, 10, 1283-1300.
- Miller, C. (1988).** Field Investigation of Clay Liner Movement. *Hazardous Waste and Hazardous Materials*, 5, 231-238.

REFEREED CONFERENCE PROCEEDINGS

- Fu, C., Wang, C., Miller, C. J. (2017).** Characterization and Distribution Model for Fuel Costs in Electricity Market, IESC 2017, *International Energy & Sustainability Conference (IESC)*, Farmingdale, New York, USA.
- Zhao, Z., Fu, C., Wang, C., Miller, C.J. (2018).** Improvement to the Prediction of Fuel Cost Distributions Using ARIMA Model, Accepted for Presentation and Publication in IEEE PES 2018.
- Zhao, Z., Wang, C., Nokleby, M., Miller, C. J. (2017).** Improving Short-Term Electricity Price Forecasting Using Day-Ahead LMP with ARIMA Models, 2017 IEEE PES General Meeting, July 2017.
- Fu, C., Wang, C., Miller, C. J., Wang, Y. (2017).** Characterization and Prediction of Fuel Costs for Electrical Power Generation, IEEE Explore, Accepted by International Energy & Sustainability Conference (IESC).
- Alighalehbabakhani, F., Miller, C., Selegan, J.P., Bilhan, O. (2017).** Impacts of land use change and dam construction on sediment delivery to the Laurentian Great Lakes, *LAGLR's 60th Annual Conference on Great Lakes Research*, Detroit, MI.
- Alighalehbabakhani, F., Miller, C. (2016).** Sediment accumulation rate within the reservoirs in the Lake Erie basin, *6th Annual Collegiate Student Paper Competition at the 2016 ASFPM National Floodplain Managers Conference*, Grand Rapids, MI.
- Wang, C.; Wang, Y.; Miller, C.J., Lin, J. (2016).** Estimating Hourly Marginal Emission in Real Time for PJM Market Area Using a Machine Learning Approach, IEEE PES General Meeting, Boston, MA.
- Alighalehbabakhani, F., Miller, C. (2016).** Assessing Sediment Accumulation in Reservoirs behind Dams in the Great Lakes Watershed from Past to Present, Wayne State University Graduate and Postdoc Research Symposium.

- Al-Talibi, A., **Miller, C. J.** (2016). The Energy Trilogy: An Integrated Sustainability Model to Bridge Wastewater Treatment Plant Energy and Emissions Gaps, Accepted for presentation at publication, EAW, Ontario CA.
- Zhao, Z., Wang, C., Wang, Y., **Miller, C.J.** (2015). Comparison Study of Different Load Management Methods for Cost and Emission Reduction, 2015 IEEE Electrical Power and Energy Conference (EPEC), London, Canada.
- Barkach, J., **Miller, C.J.**, Selegean, J., Babakhani, F. (2015, April 17-20). Sediment Characteristics and Sediment Transport Modeling for the Saginaw River Navigation Channel, Poster Presentation at *SEDHYD 2015* (10th Federal Interagency Sedimentation Conference), Reno NV.
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Sadatiyan, M., Stanley, S.D., Chase, D., Miller, C. (2013, June 26). Optimizing pumping system for sustainable water distribution network by using Genetic Algorithm, Proceedings of *Fourth International Green Computing Conference (IGCC)*, Arlington, VA.

Alighalehbabakhani, F., Miller, C.J., McElmurry, S. P. (2013, June 26). A Case Study of Energy Cost Optimization in Monroe Water Distribution System, Proceedings of *Fourth International Green Computing Conference (IGCC)*, Arlington, VA.

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Wang, C., McElmurry, S., Miller, C., Zhao, J. (2012, July). Load Management Integrated Economic/Environmental Electric Power Dispatch. Proceedings of the 2012 *IEEE PES (Power and Energy Society) General Meeting*, San Diego, CA.

Miller, C., Andersen, E., Baskaran, M., Selegan, J., Hui, J., Creech, C., Barkach, J. (2012). Anthropogenic Impacts on Sediment Production in Great Lakes

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Sha, K., Zhan, G., Al- Omari, S., Calappi, T., Shi, W., Miller, C. (2008, November 13-16). Data Quality and Failures Characterization of Sensing Data in Environmental Applications. *Collaborative Computing: Networking, Applications and Worksharing*, 4th International Conference, CollaborateCom, Orlando, FL, USA.

Merayyan, S., Miller, C. (2006). Determination of the Soil-Water Characteristic Curve Using the Evaporation Technique, *Fourth International Conference on Unsaturated Soils*.

Marin, M., Franklin, L., Miller, C. (2005, July). Soil-Lead Contamination Screening Tool, *World Water and Environmental Resources Congress*.

Al-Omari, S., Shi, W., Miller, C. (2004). SESAME: A Sensor System Accessing and Monitoring Environment.

CHAPTERS PUBLISHED

1. Authored

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2. Co-Authored

Pierson, D. M., Alqahtani, S. N., Muelle, R., and **Miller, C. J.** (2017). Approach to Developing a Sustainability Office at the University Level – Chapter 1 in *Sustainability Practice and Education on University Campuses and Beyond*, A. Kumar and D.S. Kim, editors, Bentham Book Publishers.

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Wright, S.J. and C.J. Miller, (1982), "Estimates of Seepage Through Clay Covers on Hazardous Waste Landfills," Chapter 22 of Hazardous Waste Management for the 80's, Ann Arbor Science Publishers, 1982, pp. 343-356. ISBN 0-250-40429-X

OTHER PUBLICATIONS

HERO DESCRIPTION FOR PUBLIC on YOUTUBE: Rogers, Miller, McElmurry, Wang at: <http://www.youtube.com/watch?v=BfLTY8sFiQ8>

Publication of HERO ANDROID APP at GooglePlay: Xu, Rogers, Miller, McElmurry, Shi, Wang at:
https://play.google.com/store/apps/details?id=com.amaker.herotest&feature=search_result#?t=W251bGwsMSwyLDEsImNvbS5hbWFrZXIuaGVyb3Rlc3QiXQ.
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INSTITUTIONAL SERVICE – SELECTED EXAMPLES

- Thesis reviewer for the MAGS Distinguished Master's Thesis (Graduate School function) (2010,2012)
- Director, Center for Research on Urban Watersheds (CRUW) (2015-Present)
- Co-Director, Urban Watershed Environmental Research Group (UWERG) (2010 – Present)
- University Field Station Design, 2014-Present
- Transborder Research University Network (TRUN), WSU Representative (2009 - Present)
- Hosting Visiting Professors (semester-long) from Turkey, USA and China (1998-2015)
- President's Standing Committee on Environmental Initiatives, Chair (2008-2012)
- College of Engineering, Budget Committee (2012-Present)
- Chi Epsilon, Student Chapter Faculty Advisor, 2002 - 2006
- Panelist, WSU Department Chairs Mentoring Workshop, October 14, 2011 and upcoming (March 7, 2014)
- Department P&T Committee, 2001-2007, 2012-Present
- College P&T Committee, 2001-2007, 2012 – Present

- University P&T Committee, 1998, 2012, 2017
- Graduate Council, 1994, 1995
- Chair, COE Faculty Assembly (1998-1999)
- Society of Women Engineers, Student Chapter Faculty Advisor, 1998-2000
- Over 30 University, College, and Department Committee Memberships

NATIONAL SERVICE – SELECTED EXAMPLES

- Research Advisory Board, Water Environment Research Foundation, 2015-18
- Session Chair and Host Committee, International Association for Great Lakes Research 2017 Conference, May 15-17, 2017.
- National Science Foundation – Proposal Review Panels (many) including, most recently:
FSML (2017), CAREER (2016) and US:China Water (2015).
- National Science Foundation – Invited Member to the Committee of Visitors (COV) – an 8 member group of individuals to do an external review of the NSF. My focus group is CMS. On-site review in April and June, 2001.
- National Science Foundation, Proposal Review Panelist (10 Panels) (Most recent is Graduate Research Fellowship Program (GRFP), meeting January 2014; CAREER Panel 2010)
- US EPA, Proposal Review Panelist (3 Panels)
- Proposal Review Panel for Natural Science and Engineering Research Council of Canada (NSERC), 2010
- Invited member of the National Council of Examiners for Engineering and Surveying (NCEES) committee on FE Examination Development – meetings held in Clemson, S.C. for purposes of developing a new examination module for Part I of the PE exam.
- Board of Sustainability Advisors to Detroit Renewable Energy (2012, 2013)
- International Joint Commission, Science Advisory Board (2011-Present), recent output includes: Great Lakes Science Advisory Board, Taking Action on Lake Erie Work Group (Miller chaired the urban portion of work group) Report: *Lake Erie Ecosystem Priority | Scientific Findings and Policy: Recommendations to Reduce Nutrient Loadings and Harmful Algal Bloom, Draft Summary Report*, August 2013. International Joint Commission. Available at: <http://www.ijc.org/files/tinymce/uploaded/Draft%20LEEP-Aug29Final.pdf>
- Publication Review Activity for:
 - ASCE Journal of Environmental Engineering
 - ASCE Journal of Hydraulic Engineering
 - Air, Water, and Waste Management
 - American Water Research Association
 - Geoscience Journal
 - Canadian Geotechnical Journal
 - Journal of Geotextiles and Geomembranes

- January, 2014: Proposal Review University of Michigan Water Center under the RFP *Increasing Freshwater Research Capacity at the University of Michigan*.
- January, 2014: Fellowship application review, National Science Foundation, Graduate Research Fellowship Program for Civil and Environmental Engineering.

RECENT OUTREACH ACTIVITIES

- Collaboration with Greening of Detroit and City of Detroit for Brownfield Remediation using Dendroremediation (2011 - 2012)
- RWQIMS (Real-Time Water Quality Information Management System) developments for the Huron-Erie Corridor with Friends of Detroit River, Macomb County, and others (2010- Present)
- Transborder Research University Network (TRUN), WSU Representative (2009 - Present)
- Adopt-A-Beach, Belle-Isle, UWERG Activity (2011 - Continuous)
- Friends of Detroit River (FDR) and Friends of the Rouge Science Collaboration (2010 – Present)
- Developed and Presented a WSU component of “Shiver on the River” for FDR events on Belle Isle (2010,2011) with Dr. David Pitts (Pharmaceutical Sciences) and Dr. Jeffrey Ram (Physiology)
- Interactions with Directors of Natural Science Field Stations throughout the US as part of the WSU Field Station developments (2012-Present)

PHD DISSERTATION CHAIR (COMPLETED)

- **Mohsen Sadatian**, “Optimization of Water Distribution Systems for Emission Reduction Using Genetic Algorithms”, May 2016.
- **Fatemeh Alighalehbabakhani** “Evaluating Sediment Accumulation Behind Dams in the Great Lakes Watershed from Past to Present”, May 2017.
- **Adim Al-Talibi**, “Energy Trilogy in WasteWater Treatment Design: Energy-Related Emissions Accounting”, 2014.
- **Calvin Creech**, “Coupled Sediment Yield and Sediment Transport Model to Support Navigation Planning in Northeast Brazil”, 2014.
- **Timothy Calappi**, “Investigation of Pressure Fluctuations in the Hyporheic Zone in Response to a Hydraulic Structure”, 2013.
- **Maria Marin**, “Urban Soil-Lead Contamination and Humic Substance Forms”, 2007.
- **Lance Franklin**, “Organic Fractionation and Chemical Characterization of Organometallic Forms of Lead in Contaminated Michigan Soils”, 2005.
- **Dima Soued El-Gamal**, “Streamlined Remediation Decisions for Brownfield Redevelopment”, 2005.
- **Saad Merayyan**, “Transient Analysis of Soil-Water Characteristic Curves Using Pressure Plate Methodology”, 2001.

- **Sami Rifai**, "Fiber Additives as a Mechanism for Improved Performance of Clay Liners", 2000.
- **Maria Staab**, "Effects of Biodegradation on the Hydraulic Oil Constituents C10 – C34", 1999.
- **Kareem Yaldo**, "Impact of Soil Type and Compaction Conditions on Soil-Water Characteristic Curves", 1999.
- **Manoj Mishra**, "Mathematical Modeling of Leakage Through Macropores in Landfill Cover Liners", 1996.
- **Hong Mi**, "Kinematic Wave Formulation for Flow Through Macroporous Soil", 1995.
- **Imad Salim**, "Modeling the Sorption and Transport of Heavy Metals through Landfill Clay Liners", 1994.
- **J.Y. Lee**, "Freeze-Thaw Degradation of Landfill Covers Liners", 1994.

PHD DISSERTATION CHAIR (CURRENT)

- **Mohammadmahdi Farsiabi**, "Socio-Economic Vulnerabilities, Environmental Quality, and Health Expenditure in Great Lakes Region" (Expected Completion: December 2018) co-advisor with Dr. Allen Goodman, Chair (Economics)
- **John Barkach**, Sediment Transport in Great Lakes Watershed and Accumulation in Critical Harbors and Ports (Expected Completion: December 2018)
- **Jack Press**, Networked Communication of Environmental Hazards (Expected Completion: December 2019)

MS Thesis Chair (Completed)

- **Hong Dai**, "Heavy Metals in Ash Recovered from Detroit Incinerator", 1995.
- **Kathleen Aseltine**, "Chloride Distribution in Michigan Aquifers", 1989, co-Chair.
- **Hosam Hassanien**, "Desiccation Cracking of Clay Liners Under Repetitive Wet-Dry Cycles", 1992.
- **Vismaya Tata**, "Hydraulic Modeling of Detroit River for Evaluation of PPCP Transport", 2005.
- **Timothy Calappi**, "Scour at Bridge Crossings: Michigan-Specific Conditions", 2010
- **Michelle Rogers**, "Timing of Residential Electric Loads to Reduce Air Emissions from Power Generation", 2012.
- **Jennifer Hui**, "Dam Capacity Analysis", 2014.
- **Jamie Steis**, "Improved Drain Design for Reduction in Phosphorus Loadings", January 2015.
- **Farzana Hanaan**, "Evaluation of LEEM for Emission Estimates in MISO, NYISO, PJM", Expected 2018.

COURSES TAUGHT

- Honors 1000: City (1)
- BE 1200: Introduction to Engineering Design
- CEE 3250: Fluid Mechanics
- CEE 4995: Senior Capstone Design (shared among faculty)

- CEE 5410: E³ Design – Energy, Emissions and Economics
- CEE 6130: Engineering Hydraulics (Open Channel Flow)
- CEE 6190: Groundwater Hydraulics
- CEE 6270: Environmental Management and Sustainable Development
- CEE 6580: GeoEnvironmental Engineering and Remediation
- CEE 7190: Advanced Groundwater Hydraulics
- FPH 7420: Environmental and Public Health
- BIO 6190: Urban Sustainability Systems
- Directed study at undergraduate, graduate and doctoral levels

Ms. Lisa Wallick
Detroit Water and Sewerage Department
c/o Stormwater Management Group
6452 Huber Street
Detroit Michigan

August 6, 2018

This is in response to a letter dated July 30, 2018 inquiring whether I would be interested in being considered for the newly formed Dispute Resolution Panel by DWSD. Within the last few weeks, I have retired from the University of Michigan and am considering what activities to become involved with in the next few years, so this invitation is timely. I would be interested in being considered for the panel. In the past I have been involved with different DWSD projects, primarily through consulting teams and more recently with the Great Lakes Water Authority. I have attached a current copy of my C.V. While it does not include a list of consulting types of activities I have been involved with over the years, it does include a description of several projects that I have participated in with various governmental agencies and provides other details of my professional experience. If you would like to see more specific details on these, I would be glad to provide them. I look forward to hearing more about this opportunity.

A handwritten signature in black ink, appearing to read "Steve J. Wright". The signature is fluid and cursive, with a large loop at the end.