

GEORGE H. BERGHORN, Ph.D., LEED AP BD+C, CGP

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EDUCATION

- Ph.D., Construction Management 2014
Michigan State University, East Lansing, Michigan, USA
Dissertation Title: “Life Cycle Cost-Based Risk Model for Energy Performance Contracting Retrofits”
Fields of Specialization: Sustainability in the built environment, mass timber construction, construction project management, energy efficiency, life cycle analysis, risk management
- M.S. Construction Management core course requirements completed 2007-2009
(including undergraduate collateral courses)
Michigan State University, East Lansing, Michigan, USA
- Master of Environmental Studies 1998
Yale University School of Forestry and Environmental Studies, New Haven, Connecticut, USA
Fields of Specialization: Sustainability, resource policy, watershed forestry
- Bachelor of Science (*magna cum laude*), Political Science and Earth Science 1996
SUNY College at Brockport, Brockport, New York, USA

SUMMARY OF PROFESSIONAL EXPERIENCE

- Michigan State University** East Lansing, Michigan, USA
Assistant Professor of Construction Management August 2015-present
Core Faculty, Housing Education and Research Center August 2015-present
Affiliate Faculty, Environmental Science and Policy Program August 2015-present
- Teach lecture, laboratory, and capstone courses to undergraduate and graduate students, including commercial construction materials and methods, residential/commercial capstone courses, construction project scheduling, advanced project scheduling, and built environment sustainability.
 - Advise graduate students.
 - Maintain active research agenda. Interests include building science; energy efficiency; mass timber construction; deconstruction and material re-use; built environment sustainability; construction education; and risk management.
- Berghorn Group** Lansing, Michigan, USA
Principal September 2014-present (operated under different name since 1999)
- Conduct sustainability (energy, water, waste stream) audits and provide strategic sustainability planning and implementation for public and private clients.
 - Provide sustainability; construction management; and research and training services.
- Green Prisons** Lexington, Kentucky, USA
Senior Sustainability Advisor January 2014-present
- Provide technical expertise for energy efficiency/renewables and water conservation projects.
 - Conduct research related to adoption of sustainable practices.

SUMMARY OF PROFESSIONAL EXPERIENCE, *continued*

- Michigan State University** East Lansing, Michigan, USA
Post-Doctoral Research Associate August 2014-July 2015
Doctoral Student January 2007-July 2014
- Conduct research related to sustainability and energy efficiency in the built environment.
 - Current research focuses on sustainability related to building deconstruction and materials reuse, to include life cycle assessment and embodied energy.
 - Previous projects included impacts of LEED on general contractors and health-mediated worker productivity impacts in LEED buildings.
- Kendall College of Art and Design of Ferris State University** Grand Rapids, Michigan, USA
Adjunct Graduate Faculty January 2015-May 2015
- Co-develop Building Systems Integration class for M.Arch. students; lead development of sustainability, building science, and energy systems/design with climate modules.
 - Provide classroom and laboratory instruction as well as studio critiques.
- Lansing Community College** Lansing, Michigan, USA
Dean – Technical Careers Division May 2011-March 2014
Chairperson - Environmental, Design & Building Technologies Dept. June 2009-April 2011
Adjunct Professor – Environmental Science and Biology June 2003-May 2005
- Led academic unit with a ~\$10 million budget, over 125 FTE faculty and staff, 4,000 students, and over 50 academic programs.
 - Increased unduplicated headcount by 64% through strategic realignment at zero net cost.
- Michigan Forest Products Council** Lansing, Michigan, USA
Director of Forest Policy July 2005-June 2009
- Led the federal and state legislative agenda for sustainable forest management, renewable fuels, and green buildings.
 - Managed statewide sustainable forest products certification program.
- Integrated Technical Services, Inc.** Winslow, New Jersey, USA
Construction Project Manager December 2001-January 2003
Construction Site Superintendent September 2001-December 2001
- Managed portfolio of construction and facility O&M contracts worth up to \$15 million.
 - Constructed complex, multi-constituent soil and water treatment systems in four states.
- Environmental Strategies Corporation** Pittsburgh, Pennsylvania, USA
GIS Analyst and Environmental Scientist (Onsite Remedial October 1998-September 2001
Construction Technician and Site Remediation Technician/Manager)
- New York City Department of Environmental Protection** Valhalla, New York, USA
GIS Group/Water Quality Impacts Assessment Group/Natural Summers 1995-1998
Resources Group/Kensico-Hillsdale Reservoir Operations
Seasonal Technician
- CVN Heating and Air Conditioning** Eastchester, New York, USA
Seasonal HVAC Assistant Installer Summer & Winter Seasons 1993 & 1994

PROFESSIONAL CERTIFICATIONS

LEED AP BD+C, Green Building Certification Institute – August 2009-present.

Certified Green Professional, National Association of Homebuilders – October 2014-present.

Certified Online Instructor, Michigan Virtual University – May 2004.

Certified Hazardous Materials Manager, Institute of Hazardous Materials Management – expired.

PUBLICATIONS

Refereed Journals

Berghorn, G.H. and Syal, M.G. (2017). A comparative review of RPN and scenario-based FMEA to evaluate project risks in construction. *Manuscript preparation underway.*

Berghorn, G.H. and Syal, M.G. (2017). Risk model for energy performance contracting in correctional facilities. *Manuscript preparation underway.*

Killingsworth, J., Grosskopf, K.R., and **Berghorn, G.** (2017). Establishing a ratio of fixed personnel costs to revenue for construction managers. *The Professional Constructor* 42(2): 76-89.

Tatiya, A, Zhao, D., Syal, M., **Berghorn, G.H.**, and LaMore, R. (2017). Cost prediction model for building deconstruction in urban areas." *Journal of Cleaner Production*. DOI: 10.1016/j.jclepro.2017.08.084.

Berghorn, G.H. and Syal, M.G. (2016). Risk framework for energy performance contracting retrofits. *Journal of Green Building* 11(2): 93-115.

Singh, A., **Berghorn, G.H.**, Joshi, S., and Syal, M.G. (2011). Review of life-cycle assessment applications in building construction. *Journal of Architectural Engineering* 17: 15-23. *Top three most cited paper in JAE (was most cited paper between 2016 and 2017).*

Berghorn, G.H. and Hunzeker, G.R. (2001). Passive treatment alternatives for remediating abandoned mine drainage. *Remediation Journal*: 11(3): 111-127.

Refereed Conference Papers

Anuranjita, A., **Berghorn, G.H.**, Bates, D., and Syal, M.G.M. (2018). Life cycle assessment framework for demolition and deconstruction of buildings. *Construction Research Congress (ASCE)*. April 2-5, 2018. New Orleans, Louisiana.

Sayer, E., Syal, M.G.M., and **Berghorn, G.H.** (2017). Comparison of buildings in ancient Europe with modern green building practices. *ISEC-9 - The Ninth International Structural Engineering and Construction Conference: Resilient Structures and Sustainable Construction*. July 24-29, 2017. Valencia, Spain.

Berghorn, G.H. and Syal, M.G. (2016). Comprehensive risk assessment framework and model development for energy performance contracting retrofits in correctional facilities. *2016 Construction Research Congress (ASCE)*. May 31-June 2, 2016. San Juan, Puerto Rico.

PUBLICATIONS, *continued*

Zahir, S., Syal, M.G., LaMore, R., and **Berghorn, G.H.** (2016). Approaches and associated costs for removal of abandoned buildings. Construction Research Congress (ASCE). May 31-June 2, 2016. San Juan, Puerto Rico.

Non-Refereed Journals and Conference Papers

LaMore, R.L., Wu, M., and **Berghorn, G.H.** (2015). A green approach to ending structural abandonment in communities. 52nd International Making Cities Livable Conference on Achieving Green, Healthy Cities. June 29-July 3, 2015. Bristol, United Kingdom.

Berghorn, G.H. and Vallad, E.S. (2013). Energy performance projects yield greening and security benefits. *Corrections Today* 75(1): 44-48.

Technical Reports and Occasional Papers

Jordan, A., LaMore, R., Anuranjita, A., Bakshi, S., **Berghorn, G.H.**, and Syal, M.G.M. (2017). Muskegon, Michigan Deconstruction Economic Cluster Feasibility Study. Michigan State University Center for Community and Economic Development: East Lansing, MI.

Berghorn, G.H. (2005). Trends in Michigan's Forest Products Industry; 2000-2004. Michigan Forest Products Council: Lansing, MI.

Berghorn, G.H. and Samorajczyk, J. (1998). An Assessment of the Diadromous Fish Resources of the Lower Quinnipiac River, Connecticut. Connecticut Department of Environmental Protection: Hartford, CT.

DELIVERED PRESENTATIONS*Conferences and Guest Lectures*

Anuranjita, A., **Berghorn, G.H.**, Bates, D., and Syal, M.G.M. (2018). Life cycle assessment framework for demolition and deconstruction of buildings. Construction Research Congress (ASCE). April 2-5, 2018. New Orleans, Louisiana. *Presentation accepted, conference upcoming.*

LaMore, R. and **Berghorn, G.** (2018). Domicology: A comprehensive approach to structural abandonment. Building Michigan Communities Conference. April 30-May 2, 2018. Lansing, Michigan. *Presentation accepted, conference upcoming.*

LaMore, R., **Berghorn, G.**, Blomberg, T., and Mack, M. (2018). Domicology, deconstruction, and design for disassembly. Reclaiming Vacant Properties Conference. May 15-17, 2018. Milwaukee, Wisconsin. *Presentation accepted, conference upcoming.*

Sayer, E., Syal, M.G.M., and **Berghorn, G.H.** (2017). Comparison of buildings in ancient Europe with modern green building practices. ISEC-9 - The Ninth International Structural Engineering and Construction Conference: Resilient Structures and Sustainable Construction. July 24-29, 2017. Valencia, Spain.

Berghorn, G.H. (2017). "Current Status and Future Directions for Wood in Certified Green Buildings," presented at the Michigan Forest Bioeconomy Conference, Grand Rapids, MI, USA, February 1-2, 2017.

DELIVERED PRESENTATIONS, *continued*

Berghorn, G.H. (2017). “Deconstruction of Abandoned Buildings: A Critical Part of the Urban Wood Basket,” presented at the Michigan Forest Bioeconomy Conference, Grand Rapids, MI, USA, February 1-2, 2017.

Berghorn, G.H. and Syal, M.G. (2016). Comprehensive risk assessment framework and model development for energy performance contracting retrofits in correctional facilities. 2016 Construction Research Congress (ASCE). May 31-June 2, 2016. San Juan, Puerto Rico.

Berghorn, G.H. (2016). “Deconstructing Abandoned Properties,” presented at the Building Michigan Communities Conference, Lansing, MI, USA, April 25-27, 2016.

Berghorn, G.H. and Brady, J.B. (2015). “Implementing Sustainable Practices in Jails, Developing a Plan,” presented at the American Correctional Association 145th Congress of Correction, Indianapolis, IN, USA, August 16-19, 2015.

Elmblad, G., **Berghorn, G.H.**, Hildebrand, J., and Madvig, D. (2015). “Performance Contracting – Best Practice,” presented at the American Correctional Association 145th Congress of Correction, Indianapolis, IN, USA, August 16-19, 2015.

Berghorn, G.H. and Morgan, L. (2015). “Framework for Sustainability in Correctional Facilities,” presented at the American Correctional Association 2015 Winter Conference, Long Beach, CA, USA, February 6-11, 2015.

Berghorn, G.H. and Morgan, L. (2015). “Cost Savings through Water Conservation,” presented at the American Correctional Association 2015 Winter Conference, Long Beach, CA, USA, February 6-11, 2015.

Berghorn, G.H. (2015). “Multiple Benefits from Energy Performance Projects: Greening, Security, and More,” presented during the session “Combating Drought, Energy & Utility Costs, While Meeting ACA Guidelines” at the American Correctional Association 2015 Winter Conference, Long Beach, CA, USA, February 6-11, 2015. *Invited Presenter.*

Berghorn, G.H. (2014). “Environmental Impacts of Private Property Abandonment and Sustainable Solutions,” guest lecture presented to UP 433: Introduction to Environmental Planning at Michigan State University, School of Planning, Design, and Construction, East Lansing, MI, USA, September 30, 2014. *Invited Presenter.*

Berghorn, G.H. (2014). “Overview of Private Property Abandonment” and “Methods for Private Property Abandonment Research,” guest lecture presented to UGS 200H: Private Property Abandonment (Undergraduate Research Seminar) at Michigan State University, Honors College, East Lansing, MI, USA, Fall Semester 2014. *Invited Presenter.*

Berghorn, G.H. (2014). “Correctional Facility EPC Retrofit Project Risks,” presented during the session “Updating your Infrastructure without Negatively Affecting Your Budget” at the Construction and Maintenance Institute for Criminal Justice Agencies 2014 Conference, Indianapolis, IN, USA, October 13-October 16, 2014. *Invited Presenter.*

DELIVERED PRESENTATIONS, *continued*

Elmblad, G., **Berghorn, G.H.**, Hildebrand, J., and Madvig, D. (2014). "Going Green, Updating Needed Infrastructure, While Not Negatively Affecting Your Budget," presented at the American Correctional Association 2014 Winter Conference, Tampa, FL, USA, January 31-February 5, 2014. *Invited Presenter.*

Dunham, M.S. and **Berghorn, G.H.** (2013). "Building Smart: Developing High Performance Energy Education," presented at the League for Innovation in the Community College STEMtech Conference, Atlanta, GA, USA, October 27-30, 2013.

Berghorn, G.H. and Reed, L. (2013). "Building Smart – New Pathways to Careers in High Performance Building," presented at Innovations in Technical Education to Advance Sustainability: Student Leadership, 2nd Annual Sustainability Conference at Alfred State University, Alfred, NY, USA, June 6-8, 2013.

Madry, L., **Berghorn, G.H.**, Holsten, R., Elzanati, J., Antle, J., and Cohen, T. (2013). "Supporting Community Colleges in Expanding Sustainability Skills and Addressing Barriers to Successful Innovations in Sustainability Education," panelist at Sustainability Skills Matter: A National Policy Discussion to Advance a Competitive Workforce for the Clean Economy, Washington, DC, USA, April 10-11, 2013. *Invited Presenter.*

Berghorn, G.H. (2012). "The Energy Performance Contracting Process for Retrofits at Correctional Facilities," presented at the 2nd National Symposium on Sustainability in Corrections, Indianapolis, IN, USA, October 29-November 1, 2012. *Invited Presenter.*

Carter, V.C., **Berghorn, G.H.**, Lesiecki, M., Murray, B., Smith, S., and Yanow, K. (2012). "National Science Foundation Workshop," panelist at the League for Innovation in the Community College STEMtech Conference, Kansas City, MO, USA, October 28-31, 2012. *Invited Presenter.*

Nelson, J. and **Berghorn, G.H.** (2012). Anchoring Your Efforts: Partnering with Local Universities to Revitalize Communities, panelist at the 7th Annual Land Bank Conference, Kalamazoo, MI, USA, October 14-16, 2012.

Berghorn, G.H. and Huberty, S. (2011). "Campuses as Learning Laboratories: A Framework to Achieve Institutional Sustainability Goals Through Service Learning," presented at the American Association for Sustainability in Higher Education Annual Conference, Pittsburgh, PA, USA, October 11, 2011.

Filipiak, M., **Berghorn, G.H.**, and Huberty, S. (2011). "Bridging the Gap: Students and Professionals Design NetZero Energy Communities," presented at the League for Innovation in the Community College STEMtech Conference, Indianapolis, IN, USA, October 2-5, 2011.

Berghorn, G.H. (2011). "Green Building and LEED® Certification," presented at the Community Economic Development Association of Michigan, Comprehensive Community Development Institute, Lansing, MI, USA, February 16, 2011. *Invited Presenter.*

DELIVERED PRESENTATIONS, *continued*

Dingens, J.E., **Berghorn, G.H.**, and Huberty, S. (2010). “Enhancing Sustainability Education Through Multidisciplinary Competition-Based Learning,” summit presented at STEMtech 2010, Orlando, FL, USA, October 31-November 2, 2010. *Invited Presenter.*

Dingens, J.E., **Berghorn, G.H.**, and Huberty, S. (2010). “Enhancing Sustainability Education Through Multidisciplinary Competition-Based Learning,” concurrent session presented at STEMtech 2010, Orlando, FL, USA, October 31-November 2, 2010.

Berghorn, G.H., Deits, T., and Beard, R. (2010). “Eco-Scholars Bridge Academics and Campus Sustainability,” presented at STEMtech 2010, Orlando, FL, USA, October 31-November 2, 2010.

Berghorn, G.H. and Welch, R. (2010). “The Impact of LEED® on the Green Industry,” presented at the Great Lakes Trade Expo, Grand Rapids, MI, USA, January 4-6, 2010. *Invited Presenter.*

Cuttino, P., **Berghorn, G.H.**, Clark, L., Nathman, J.B., and Warner, J. (2009). “Pew Project On National Security, Energy, and Climate Town Hall Discussion,” presented at Lansing Community College, Lansing, MI, USA, September 15, 2009. Presenter with former Senator John Warner and Admiral (Retired) John Nathman, USN. *Invited Presenter.*

Berghorn, G.H. (2008). “Local Availability of Certified Wood Products and Raw Materials,” presented at Green: 2008 & Beyond - Forest Products Society Great Lakes Section Spring Seminar, Lansing, MI, USA, May 13, 2008. *Invited Presenter.*

Berghorn, G.H. (2008). “Green Building and Industry Change,” presented at the Michigan Association of Timbermen Annual Convention, Boyne Falls, MI, USA, April 2008. *Invited Presenter.*

Berghorn, G.H. (2004/2005). “Remediation of the Summitville Mine Complex, Colorado,” guest lecture presented to FW 443: Restoration Ecology, Michigan State University, Department of Fisheries and Wildlife, East Lansing, MI, USA, March 2004 and March 2005. *Invited Presenter.*

Berghorn, G.H. (2000). “Site Remedial Construction and GIS,” guest lecture presented to ENAS 610b: GIS and Water Resources at Yale University, School of Engineering and Applied Science, New Haven, CT, USA, April 2000. *Invited Presenter.*

Berghorn, G.H., Gorokhovich, Y., and Marsh, G. (1995). “Accuracy Assessment of Digital Data,” presented at the 5th Annual New York State GIS Conference, Syracuse, NY, USA, October 1995.

GRANTS

*Funded, +Selected, and *Under Consideration*

**US Forest Service Wood Innovations program. \$389,833, 2018-2021. Construction Cost and Time Estimating Tool Development and Industry Outreach for Cross Laminated Timber Buildings - Principal Investigator. With Pascal Nzokou. Submitted, under consideration.*

**Sustainable Forestry Initiative. \$46,819, 2018-2019. Supporting the Forest Carbon and Climate Program: Specialized Course Content & Participant Sponsorship - Co-Principal Investigator with Lauren Cooper. Submitted, under consideration.*

**National Science Foundation. \$335,015, 2018-2021. Collaborative Research: Domicology Education in CONSTRUCTION (DECONSTRUCT) – Principal Investigator. With Dong Zhao, Matt Syal, and Rex LaMore. Lead institution for three school, two state (MI and MS) \$900,000 collaborative proposal. Submitted, under consideration.*

National Housing Endowment – Housing Education and Leadership Program. \$100,000, 2018-2023. Improving Residential Focus of the Construction Management Program at Michigan State University - Co-Principal Investigator. With Sinem Mollaoglu and Matt Syal.

Michigan Department of Environmental Quality. \$182,722, 2016-2018. Michigan Aquatic Invasive Species Pathways via Construction Disturbance – Principal Investigator. With Jon Burley. Prime Grantor is US Fish and Wildlife Service.

Renewable Resource Solutions. \$57,500, 2016-2019. Michigan Wood Innovation Action Team – Principal Investigator. Prime Grantor is US Forest Service.

US Department of Commerce Economic Development Administration Technical Assistance Program. \$111,706, 2015-2016. A Proposal to Determine the Feasibility of Creating and Sustaining a Deconstruction Economic Cluster in Muskegon County Michigan – Co-Writer. With Rex LaMore and Matt Syal.

+U.S. Department of Energy: Energy Efficiency and Renewable Energy. \$50,000, 2014-2015. U.S. Solar Decathlon – Principal Investigator. With Brian Craig (Kendall College of Art & Design). Selected, not funded.

National Science Foundation: Advanced Technological Education. \$727,348, 2011-2014. Integrated Career and Educational Pathways in Building Science – Principal Investigator. With Michele Filipiak, Ralph Hansen (Eaton Intermediate School District), John Holmstrom (The Christman Company), Sean Huberty, Lisa Reed, and Kathy Shell.

Capital Area Michigan Works! (pass through for U.S. Department of Energy Funds awarded to the Michigan Department of Labor and Economic Growth). \$965,870, 2011-2013. Smart Grid Training for the Utility Sector – Principal Investigator. With Lisa Reed and Glenys Warner.

National Science Foundation: Advanced Technological Education. \$218,294, 2010-2013. Capital Region Area Information Technology Apprenticeship – Co-Principal Investigator. With Eduardo Suniga and Lisa Reed.

GRANTS, *continued*

Lowe's Foundation/Skills USA. \$11,000, 2011. Restoration Works Renovations – Contributor. With Mary Ellen Brocklehurst and Gregory Dunham.

Michigan Department of Natural Resources. \$4,200, 2006-2007. Outreach to Michigan's Private Forest Landowners - Lead Writer and Project Manager.

Michigan Department of Natural Resources. \$3,700, 2005-2006. Outreach and Education for Michigan's Private Forest Landowners - Lead Writer and Project Manager.

Pennsylvania Department of Conservation and Natural Resources. \$21,000, 2001-2002. Montour Run Floodplain and Stream Bank Restoration – Contributor. With Janet Thorne.

Pennsylvania Department of Environmental Protection. \$40,035, 2001-2003. Montour Run Watershed Assessment and Cleanup Plan – Contributor. With Stanley Sattinger.

Pennsylvania Department of Environmental Protection. \$62,800, 2001-2002. Montour Run Stream Bank Stabilization Project – Contributor. With Alex Ropelewski and Stanley Sattinger.

Pennsylvania Department of Environmental Protection. \$10,000, 2000-2001. Environmental Outreach and Education – Contributor. With Janet Thorne.

TEACHING AND CURRICULUM DEVELOPMENT EXPERIENCE

Michigan State University – Credit Instruction East Lansing, Michigan, USA

- CMP 210-Commercial Construction Methods 2015, 2016
- CMP 311-Construction Project Scheduling 2016
- CMP 491/891-Building and Energy Systems 2018
- CMP 491/891-Green and Energy Efficient Residential Construction 2016-2018
- CMP 491/891-Commercial and Residential Construction Capstone 2017
- CMP 492-Capstone Project Competitions 2015-2017
- CMP 811-Advanced Project Scheduling 2016, 2017
- UGS 200H-Private Property Abandonment (Co- Instructor) 2014
- UP 400-Advancing the Science of Domicology 2018

Average SIRS scores range between 1.85 and 1.39 (1=superior, 5=inferior). Sample student feedback:

“Prof Berghorn was an outstanding professor who made learning interesting and hands on. He did an excellent job teaching the course and I have nothing bad to say about him as a professor or as a person.”

“Amazing course and better professor.”

“Dr. Berghorn goes above and beyond with his students and is very intelligent in the manner in which his information is taught.”

“Amazing professor and mentor...The best mentor ever.”

TEACHING AND CURRICULUM DEVELOPMENT EXPERIENCE, *continued*

Michigan State University – Non-Credit Instruction East Lansing, Michigan, USA

- Construction Scheduling (Visiting International Professionals Program Instructor) 2016
- Construction Estimating (Visiting International Professionals Program Instructor) 2008, 2009
- Construction Scheduling (Visiting International Professionals Program Instructor) 2008, 2009
- Green Building Systems (Graduate assistant for students from Lady Irwin College – Delhi, India) 2008, 2009

Kendall College of Art and Design – Credit Instruction Grand Rapids, Michigan, USA

- KGAR 541-Building Systems Integration (Co-Developer and Instructor) 2015

Faculty rating: 4.77/5.0

Sample student feedback:

“This professor is outstanding! One of the best professors I have had so far. ... There is never a dull moment in class...”

“Professor Berghorn was a great teacher who every effectively and eloquently covered a large terrain of building systems information... in a way that was easy to comprehend, digest, remember, and apply... Your portion of the classes always were so well put together. I appreciated it.”

Lansing Community College Lansing, Michigan, USA

- Construction Management Curriculum (Co-Developer) 2011
- Energy Management Curriculum (Co-Developer) 2010-2011
- AEET/ARCH 275-Planning for Sustainable Construction (Co-Developer and Co-Instructor) 2010
- BIOL 120-Environmental Science (Instructor) 2003- 2005
- BIOL 128-Organismal Biology (Instructor) 2004-2005

Environmental Strategies Corporation Pittsburgh, Pennsylvania, USA

- Geographic Information Systems (Developer and Instructor) 2000, 2001

New York City Department of Environmental Protection Valhalla, New York, USA

- Spatial Analyst for ArcView GIS (Developer and Instructor) 1998
- Introduction to ArcView GIS (instructor) 1998

Yale University New Haven, Connecticut, USA

- E&EB 275a – Biological Oceanography (Teaching Fellow) 1997

SERVICE AND PROFESSIONAL MEMBERSHIPS

Professional Associations

- American Correctional Association
 - Member, Delegate Assembly – Institutions of Higher Education Representative 2017-present
 - Member, Sustainability in Corrections Committee, American Correctional Association 2014-present
- Member, Michigan Forest Biomaterials Institute Steering Committee 2015-present
- Member, The Counterterrorism Institute Board of Advisors 2015-present
- Member, Michigan State University Construction Management Program Alumni and Industry Advisory Board 2014-present
- Visiting Team Member, American Council for Construction Education 2011-present
- U.S. Green Building Council 2007-2014
 - Steering Committee, Heart of Michigan Branch 2011-2013
- Associate Member, Michigan Occupational Deans Administrative Council 2011-2014
- Michigan Construction Career Council 2010-2011
 - Advisory Committee Member, MI Construction Career Days 2011

Academic and Scientific Journals

- Reviewer, Journal of Architectural Engineering (ASCE) 2012-present
- Reviewer, Journal of Construction Engineering and Management (ASCE) 2012-present
- Reviewer, Environmental Progress and Sustainable Energy 2010-present

Michigan State University

- Member, 4 PhD Committees (3 US, 1 Spain) 2016-present
- Chair, 3 MS Committees (3 US) 2016-present
- Member, 3 MS Committees (2 US, 1 Germany) 2016-present
- Supervisor, 3 Undergraduate Research Assistants (MSU) 2016-present
- Coach, National Residential Construction Management Competition Team 2015-present
- Coach, ASC Region 3 Commercial Construction Management Competition Team 2015-present
- Riguardi Fellowship Selection Committee 2017
- Research Mentor, Summer Research Opportunity Program (SROP) 2016, 2017
- MSU Football Mentoring Program 2017
- Faculty Co-Advisor, Sparty's Cabin (tiny house construction project) 2015-2017

Community Affiliations

- Member, Potter Park Zoological Society Board of Directors 2016-present
- Allen Neighborhood Center – Lansing, MI
 - Member, Housing Caucus 2010-2016
 - Founding Partner, Restoration Works in Lansing 2010-2014
- Member, Potter Park Zoo Advisory Board – Ingham County, MI 2012-2016
- Member, Office of U.S. Senator Debbie Stabenow Service Academy Nomination Selection Committee – Lansing, MI 2012

SERVICE AND PROFESSIONAL MEMBERSHIPS, *continued**Community Affiliations, continued*

- President and Board Member, Hollow Oak Land Trust – Pittsburgh, PA 1998-2001
- Vice President, Montour Run Watershed Association – Pittsburgh, PA 1999-2001

Professional Appointments

- National Science Foundation Reviewer - S-STEM and ATE Programs 2009, 2011-2012
- Member, MI DNR Woody Biomass Harvesting Guidance Workgroup 2008-2009
- Member, MI DEQ Solid Waste Advisory Council 2008-2009
- Member, MI DNR Forest Stewardship Advisory Council 2008-2009
- Member, MI DNR Forest Management Advisory Committee 2007-2009

Lansing Community College

- Member, College Executive Leadership Team 2011-2014
- Team Leader, Strategic Plan Implementation Steering Committee 2011-2014
- Core Staff, Sustainable Energy Education Center 2010-2014
- Member, Eco Scholars Day Leadership Team 2010-2014
- Member, Student and Academic Affairs Leadership Team 2009-2014
- Co-Chair, 2013 International High Performance Building Education and Technology Conference 2013
- Member, Associate Vice President of Academic Affairs Search Committee 2013
- Member, Associate Dean Health and Human Services Search Committee 2013
- Team Leader, AQIP Portfolio Development Team 2012-2013
- Member, Information Technology Advisory Committee 2011-2013
- Member, eLearning Advisory Committee 2011-2013
- Member, Sustainability Committee 2009-2013
- Member, Director of Career and Employment Services Search Committee 2011
- Member, Director of Human Resources Search Committee 2010
- Chair, Technical Careers Division Director of Instruction Search Committee 2010
- Member, Public Service Careers Program Director Search Committee 2010
- Co-Advisor, LCC BuildUP! Michigan student competition team 2010
- Member, Center for Teaching Excellence 2004-2005

Selected Media Appearances

- WMUZ-FM (103.5)
Guest appearance on “The Inside-Outside Guys” to discuss the construction labor shortage in Michigan and ways that MSU is helping to solve this challenge. 2016, 2017
- WKAR (Michigan State University Public Radio)
“*The Case for More Recycling of Home Construction Materials*” 2016
Guest appearance on Current State to discuss building deconstruction and technical/policy challenges in Michigan for the recycling of more construction and demolition debris.
<http://wkar.org/post/case-more-recycling-home-construction-materials#stream/0>
- WJSU-FM (Jackson State University Public Radio)
Guest appearance on “The Full Spectrum” to discuss property abandonment in Michigan and Mississippi, and strategies to combat wide-scale abandonment. 2016

SERVICE AND PROFESSIONAL MEMBERSHIPS, *continued*

Selected Media Appearances, continued

- WLMI-FM (92.9)
Guest appearance on the “Michigan Business Rap” discussing the shortage of skilled trades workers and partnership opportunities for business and community colleges. 2014
- WKAR (Michigan State University Public Radio) 2011
“*Restoration Works: Saving Houses on Lansing's East Side*”
Dissemination about project that connects building science students at LCC with a local neighborhood services provider through renovation of condemned housing stock.
- Connections (Lansing Community College Television) 2010, 2011
Two guest appearances to discuss the BuildUP! Michigan competition, Eco Scholars Day, and the Great Lakes Center for Utility Training.
- WDBM-FM (Impact 89 FM - Michigan State University Student Radio) 2010
Guest appearance on “City Pulse Radio” to discuss the Restoration Works partnership with Eric Schertzing and Joan Nelson – show first aired November 3, 2010.
- WLNZ (Lansing Community College Radio) 2010
Several guest appearances in 2010 to discuss BuildUP! Michigan and Restoration Works.

SELECTED RESEARCH AND CONSULTING PROJECTS

Domicology: Use of Salvaged Lumber in the Development of Cross Laminated Timber 2017-present

Michigan State University East Lansing, Michigan, USA

- Collaborate with MSU forestry researchers to design, build, and test cross laminated timber panels made with a significant fraction of salvaged wood, reclaimed from building demolition and deconstruction activities.
- Testing includes compressive and shear strength and delamination. Sample groups are evaluated statistically using a factorial experimental design. Tests are conducted within and across factors.

Barriers to the Implementation of Cross Laminated Timber Construction in the United States 2016-present

Michigan State University East Lansing, Michigan, USA

- Identify bottom-up (practice-based) and top-down (code- and legislative-based) barriers to wider adoption of cross laminated timber in the US construction industry. Work includes surveys/interviews with both AEC industry professionals and faculty members from AEC-related academic programs.
- Identifying detailed construction cost and schedule variances when implementing cross laminated timber construction.
- Supporting two undergraduate research assistants and one graduate research assistant.

SELECTED RESEARCH AND CONSULTING PROJECTS, *continued***Construction Best Management Practices to Prevent Aquatic Invasive Species Introduction and Spread** **2016-present**Michigan State University East Lansing, Michigan, USA

- Collaborative effort with MSU landscape architecture faculty to identify construction activity-related pathways that lead to the introduction and/or spread of aquatic invasive species.
- Preliminary focus is on development of risk assessment methodologies once pathways have been identified and connected with specific construction activities.
- Work supports one doctoral research assistant and one undergraduate research assistant.

Domicology: Private Property Abandonment and Building Deconstruction **2014-present**Michigan State University East Lansing, Michigan, USA

- Collaborate with Research faculty from civil engineering, human resources and labor relations, writing and rhetoric, urban planning, and construction management working on policy, bonding/insurance, construction schedule/cost/technology aspects of sustainable building deconstruction, and design for deconstruction.
- Preliminary project focus was to develop a regional feasibility study for the use of deconstructed buildings and salvaged building materials as a sustainable source of construction materials, as a feedstock to engineered lumber, and as the basis for a manufactured housing industry.
- Work supported one graduate research assistant.

Research Agenda for Sustainability in Corrections**2012-present**

GreenPrisons.org

Lexington, Kentucky, USA

- Co-lead effort to develop research agenda in seven areas; 1) Integrating Technology and People, 2) Lighting, 3) HVAC Systems, 4) Plug-In Appliances/Pumps/Motors, 5) Materials Flow, 6) Water, and 7): Energy. This work builds upon previous efforts to define sustainability in corrections in the “Greening Corrections Technology Guidebook.”
- Work is being conducted across three academic institutions (University of Indianapolis, North Carolina Central University, and Sam Houston State University), two corrections associations (American Correctional Association and Green Prisons), and includes corrections, construction, and sustainability professionals.

LEED for Commercial Interiors Certification Project**2011-2012**

Client: Allen Neighborhood Center

Lansing, Michigan, USA

- Primary LEED certification consultant for a 5,200 square foot warehouse conversion project from functionally obsolete space to combined office-mercantile space.
- Renovated warehouse supports an indoor farmer’s market, non-profit office space, an incubator commercial kitchen and bakery, and temperature-stable produce storage.

SELECTED RESEARCH AND CONSULTING PROJECTS, *continued***Life Cycle Cost Analysis of Occupant Well-Being and Productivity in LEED® Offices** **2008-2009**

Michigan State University East Lansing, Michigan, USA

- Served as research team member and completed literature reviews and analyses of life cycle cost and life cycle analysis applications in the context of sustainable built environment.
- Assisted with development and administration of a survey instrument used to self-report levels of respiratory health and productivity in workers moving from traditional to LEED®-certified office buildings.
- Coordinated air sampling for biological and chemical constituents of interest.

Integrated Design with Environment **1997-1998**

Client: South Central Connecticut Regional Water Authority New Haven, Connecticut, USA

- Collaborative design process between Yale School of Art and Architecture and Yale School of Forestry and Environmental Studies.
- Created conceptual re-design of headquarters building facade to reflect role of Water Authority in the management of watershed lands, to include an interpretive public trail.
- Incorporated features of watershed lands into architectural design.

AWARDS AND HONORS

- CANR New Faculty Excellence in Teaching Award (*Nominated, Pending Review*) 2018
- ORISE Science and Technology Policy Fellowship (*Selected, Declined Offer*) 2014
- MSU College of Agriculture and Natural Resources Dean's Fellowship 2014
- MSU Construction Management Program Graduate Office Fellowship 2014
- MSU Construction Management Program Graduate Scholarship 2008
- MSU Future Academic Scholars in Teaching (FAST) Fellow 2007-2008
- Phi Kappa Phi National Honor Society 2007
- MSU University Distinguished Fellowship 2003-2007
- Yale University Edna Bailey Sussman Graduate Scholarship 1997
- Pi Sigma Alpha National Honor Society 1995
- Alpha Chi National Honor Society 1995