

ERIC M. WETZEL, Ph.D., LEED-AP BD+C
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EDUCATION

Ph.D., Environmental Design and Planning, Virginia Tech

Cunningham Doctoral Scholar

Advisor and Dissertation Committee Chair: Dr. Walid Y. Thabet

Dissertation: The Use of a BIM-Based Framework to Support Safe Facility Management Processes

M.B.C., Masters of Building Construction, Auburn University

Atlanta Building Science Alumni Committee Graduate Scholarship

Advisor: Dr. C. Ben Farrow

B.S., Construction Management, Western Kentucky University

RESEARCH INTERESTS

Building Information Modeling (BIM)

Construction Education

Construction Technology

Project Controls

Asset and Facilities Management Safety

SELECTED HONORS AND AWARDS

2019 The Benning Fund for Excellence in Teaching

McWhorter School of Building Science at Auburn University

2018 Outstanding Faculty Award (selected by Student Government Association)

College of Architecture, Design, and Construction at Auburn University

2016 Outstanding Teaching Award

McWhorter School of Building Science at Auburn University

2016 Outstanding Doctoral Student Award

College of Architecture and Urban Studies at Virginia Tech

2014 Global Perspectives Program Scholarship Award

The Graduate School at Virginia Tech

2013-2016 Cunningham Doctoral Scholar Award

The Graduate School at Virginia Tech & Department of Building Construction

2012 Bentley Be Inspired Awards: First place

Innovation in Water and Wastewater, Amsterdam, Netherlands

ACCREDITATION AND CERTIFICATIONS

LEED® Accredited Professional, Building Design + Construction (LEED-AP BD+C)

Institutional Review Board (IRB) & CITI Training in Human Subjects Protection

Virginia Tech Future Professoriate Graduate Certificate

RELEVANT TEACHING EXPERIENCE

Auburn University – Auburn, AL

Assistant Professor of Building Science **January 2016 - Present**

Tenure-track Assistant Professor in the McWhorter School of Building Science at Auburn University. Responsible for the education of students and the betterment of the AEC industry through teaching, research, and service. Specialties include building information modeling (BIM), project controls, building lifecycle, and facilities management. Member of multiple committees at the University, College, and School level.

Virginia Tech – Blacksburg, VA

Graduate Teaching Assistant **January 2014 – December 2015**

Provided support to Dr. Walid Thabet for BC 4434 – Construction Practice I and Professor Thomas Mills for BC 1100 – Introduction to Building Construction, by aiding in the development and delivery of lectures on a number of topics, including Building Information Modeling (BIM), Applications for Facility Lifecycle, Wastewater Treatment, and Virtual Coordination. Additional responsibilities included, coordinating class field trips, holding office hours, and grading student submissions.

Western Kentucky University – Bowling Green, KY

Adjunct Instructor – Instructor of Record **January 2013 – May 2013**

Online Adjunct Instructor for CM 400 - Construction Administration to seniors of the Western Kentucky University Construction Management Program. Responsible for all aspects of instructing at the university level including, developing and delivering lectures, assignments, and examinations.

Auburn University – Auburn, AL

Graduate Teaching Assistant **August 2008 – June 2009**

Taught a section of Soils and Earthmoving to seniors of the Auburn University Building Science Program (BSCI 4750). Provided assistance to Dr. Scott Kramer with grading, tutoring, and development and teaching of laboratory assignments.

RELEVANT RESEARCH EXPERIENCE

Auburn University – Auburn, AL

Faculty Research Appointment

January 2016 – Present

Conducting research and publishing commensurate with the requirements of a tenure-track faculty at a Carnegie R1 Doctoral University.

Virginia Tech – Blacksburg, VA

Ph.D. Dissertation

August 2013 – October 2016

Maintenance personnel in the field of facility management (FM) are at constant risk of electrical shock, falls, crushing, cuts and bruises, and as a result, have a much higher rate of injury and illness than the national average. Case study analysis confirms that many recorded accidents could have been avoided had the victim followed appropriate hazard mitigation steps to safely execute a FM task. Currently, safety information is conveyed through training seminars, documents, and meetings. This information, although comprehensive, often remains fragmented among multiple resources. Research has shown that the more time and effort an individual must spend obtaining information, the less likely they are to retrieve the information and obey the stated warnings, directly relating to injuries and fatalities. The research attempts to mitigate these issues by developing a BIM-based framework to support safe maintenance and repair practices during the facility management phase, through safety attribute identification/classification, a data retrieval and processing decision engine, and a graphical user interface.

Graduate Assistant

August 2013 – Present

Conduct research associated with Building Information Modeling (BIM), facility management, and safety with Dr. Walid Thabet. Responsible for the development and management of the Virtual Facilities Research Lab (VFRL) located in Bishop-Favrao Hall. The VFRL allows researchers to explore the many facets of facility lifecycle operations. The lab maintains many industry standard and emerging software applications, including Building Information Modeling (BIM), energy and load analysis tools, facility management applications, and data transference modules.

Global Perspectives Program

May 2014 – July 2014

The Global Perspectives Program enables graduate students to examine differences in academic practices and to develop innovative and effective approaches that foster international awareness and education. This program provides firsthand knowledge about global higher education through visits to selected European universities, discussions with faculty, administrators, and students, and dialogue among the group members. Through the Global Perspectives experience, participants enhance their knowledge and understanding of global higher education, gain a cultural understanding of higher education diverse contexts, engage with new colleagues across academic disciplines, and grow personally and professionally through shared experiences.

Project Manager – Special Projects

August 2013 – December 2013

Managed two joint research efforts between Virginia Tech and industry professionals. The two projects entitled, “Building Information Modeling (BIM) Industry Case Study” and “BIM-Facility Management Integration,” focused on informing industry professionals on the current state of Building Information Modeling (BIM) and the applications available within the software.

RELEVANT SERVICE EXPERIENCE

American Council for Construction Education: Standards July 2019 – Present

A current member of the Standards Committee for the American Council for Construction Education (ACCE). The ACCE is the accreditation entity for building science and construction management programs across the United States.

Western Kentucky University AMS Dept. Board Member October 2016 – Present

A current member of the Advisory Board for the Department of Architectural and Manufacturing Sciences in the Ogden College of Science and Engineering at Western Kentucky University.

Faculty Committee Member January 2016 - Present

A member of a number of committees at the University, College, and School level. Committees include the Graduation Committee (Macebearer), CADC Website Development Committee, BSCI Ph.D. Committee, EASL Classroom Development Committee, and the BSCI IT Committee.

Building Construction Graduate Advisory Panel August 2014 – January 2016

The BC Graduate Advisory Panel aids faculty in the development of the Building Construction graduate program at Virginia Tech. The panel is comprised of six graduate students (M.S. and Ph.D.) in order to provide ideas, discussion, and feedback to current and future graduate programs.

Doctoral Representative for CSA August 2014 - May 2015

The doctoral student's representative in the Graduate Student Assembly's Commission on Student Affairs (CSA). This elected position is charged to study, formulate, and recommend to University Council policies and procedures affecting graduate and undergraduate student life and morale. Areas for consideration include: student relations with peers, staff, faculty, administrators, alumni, and the community; student organizations, social life, and recreation; employment, placement, and counseling; residential life, health, safety, and quality of student related services; and other matters affecting student life.

SELECTED REFEREED JOURNALS AND CONFERENCE PROCEEDINGS

Refereed Journals

Wetzel, E.M., and Thabet, W.Y. (2018). "A Case Study Towards Transferring Relevant Safety Information for Facilities Maintenance Using BIM." *Journal of Information Technology in Construction (ITCON)*, 23, 53-74, <https://www.itcon.org/2018/3>.

Wetzel, E.M., and Thabet, W.Y. (2016). "Utilizing Six Sigma to Develop Standard Attributes for a Safety for Facilities Management (SFFM) Framework." *Safety Science*, 89, 355-368.

Wetzel, E. M., and Thabet, W.Y. (2015). "The Use of a BIM-Based Framework to Support Safe Facility Management Processes." *Automation in Construction*, 60, 12-24.

Conference Proceedings

Wetzel, E.M., Leathem, T.M. (2019). "Delivering Multi-Disciplinary Experiences in Education: A Study of Construction Program Practices to Meet Accreditation Requirements." *American Society of Engineering Education 126th Annual Conference & Exposition*, Tampa Bay, FL.

McCall, C, Wetzel, E.M., Leathem, T.M., Collins, W. (2019). "Pedagogy for 21st Century Construction Education: Active and Collaborative Learning in Correlation with ACCE Student Learning Outcomes." *Proc., 55th Annual Associated Schools of Construction International Conference*, Denver, CO.

Wetzel, E. M. (2018). "A Market Survey of BIMFM Readiness Among Designers and Builders in the Southeast United States." *Proc., 54th Annual Associated Schools of Construction International Conference*, Minneapolis, MN.

Leathem, T. M., Wetzel, E. M., Good, M., Boyd, K., and Burt, R. (2018). "Analysis of the AIC Associate Constructor Practice Exam for Cognitive Domain and ACCE Student Learning Outcomes (SLO) Inclusion " *Proc., 54th Annual Associated Schools of Construction International Conference*, Minneapolis, MN.

Wetzel, E.M., Lucas, J., Thabet, W.Y. (2017). "The Utilization of an Asset Safety Identification Tool (ASIT) to Support Safety During Facilities Management." *International Workshop on Computing for Civil Engineering*, Seattle, WA.

Wetzel, E.M. and Holley, P. (2017). "Evaluation of Self-Modifications to Hand Tools in the Construction Industry." *53rd International Associated Schools of Construction Conference*, Seattle, WA.

Wetzel, E.M, Thabet, W.Y., Cleveland, B. (2014). "Information Handover Using BIM to Support Safe Facility Management Processes: Current Challenges." *Proceedings of the 2nd BIM International Conference*, Lisbon, Portugal, 109-111.

Wetzel, E. M., and Luna, J. (2014). "Utilizing 4D Visualization for Complex Schedule Analysis." *Associated Schools of Construction Conference*, Washington, D.C.

SELECTED PROFESSIONAL PRESENTATIONS AND POSTER SESSIONS

Professional Presentations

Kim, J., Farrow C.B, Burt, R., Leathem T., Wetzel, E.M. (2019). "Bringing the Construction Site to the Classroom." *Innovations in Built Environment Education Workshop (iBEE)*, Salford, UK.

Wetzel, E. M. (2012). "South Secondary Improvements Project." *Bentley Be Inspired Awards*, Bentley Industries, Amsterdam, Netherlands. First Place – Innovation in Water and Wastewater Treatment Plants.

Wetzel, E. M. and Luna, J. (2012). "Utilizing 4D Modeling for Construction Scheduling." *2012 CMAA National Conference and Trade Show*, Construction Management Association of America, Chicago, IL.

Wetzel, E. M. and Luna, J. (2012). "The Utilization of 4D Modeling on MWRD's South Secondary Improvements Project." *RMWSA/RMWEA Joint Regional Conference 2012*, Rocky Mountain Water Environment Association, Copper Mountain, CO.

Poster Sessions

Chambers, B.D., Wetzel, E.M., and Pearce, A. R. (2019). "Towards a BIM Framework for Integrated Pest Control Management and Research." *Engineering Sustainability*, Pittsburgh, PA.

Wetzel, E.M. and Burt, R. (2018). "Evaluating the Knowledge and Cognitive Domain of Individual Test Questions Against Anderson et. al Revision to Bloom's Taxonomy." *Conversations in Celebration of Teaching*, Auburn, AL.

Wetzel, E.M. and Burt, R. (2017). "Evaluating the Knowledge and Cognitive Domain of Individual Test Questions Against Anderson et. al Revision to Bloom's Taxonomy." *53rd International Associated Schools of Construction Conference*, Seattle, WA.

Manion, W.P., Munz, S., Wetzel, E.M., Shayo, A., Tyhurst, M. and Burge, P. (2016). Poster: "Communicating Science: A Qualitative Study." *2016 Conference on Higher Education Pedagogy*, Blacksburg, VA.

Wetzel, E.M. (2013). "An Integrated Product Model and Ontology for Safety Protocol during the Facility Management Phase." *Department of Building Construction Research Presentations*, Blacksburg, VA.

Wetzel, E. M., and Farrow, C. B. (2009). "The Study of Market Demand for a New Post Tension Cable Chair." *Associated Schools of Construction Conference – Poster Session* Gainesville, FL.

SELECTED NON-REFEREED PUBLICATIONS AND SPEAKING ENGAGEMENTS

Non-Refereed Publications

Wetzel, E. M. (2015). "The Build Up: A Comparative Review of Campus Development in the United States and Switzerland." *Global Perspectives Program Manual*, 74-77

Speaking Engagements

Wetzel, E.M. (2018). "BIM for Infrastructure" *Invited Lecturer to Inter-America Development Bank*. Washington D.C.

Wetzel, E.M. (2018). "Construction Technology and Research" *Invited Lecturer to Western Kentucky University School of Engineering and Applied Sciences*, Bowling Green, KY.

Wetzel, E. M., et al. (2014). "Future of Higher Education: Preparing for Change – Professors as Public Intellectuals." *Panelist to Members of the Swiss Embassy* Washington, D.C.

INDUSTRY EMPLOYMENT HISTORY

Carollo Engineers, Inc. - Denver, CO

Consulting Employee - Construction Services Group August 2013 - Present

Provide schedule analysis, delay claim assessment, forensic scheduling, and contract compliance reviews for clients in Arizona, California, Colorado, Florida, New Mexico, Texas, and Washington. Analyzed nearly \$1 billion in design and construction project schedules and claims. Create design and construction schedules for program management, business development purposes, and proposals. Specialize in cost and resource loaded schedules through all project phases including, pre-design, design, construction, startup, and close out

Project Controls - Construction Services Group October 2010 – August 2013

Owner's Representative for a \$135 million wastewater treatment plant expansion project at the Metro Wastewater Reclamation District (MWRD). Responsible for change management, schedule analysis, contract compliance, monthly financial reporting, pay application review and claims analysis. Managed a team to implement a 4D model of the plant expansion for schedule analysis and risk mitigation. Utilizing the model, the team is able to validate a number of items including concrete pour sequence compliance, missing links, inappropriate logic, visual assessment of actual versus planned work progression, identification of non-conformance with work restrictions, and future work review.

Field Engineer – Construction Services Group August 2009 – October 2010

Owner's Representative on a \$6.6 million wastewater treatment demolition and site preparation project at the Metro Wastewater Reclamation District (MWRD). Specific responsibilities included management of daily operations, submittals, RFIs, change management, and financial reports. Provided schedule sequencing and constructability consulting during preconstruction of a \$135 million plant expansion. Served as the lead engineer on the implementation of a new project management software (EADOC) for Carollo's Denver office and MWRD.