

FORM D - IV A INSTRUCTION

The faculty member is encouraged to use a range of evidence demonstrating instructional accomplishment, which can be included in portfolios or compendia of relevant materials.

1. Undergraduate and Graduate Credit Instruction:

Record of instructional activities for at least the past six semesters. Include only actual participation in credit courses (on- or off-campus instruction) or virtual university on-line courses. In determining the “past six semesters,” the faculty member may elect to exclude any semesters during which s/he was on leave; additional semesters may be included on an additional page. Fill in or, as appropriate, attach relevant print screens from CLIFMS*.

Semester and Year	Course Number	Credits (Number or Var)	Number of Sections Taught Lec Rec Lab	Number of Students	Number of Assistants **	Notes
Fall 2015	CMP 328	2	Lec 1 + Lab 2	49	0	90% redeveloped by [REDACTED]
	PDC 491	2	Lec 1 + Lab 1	15	0	90% redeveloped by [REDACTED]
Fall 2016	CMP 328	2	Lec 1 + Lab 3	57	0	
	CMP 891	3	Lec 1 + Lab 1	17	0	
	CMP 898	3	Lab 1	1	0	
	CMP 899	3	Lab 1	1	0	
	PDC 999	3	Lab 1	1	0	
Spring 2017	CMP 890	3	Lab 1	2	0	
	CMP 899	3	Lab 1	1	0	
	PDC 490	3	Lab 1	1	0	
	PDC 999	6	Lab 1	1	0	
Fall 2017	CMP 328*	2	Lec 1 + Lab 3	54	0	
	CMP 828*	3	Lec 1 + Lab 1	6	0	Newly developed by [REDACTED]
	PDC 999	9	Lab 1	1	0	

* On a FMLA leave approved by the university with reduced course teaching.

2. Non-Credit Instruction:

List other instructional activities including non-credit courses/certificate programs, licensure programs, conferences, seminars, workshops, etc. Include non-credit instruction that involves international, comparative, or global content delivered either to domestic or international groups, either here or abroad.

Seminar on construction management to BOSCH North American headquarter management with Dr. [REDACTED] 2017.

*Consult departmental staff who are authorized to enter data on the web-based CLIFMS (Course Load, Instruction, Funding and Modeling System) system and can search for course sections and enrollments by faculty name, per semester.

**May include graduate and undergraduate assistants, graders, and other support personnel.

FORM D – IV A INSTRUCTION, continued**3. Academic Advising:**

a. Faculty member's activity in the area of academic advising. The statement may include commentary on supplementary materials such as recruitment activities, international student advising, evidence of peer recognition, and evidence of student recognition.

Undergraduate: SPDC has professional advisors to manage undergraduates. I have been involved in advising two undergraduates through research in building information modeling and virtual reality modeling. The undergraduates worked with my research team on a project. Specifically, one helped create 3D building models and the other helped data collection and literature collection.

Graduate: In the past two years after joining MSU, I have graduated two Master's students as chair and four other Master's students as a committee member. My advising activities including guiding research, career path, internship, publication, and life. The advisee [REDACTED] received DAAD RISE scholarship funded by the German Federal Foreign Office in 2016 to support his study and work in Germany. Currently, I am advising one doctoral student as co-chair and four other doctoral students as committee member. My activities focus on advising research methodology in construction technology and building energy and professional development. The advisee [REDACTED] received the Environmental Science and Policy Program (ESPP) fellowship in 2017 to support her research. She has co-authored one journal paper and two conference papers with me with three more under review.

Graduate/Professional: N/A.

Other: N/A

b. Candidate's undergraduate advisees (if applicable to individual under review):

	Freshman	Sophomore	Junior	Senior
Number of current undergraduate advisees	0	0	0	0

c. Candidate's graduate/graduate-professional advisees (limit to principal advisor or committee chairpersonship status):

	Masters	Doctoral	Professional
Number of students currently enrolled or active	0	1	0
Number of graduate committees during the reporting period	2	1	
Degrees awarded during the reporting period	2	0	0
Degrees awarded during career	2	0	0

4. List of Instructional Works:

List publications, presentations, papers, grants received (refer to Form D-IVE), and other works that are primarily in support of or emanating from instructional activity.

Publications:

- [REDACTED] (2015). Building Collaborative Construction Skills through BIM-integrated Learning Environment. *International Journal of Construction Education and Research*. 11(2), 97-120.
- [REDACTED] (2017). Assessing the Graduate Education in Research Methodology on Sustainability Topics. *Proc. 2018 Construction Research Congress*, New Orleans, LA.
- [REDACTED] (2016). The Michael Horman Symposium: Developing a Network of Researchers and Mentorship for Sustainability Topics. *Proc. 2016 Construction Research Congress*, San Juan, PR.
- [REDACTED] (2013). Building Information Modeling-enhanced Team-based Learning in Construction Education. *Proc., 12th International Conf. on Information Technology Based Higher Education and Training*, Antalya, Turkey
- [REDACTED] (2014). BIM-integrated Group Learning in Construction Education. *Proc., 6th Conference on Higher Education Pedagogy (CHEP)*, Blacksburg, VA.

Workshop/Conference:

- The Michael Horman Symposium on Sustainability, as faculty advisor, 2016
- High School Engineering Institute at MSU, as faculty advisor, 2017

Grant:

- Michigan State University (MSU): Enhanced Teaching and Learning Environment for Building Information Modeling (BIM) Technology and Practice, 2017-2018, Principal Investigator, \$3,509.
- National Science Foundation (NSF): Collaborative: An Instrument and Adoption Framework for Student Cognitive and Social Engagement with a Course, Co-Principal Investigator, 2016-18, \$809,341.

5. Other Evidence of Instructional Activity:

Cite other evidence of instructional productivity such as works/grants in progress or under review (refer to Form D-IVE). Address instructional goals and approaches; innovative methods or curricular development; significant effects of instruction; and curatorial and patient care activities, etc. Include evidence of instructional awards and peer recognition (within and outside the university).

I have developed a new course CMP828 “Advanced virtual design and construction (VDC)” and have redeveloped CMP328 “Construction presentation graphics & BIM”. BIM-based VDC is a game-changing technology for the civil and construction industry, and VDC provides an ideal educational platform to analyze energy efficiency. For the course development, I have integrated two my previously developed modules: the multidisciplinary team-based learning (TBL) module and the BIM-based collective learning module. I have also developed 90 page tutorials for the course and the work has been favored by publisher Taylor–Francis to publish as a textbook. My educational research found that a BIM-based group learning environment enables students to develop collaborative skills that are vital for their career. Using multivariate regression, I have identified a significant difference in learning outcomes owing to peer effects and proposed a peer learning and review (PLR) setting. As a result, I have developed an augmented-reality (AR) APP for my BIM class. Using pre-and-post analysis, improved learning outcomes and learning enthusiasm is identified.

I submitted my NSF CAREER proposal, in which I propose a triple-loop learning-based course development model. The model has two key features: (1) educational outcomes feed into my research (e.g., by helping debug the behavior detection model); and (2) it is transformative to other team projects or courses. I will work with MSU CREATE for STEM Institute to develop and disseminate the module while advancing my scholarship of teaching and learning.

In another NSF grant, I propose a novel global competence assessment tool which can be used to guide and evaluate study abroad program.

FORM D - IV B RESEARCH AND CREATIVE ACTIVITIES

1. List of Research/Creative Works:

Attach a separate list of publications, presentations, papers, and other works that are primarily in support of or emanating from Research and Creative Activities. Indicate how the primary or lead author of a multi-authored work can be identified. The list should provide dates and, in particular, accurately indicate activity from the reporting period. Items to be identified:

- 1) Books
- 2) Book chapters
- 3) Bulletins or monographs
- 4) Articles
- 5) Reviews
- 6) Papers and presentations for learned professional organizations and societies
- 7) Artistic and creative endeavors (exhibits, showings, scores, performances, recordings, etc.)
- 8) Reports or studies

Indicate peer-reviewed or refereed items with a “*”.

Indicate items with a significant outreach component with a “**” (determined by the faculty member)

2. Quantity of Research/Creative Works Produced:

For each of the categories listed in question one above, list the number of research and creative works produced.

	1	2	3	4	5	6	7	8
During the reporting period	1	0	0	18	0	10	0	3
During career	1	2	0	27	0	25	0	8

3. Number of Grants Received (primarily in support of research and creative activities; refer to Form D-IVE):

During the reporting period: 10 During career: 12

4. Other Evidence of Research/Creative Activity:

Cite other evidence of research and creative productivity such as: seminars, colloquia, invited papers; works/grants in progress or under review (refer to Form D-IVE); patents; formation of research-related partnerships with organizations, industries, or communities; curatorial and patient care activities, etc. Include evidence of peer recognition (within and outside the university).

I was honored with the Best Paper Award by the American Society of Civil Engineers (ASCE) for my article about housing resilience and sustainability published in the Journal of Architectural Engineering. This award is given to authors of an outstanding paper that was published in the Journal during the previous year. The ASCE is known to produce some of the top research journals in the world. The ASCE accepts nominations for 85 Society Awards with the objective of giving recognition to engineers who excel in their profession through achievement and or published papers. Only one Best Paper Award is given out per year, which makes this achievement even more remarkable. To be eligible to receive this award, my work was first nominated by peers, and then selected by the Editorial Team.

My research has been reported by multiple media including Science Daily and Fox News.

FORM D - IV B RESEARCH AND CREATIVE ACTIVITIES

1) Books

- During reporting period

- [REDACTED] (2016). *Case-specific Studies on Housing Innovation*. Momentum Press, New York, NY. ISBN-13: 978-1-60650-566-3.

2) Book chapters

- Before reporting period

- [REDACTED] (2014). "Mobile Virtual Reality: An Approach for Safety Management," [REDACTED] (Ed.), *The Thousand Faces of Virtual Reality*. InTech Press. ISBN 978-953-51-1733-9.
- [REDACTED] (2008). "Constructing Security Systems for Public Housing in Rural and Urban Areas," In *Blue Book of Chongqing Municipality*. Chongqing: Chongqing Press Group. ISBN 978-7-5366-9419-4, pp91-99

3) Bulletins or monographs

None.

4) Articles

(* = peer-reviewed)

- During reporting period

- * [REDACTED] (2017). "Cost Prediction Model for Building Deconstruction in Urban Areas." *Journal of Cleaner Production*. Accepted. Impact Factor: 5.8; ranking 14/425 in Industrial Engineering
- * [REDACTED] (2017). "Zero latency: Real-time synchronization of BIM data in virtual reality for collaborative decision-making." *Automation in Construction*, 85, 51-64. Impact Factor: 2.9; ranking 12/245 in Building & Construction
- * [REDACTED] (2017) "CoVR: A Cloud-based Multiuser Virtual Reality Headset System for Project Communication of Remote Users." *Journal of Construction Engineering and Management*, In press. Impact Factor: 1.7; ranking 20/245 in Building & Construction
- * [REDACTED], [REDACTED]. (2017). "Monitoring workers' attention and vigilance in construction activities through a wireless and wearable electroencephalography system." *Automation of Construction*, 82, 122-137. Impact Factor: 2.9; ranking 12/245 in Building & Construction
- * [REDACTED] (2017). "Demonstrating a New Measure & Index of U.S. Homebuilder Confidence." *Journal of Housing Research*. In press.
- * [REDACTED] (2017). "Risk Compensation Behaviors on Construction Sites: Demographic and psychological determinants." *Journal of Management in Engineering*, 33(4), 04017008. Impact Factor: 2.0; ranking 3/53 in Industrial Relations
- * [REDACTED]. (2017). "Interaction Effects of Building Technology and Resident Behavior on Energy Consumption in Residential Buildings." *Energy and Buildings*, 134, 223-233. Impact Factor: 4.1; ranking 3/245 in Building & Construction
- * [REDACTED] (2017). "Business Model Innovation and Its Drivers in the Chinese Construction Industry during the Shift of Modular Prefabrication." *Journal of Management in Engineering*, 33(3), 04016051. Impact Factor: 2.0; ranking 3/53 in Industrial Relations
- * [REDACTED] (2016). "Integrating Safety Culture into OSH Risk Mitigation: A Pilot Study on the Electrical Safety." *Journal of Civil Engineering and Management*, 22(6), 800-807. Impact Factor: 1.5; ranking 48/376 in Civil and Structural Engineering
- * [REDACTED] (2016). "Cost Performance as a Stochastic Process: EAC Projection by [REDACTED] Chain Simulation." *Journal of Construction Engineering and Management*, 142(6), 04016009. Impact Factor: 1.7; ranking 20/245 in Building & Construction
- * [REDACTED] (2016). "Optimization of Change Order Management Process with Object-Oriented Discrete Event Simulation: Case Study." *Journal of Construction Engineering and Management*, 142(4): 05015018. Impact Factor: 1.7; ranking 20/245 in Building Construction
- * [REDACTED] (2016). "An Empirical Study on the Energy Consumption in Residential Homes after Adopting Green Building Standards." *Procedia Engineering*, 145, 766-773.

FORM D - IV B RESEARCH AND CREATIVE ACTIVITIES

- * [REDACTED] (2016). "A Multiuser Shared Virtual Environment for Facility Management." *Procedia Engineering*, 145, 120-127.
- * [REDACTED] (2016). "Decision-making Chains in Electrical Safety for Construction Workers." *Journal of Construction Engineering and Management*. 142 (1), 04015055. Impact Factor: 1.7; ranking 20/245 in Building & Construction
- * [REDACTED] (2016). "Sociotechnical Systems of Fatal Electrical Injuries in the Construction Industry." *Journal of Construction Engineering and Management*, 142 (1), 04015056. Impact Factor: 1.7; ranking 20/245 in Building & Construction
- * [REDACTED]. (2016). "Stakeholder Perceptions of Risk in Construction." *Safety Science*, 82, 111-119. Impact Factor: 2.2; ranking 5/63 in Safety Research
- * [REDACTED] (2015). "Resilient Built Environment: New Framework for Assessing Residential Construction Market." *Journal of Architectural Engineering*, 27(4), B4015004. **(2016 Best Journal Paper Award)**
- * [REDACTED]. (2015). "Control Measures of Electrical Hazards: An Analysis of Construction Industry." *Safety Science*, 77, 143-151. Impact Factor: 2.2; ranking 5/63 in Safety Research
- Before reporting period
 - * [REDACTED]. (2015). "Virtual Reality Simulation for Construction Safety Promotion." *International Journal of Injury Control and Safety Promotion*. 22(1), 57-67. Impact Factor: 0.9; ranking 25/63 in Safety Research
 - * [REDACTED] (2015). "Building Collaborative Construction Skills through BIM-integrated Learning Environment." *International Journal of Construction Education and Research*, 11(2), 97-120.
 - * [REDACTED] (2014). "Electrical Deaths in the U.S. Construction: An Analysis of Fatality Investigations." *International Journal of Injury Control and Safety Promotion*, 21(3), 278-288. Impact Factor: 0.9; ranking 25/63 in Safety Research
 - * [REDACTED] (2006). "Innovation of Construction Projects Management Based on the Five-dimension Modeling." *Journal of Chongqing University*, 29(9), 152-155.
 - * [REDACTED]. (2006). "An Empirical Study and Forecast of the Cyclic Fluctuation of Real Estate Investment in China." *Journal of Civil, Architectural and Environmental Engineering*, 28(4), 110-113.
 - * [REDACTED]. (2005). "A Study on the Investment of Real Estate Development under the Macro-regulation in China." *Journal of Civil, Architectural and Environmental Engineering*, 27(s), 128-130.
 - * [REDACTED] (2005). "A Study of the Effect of Construction Project Design Quality on the Overall Cost Management and Control." *Journal of Civil, Architectural and Environmental Engineering*, 27(s), 109-111.
 - * [REDACTED] (2005). "Thinking on China Western Area Real Estate Industry's Development." *Special Zone Economy*. 2005(2): 112-113.
 - * [REDACTED] (2004). "The Analysis of the Relationship between Cyclic Fluctuation of Real Estate Industry and Macro-economy." *Chuanshan Journal*, 262-263.
- 5) Reviews
None.
- 6) Papers and presentations for learned professional organizations and societies
(* = peer-reviewed)
 - During reporting period.
 - * [REDACTED]. (2018). "Assessing the Graduate Education in Research Methodology on Sustainability Topics." *Proc. the 2018 Construction Research Congress (CRC)*, New Orleans, LA.
 - * [REDACTED] (2018). "Data-driven Approach to Scenario Determination for VR-based Construction Safety Training." *Proc. the 2018 Construction Research Congress (CRC)*, New Orleans, LA.
 - * [REDACTED] (2018). "The Longitudinal Impact of Energy Education on Affordable Energy Efficient Multifamily Senior Housing." *Proc. the 4th Residential Building Design and Construction Conference (RBDCC)*, State College, PA.

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- * [REDACTED] (2017). "Construction Work Plan Prediction for Facility Management Using Text Mining." *Computing in Civil Engineering 2017*,
- * [REDACTED] (2017). "Latent Relationship between Construction Cost Takeoffs and Energy Efficiency for Multifamily Green Buildings." *Computing in Civil Engineering 2017*. New
- * [REDACTED] (2017). "Simultaneous Data Exchange between BIM and VR for Collaborative Decision-making." *Proc., the 2017 International Workshop of Computing in Civil Engineering (IWCCE)*, Seattle, WA.
- * [REDACTED] (2016). "Impacts of Housing Technology and Behavior on Energy Efficiency for Affordable Rental Housing." *Proc. the 41th IAHS World Congress – Sustainability and Innovation for the Future*, Algarve, Portugal.
- * [REDACTED] (2016). "Do Designers and Builders Share Similar Understanding of Occupational Safety and Health Risks?" *Proc., the 2016 Construction Research Congress (CRC)*, San Juan, Puerto Rico, pp. 2821-2830.
- * [REDACTED] (2016). "Lessons Learned from the Michael Horman Symposium: Developing a Network of Researchers and Mentorship for Sustainability topics." *Proc., the 2016 Construction Research Congress (CRC)*, San Juan, Puerto Rico.
- * [REDACTED] (2016). "Homebuilder's Confidence: a New Index of Land, Labor, Capital, and Opportunities." *Proc., the 2016 American Real Estate Society Annual Conference (ARES)*, Denver, CO.
- Before reporting period
 - * [REDACTED] (2014). "Integrating Safety Culture into OSH Risk Mitigation via Information Technologies." *Lecture Notes in Electrical Engineering*, 241 LNEE, 335-344.
 - * [REDACTED] (2014). "Adoption Patterns of Energy Efficient Housing Technologies 2000-2010: Builders as Innovators." *Proc., the 2nd Residential Building Design and Construction Conference (RBDCC)*, Bethlehem, PA.
 - * [REDACTED] (2014). "BIM-integrated Group Learning in Construction Education." *Proc., the 6th Conference on Higher Education Pedagogy (CHEP)*, Blacksburg, VA.
 - * [REDACTED] (2013). "Risk Compensation and Safety Interventions in Construction Site." *Proc., the 38th Australasian Universities Building Education Association Conference (AUBEA)*, Auckland, New Zealand.
 - * [REDACTED] (2013). "Merging Habitus into Safety Risk Management: A Case from the U.S. Construction Industry." *Proc., the 7th IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, Bangkok, Thailand, 507 - 511. [REDACTED] (2013). "Building Information Modeling-enhanced Team-based Learning in Construction Education." *Proc., the 12th International Conference on Information Technology Based Higher Education and Training (ITHET)*, Antalya, Turkey, 1-5.
 - * [REDACTED] (2012). "Managing Electrocution Hazards in the US Construction Industry Using VR Simulation and Cloud Technology." *Proc., the 2012 European Conference of Product and Process Modeling (ECPM)*, Reykjavik, Iceland, 759-764.
 - * [REDACTED] (2012). "Using Virtual Environments Simulation to Improve Construction Safety: An Application of 3D Online-game based Training." *Lecture Notes in Electrical Engineering*, 172 LNEE, 269-277.
 - * [REDACTED] (2009). "Using Virtual Environments to Support Electrical Safety Awareness in Construction." *Proc., the 2009 Winter Simulation Conference (WSC)*, Austin, TX, 2679-2690.
 - * [REDACTED] (2006). "The Instauration of China Construction Labor Market Using International Experiences." *Proc. Reform and Innovation of China Construction Labor Policy*, Beijing, China, Construction Industry Press, 10-14.
 - "Be a Spartan: Perspectives of Research in Built Environment." Presented at Michigan State University, School of Planning, Design and Construction, East Lansing, MI, 2015.
 - "The Game Changer: BIM's Worldwide Implementation." Presented at Chongqing University, Faculty of Built Environment, Chongqing, China, 2015, with [REDACTED]
 - "Toward the Future of Housing: Leveraging Technology and Efficiency." Co-presented with [REDACTED] at Chongqing University, Faculty of Built Environment, Chongqing, China, 2015.
 - "Uncertainty Management and Risk Mitigation in Building Design and Construction." Presented at the Southwest Jiao Tong University, School of Economics & Management, Chengdu, China, 2015.

FORM D - IV B RESEARCH AND CREATIVE ACTIVITIES

- “Market Behavior Effects on Innovative Green Building Technologies for US Residential Firms.” Co-presented with [REDACTED] at the Southwest Jiao Tong University, School of Economics & Management, Chengdu, China, 2015.
- “Control Measures of Electrical Hazards for Construction Workers.” Presented at Virginia Tech, CIB Chapter, Blacksburg, VA, 2015.

7) Artistic and creative endeavors (exhibits, showings, scores, performances, recordings, etc.)
None.

8) Reports or studies

- During reporting period
 - [REDACTED] (2017). Sustaining Energy Efficiency: Longitudinal Evidence of Virginia’s Low-Income Housing Tax Credit Properties. A Highlight Report for Housing Virginia.
 - [REDACTED] (2017). Preventing Fatalities in the Construction Industry. Report to the Associated General Contractors of America (AGC).
 - [REDACTED] (2015). *Report: the Impact of Energy Efficient Design and Construction on LIHTC Housing in Virginia*. Virginia Center for Housing Research, Virginia Tech, Blacksburg, VA.
- Before reporting period
 - [REDACTED] (2014). “Research on Safety in Construction Supply Chain.” *The 2014 College of Architecture and Urban Studies Research Symposium*, Virginia Tech, Blacksburg, VA.
 - [REDACTED] (2014). “A ‘Whole Industry’ Approach to Construction Safety through International Collaboration and Benchmarking.” *The 2014 Deans’ Forum on Global Engagement*, Virginia Tech, Blacksburg, VA.
 - [REDACTED] (2014). “From Finger-Pointing to Lifesaving: A Supply Chain Approach to Construction OSH.” IC-SAFE, Virginia Tech, VA.
 - [REDACTED] (2014). *Consolidated Plan for the Fairfax County, Virginia*. Virginia Center for Housing Research, Virginia Tech, VA.
 - [REDACTED] (2007). *Design and Development of Public Housing in Chongqing Municipality: An Investigation Report*. School of Construction Management and Real Estate, Chongqing University, China.

FORM D - IV C SERVICE WITHIN THE ACADEMIC AND BROADER COMMUNITY

1. Service within the Academic Community

a. Service to Scholarly and Professional Organizations:

List significant committee/administrative responsibilities in support of scholarly and professional organizations (at the local, state, national, and international levels) including: elected and appointed offices held; committee memberships and memberships on review or accreditation teams; reports written and submitted; grants received in support of the organization (refer to Form D-IVE); editorial positions, review boards and ad hoc review requests; and programs and conferences planned and coordinated, coordinated or served on a panel or chaired a session. Include evidence of contributions (e.g., evaluations by affected groups or peers).

- Committee member

- Proposal Reviewer, Environmental Protection Department, Hong Kong, 2017-
- Review Panel member, National Science Foundation (NSF), 2016-
- Academic committee member, Construction Industry Institute (CII), 2015-
- Scientific committee member, ASCE CRC, 2018
- Scientific committee member, CIB W78, CONVR, IGLC, 2017
- Scientific committee member, ASCE IWCCE, 2017
- Scientific committee member, ASCE ICSDEC, 2016
- Scientific committee member, IEEE IEEM, 2015
- Organizing committee member, CIB W78, 2010

- Journal reviewer

- Accident Analysis and Prevention – Elsevier
- Automation in Construction – Elsevier
- Canadian Journal of Civil Engineering – NRC
- Construction Management and Economics – Taylor & Francis
- Energy and Buildings – Elsevier
- Engineering, Construction and Architectural Management – Emerald
- International Journal of Construction Education and Research – Taylor & Francis
- International Journal of Construction Management – Taylor & Francis
- International Journal of Injury Control and Safety Promotion – Taylor & Francis
- Journal of Architectural Engineering – ASCE
- Journal of Civil Engineering and Management – Taylor & Francis
- Journal of Cleaner Production – Elsevier
- Journal of Construction Engineering and Management – ASCE
- Journal of Management in Engineering – ASCE
- Journal of Habitat International – Elsevier
- Journal of Professional Issues in Engineering Education and Practice – ASCE
- Safety Science – Elsevier
- Sustainability – MDPI
- Renewable & Sustainable Energy Reviews – Elsevier

- Conference reviewer

- CIB W78, CONVR, IGLC, 2017
- ASCE Construction Research Congress (CRC), 2016, 2018
- ASCE International Workshop on Computing in Civil Engineering (IWCCE), 2017
- ASCE International Conf. on Sustainable Design, Engr. and Constr. (ICSDEC), 2016
- ASCE International Structural Engineering and Construction Conf. (ISEC), 2017
- ASEE Annual Conference, 2016
- ASC Annual Conference, 2015

FORM D - IV C SERVICE WITHIN THE ACADEMIC AND BROADER COMMUNITY

- IEEE IEEM Annual Conference, 2015
- West Africa Built Environment Research Conference, 2013

b. Service within the University:

List significant committee/administrative responsibilities and contributions within the University. Include service that advances the University's equal opportunity/affirmative action commitment. Committee service includes: appointed and elected university, college, and department ad hoc or standing committees, grievance panels, councils, task forces, boards, or graduate committees. Administrative responsibilities include: the direction/coordination of programs or offices; admissions; participation in special studies or projects; collection development, care and use; grants received in support of the institution (refer to Form D-IVE), etc. Describe roles in any major reports issued, policy changes recommended and implemented, and administrative units restructured. Include evidence of contributions (e.g., evaluations by peers and affected groups).

- Great Lakes Builders Show Exhibit and Job Fair, Novi MI, 2017
- Academic Advisor Search Committee, SPDC, 2016
- ACCE Accreditation Annual Meeting, ACCE, 2016
- Great Lakes Builders Show Career Fair, Novi MI, 2016
- Student Contractor Awareness Night (SCAN), AGC of Michigan, 2015

FORM D - IV C SERVICE WITHIN THE ACADEMIC AND BROADER COMMUNITY, continued

2. Service within the Broader Community:

As a representative of the University, list significant contributions to local, national, or international communities that have not been listed elsewhere. This can include (but is not restricted to) outreach, MSU Extension, Professional and Clinical Programs, International Studies and Programs, and Urban Affairs Programs. Appropriate contributions or activities may include technical assistance, consulting arrangements, and information sharing; targeted publications and presentations; assistance with building of external capacity or assessment; cultural and civic programs; and efforts to build international competence (e.g., acquisition of language skills). Describe affected groups and evidence of contributions (e.g., evaluations by affected groups; development of innovative approaches, strategies, technologies, systems of delivery; patient care; awards). List evidence, such as grants (refer to Form D-IVE), of activity that is primarily in support of or emanating from service within the broader community.

N/A.

FORM D - IV D ADDITIONAL REPORTING

1. Evidence of Other Scholarship:

Cite evidence of “other” scholarship as specified on p. 2 in the “summary rating” table (i.e., functions outside of instruction, research and creative activity, and service within the academic and broader community). Address the scholarship, significance, impact, and attention to context of these accomplishments.

All related accomplishments are covered in this form.

2. Integration across Multiple Mission Functions:

Discuss ways that your work demonstrates the integration of scholarship across the mission functions of the university—instruction, research and creative activities, and service within the academic and broader community.

As stated in my CAREER proposal, my research aims advance knowledge of human-building interactions and integrate the research activities and outcomes into my teaching using triple-loop learning process. Expected outcomes will be widely disseminated to a diverse audience at state, national, and international levels. The successful integration will accomplish the following: (1) engage a diverse group of students and teachers from Tribal Colleges, URM groups, and K–12 schools; (2) develop curriculum modules that incorporate research results into the triple-loop learning process to train undergraduate and graduate students in STEM fields; (3) deliver a smartphone APP for students, industry professionals, and the public to easily understand human-centered building retrofits developed by the research; and (4) promote local economic development through training skilled green engineering workforce

3. Other Awards/Evidence:

Cite other distinctive awards, accomplishments of sabbatical or other leaves, professional development activities, and any other evidence not covered in the preceding pages. (If the reporting period differs from the usual review period, then justify and support that period here.)

Professional development activities:

- *Workshop: Early Career Awards*, hosted by MSU OVPGRS, 04/27/2017.
- *2017 Academy for Global Engagement*, hosted by MSU, 04/13/2017.
- *Michael Horman Sustainability Symposium*, hosted by University of Pittsburgh and NSF, 04/09/2017
- *Grants Panel with NSF and NIH Program Directors*, hosted by MSU Diversity Research Network, 03/27/2017.
- *Career Success: Strategies for Working with Graduate Students and Postdocs at MSU*, hosted by MSU Graduate School and the Academic Advancement Network, 01/27/2017.
- *Anatomy of a Compelling NSF Grant Workshops*, by Dr. [REDACTED], hosted by MSU OVPGRS, 10/6, 10/27, 11/10, 12/1, 2016.
- *Iceman's Run: NIH Grant Writing Workshop Series*, by Dr. [REDACTED], hosted by MSU OVPGRS, 09/22, 10/6, 10/10-14, 10/20, 10/27, 11/3, 11/14-18, 11/17, 11/21, 12/1, 2016.
- *Syllabus Design and Regulations to Protect Student Information Workshop* [REDACTED], hosted by MSU's AAN, August 26, 2016
- *ACCE Annual Meeting and Workshop*, hosted by ACCE, Atlanta, GA, July 20-22, 2016.
- *CAREER Proposal Writing Webinar*, hosted by NSF, Washington DC, May 26, 2016.
- *CBET CAREER Proposal Writing Webinar*, hosted by NSF, Washington DC, April 27, 2016.
- *NIH Funding for Non-Medical Research Workshop*, by Dr. S [REDACTED], hosted by MSU's VPRGS, East Lansing, MI, March 17, 2016.
- *Survive and Thrive in the MSU Tenure System Workshop*, by Drs. T [REDACTED], East Lansing, MI, February 24, 2016
- *Lessons Learned in Winning NIH Grants – NIH Panel Discussion*, by Dr. [REDACTED] hosted by MSU's VPRGS, East Lansing, MI, February 11, 2016
- *The Art of Funding: Transforming Your NSF Research Proposal Into Funded Science– NSF Panel Discussion*, by Ms. [REDACTED], hosted by MSU's VPRGS, East Lansing, MI, February 11, 2016
- *NSF Broad Impacts for Investigators Workshop*, hosted by MSU's Outreach and Engagement, East Lansing, MI, February 4, 2016.

FORM D - IV D ADDITIONAL REPORTING

- *CRISP Proposal Writing Webinar*, by [REDACTED], NSF officer, Washington DC, January 29, 2016
- *Write Winning Grant Proposals Workshop*, by Dr. [REDACTED], hosted by MSU's Office of the Vice-President for Research and Graduate Studies, East Lansing, MI, January 7, 2016.
- *Budget-Building for Grant Proposals Workshop*, by [REDACTED], hosted by MSU's Office of the Vice-President for Research and Graduate Studies, East Lansing, MI, November 19, 2015.
- *Interdisciplinary Team Building Initiative Presentations*, MSU's Environmental Science and Policy Program, East Lansing, MI, November 19, 2015.
- *Internal and Foundation Grants*, by [REDACTED] hosted by MSU's Office of the Vice-President for Research and Graduate Studies, East Lansing, MI, October 8, 2015
- *NIH Grant Writing Training and Support*, by Dr. [REDACTED] hosted by MSU's Office of the Vice-President for Research and Graduate Studies, East Lansing, MI, October 6, 2015.
- *Building Bridges with Industry: Diversification of the Research Portfolio*, by Dr. [REDACTED], hosted Virginia Tech's Office of the Vice President for Research, May 08, 2015.
- *Finding Funding Workshop*, by [REDACTED], hosted by Virginia Tech's Office of the Vice President for Research, May 04, 2015.
- *Successful Grant Writing Workshop*, by [REDACTED], hosted by Virginia Tech's Office of the Vice President for Research, April 17, 2015

- *Data Visualization Workshop: Presenting Data Effectively*, by Dr. [REDACTED], hosted by Virginia Tech's Office of Assessment & Evaluation, March 20, 2015.
- *Entering Mentoring Workshop*, by Dr. [REDACTED], hosted by Virginia Tech's Division of Undergraduate Education, March 6, 2015
- *Building the NIH Grant Workshop*, by Dr. [REDACTED], hosted by Virginia Tech's Office of VP for Research, February 25, 2015
- *Building the NSF Grant Workshop*, by [REDACTED], hosted by Virginia Tech's Office of VP for Research, April 20, 2014.

FORM D - IV E GRANT PROPOSALS

List grant proposals submitted during reporting period relating to teaching, research and creative activities, or service within the academic and broader community. Include grants in support of outreach, international, urban, and extension activities.*

	Name of Granting Agency (Grantor:) Focus of Grant (Focus:)	Date Submitted	\$ Amount Requested	Status		\$ Amount Assigned to Faculty Candidate (if Applicable)	Principal/Co-Investigators (if not faculty candidate)
				Pending	\$ Amt Funded		
I. Instruction							
	Grantor: MSU APP: N/A Internal	6/2017	\$3,509	<input type="checkbox"/>	\$3,509	<input type="checkbox"/>	
	Focus: Enhanced Teaching and Learning Environment for Building Information Modeling (BIM) Technology and Practice						
	Grantor:			<input type="checkbox"/>		<input type="checkbox"/>	
	Focus:						
II. Research/Creative Activity							
	Grantor: National Science Foundation PD: 26852	9/2017	\$262,055	<input checked="" type="checkbox"/>		<input type="checkbox"/>	██████████ (co-PI)
	Focus: Collaborative Research: Impacts of Study Abroad on Formation of Globally Competent Engineers						
	Grantor: BOSCH North America APP: N/A Fee-for-Service	8/2017	\$4,300	<input type="checkbox"/>	\$4,300	<input type="checkbox"/>	
	Focus: Construction Management Seminar to BOSCH VP and Headquarter Management						
	Grantor: National Science Foundation PD: 25682	7/2017	\$500,000	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
	Focus: CAREER: Human-Centered and Intelligent Building Energy Efficiency						
	Grantor: Federal Highway Administration APP: 150181, RC107116	6/2017	\$250,000	<input type="checkbox"/>	\$95,756	<input type="checkbox"/>	\$23,939 ██████████ (PI)
	Focus: Work Zone Safety Training (year 1 of 3)						
	Grantor: Env'l Research & Education Fdn. APP: N/A Pre-proposal	6/2017	98,000	<input type="checkbox"/>		<input checked="" type="checkbox"/>	

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FORM D - IV E GRANT PROPOSALS

Name of Granting Agency (Grantor:) Focus of Grant (Focus:)	Date Submitted	\$ Amount Requested	Pending	Status		\$ Amount Assigned to Faculty Candidate (if Applicable)	Principal/Co-Investigators (if not faculty candidate)
				\$ Amt Funded	Not Funded		
Focus: Deconstruction Practice on the Solid Waste Industry							
Grantor: Michigan Dept. of Transportation IP: 311318, RC107896	4/2017	\$200,705	<input type="checkbox"/>	\$200,705	<input type="checkbox"/>	\$50,176	
Focus: Research on the Operational Costs and Benefits of Speed Feedback Signs							
Grantor: Housing Virginia APP: 155059, RC107866	3/2017	\$3,000	<input type="checkbox"/>	\$3,000	<input type="checkbox"/>	\$3,000	
Focus: Data Mining on Educational Impact to Residential Energy Efficiency							
Grantor: GreenBright Design Build Co. PD: 58532	2/2017	\$3,565	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
Focus: BIM-based Integration for Energy Efficiency and Sustainability							
Grantor: Michigan Dept. of Transportation APP: 153560	12/2016	\$171,998	<input type="checkbox"/>		<input checked="" type="checkbox"/>		
Focus: 3D Highway Design Cost Benefit Analysis							
Grantor: Nat'l Inst. for Occup. Safety & Health PD: 47068	11/2016	\$426,230	<input type="checkbox"/>		<input checked="" type="checkbox"/>		
Focus: Sociotechnical Barriers to OSH Implementation for Small and Medium Sized Construction Firms							
Grantor: National Science Foundation PD: 25122	10/2016	\$297,000	<input checked="" type="checkbox"/>		<input type="checkbox"/>		
Focus: Domicology Education in CONSTRUCTION							
Grantor: National Institute of Health PD: 42750	10/2016	\$148,324	<input type="checkbox"/>		<input checked="" type="checkbox"/>		
Focus: An EEG-embedded Wearable System as an Engineering Control to Monitor Fatigue in Construction							

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Name of Granting Agency (Grantor:) Focus of Grant (Focus:)	Date Submitted	\$ Amount Requested	Status			\$ Amount Assigned to Faculty Candidate (if Applicable)	Principal/Co-Investigators (if not faculty candidate)
			Pending	\$ Amt Funded	Not Funded		
Grantor: Virginia Housing Development Auth. APP: 150687, RC106573	10/2016	\$10,000	<input type="checkbox"/>	\$10,000	<input type="checkbox"/>	\$10,000	
Focus: Data Mining on Economic Impacts and Planning Strategies for Housing Development							
Grantor: Housing Virginia APP: 148834, RC107094	10/2016	\$10,000	<input type="checkbox"/>	\$10,000	<input type="checkbox"/>	\$10,000	
Focus: Effects of Energy Education on Residential Energy Efficiency							
Grantor: U.S. Dept. of Housing & Urban Dev. APP: 151967	9/2016	\$150,001	<input type="checkbox"/>		<input checked="" type="checkbox"/>		██████████ (co-PI)
Focus: Economic Impacts of LIHTC's Green Building Policy on Occupants and Developers through Improved Energy Efficiency							
Grantor: National Science Foundation APP: 148493	8/2016	\$150,000	<input type="checkbox"/>		<input checked="" type="checkbox"/>		
Focus: Research Initiation: Fostering Global Competence							
Grantor: MSU (Internal) APP: N/A Internal	4/2016	\$3,000	<input type="checkbox"/>	\$3,000	<input type="checkbox"/>		
Focus: CANR Professional Development Microgrant							
Grantor: Transportation Research Board APP: 148185	2/2016	\$325,000	<input type="checkbox"/>		<input checked="" type="checkbox"/>		██████████ (co-PI)
Focus: Integrating Airport Sustainability							
Grantor: Associated General Contractors APP: 147504, RC106093	12/2015	\$13,458	<input type="checkbox"/>	\$13,458	<input type="checkbox"/>	\$13,458	
Focus: Data Mining, Analysis, and Visualization for Construction Fatality and Prevention							
Grantor: National Science Foundation APP: 145539, RC107102	11/2015	\$5,408	<input type="checkbox"/>	\$5,408	<input type="checkbox"/>	\$5,408	
Focus: An Instrument and Adoption Framework for Student Cognitive and Social Engagement with a Course							

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FORM D - IV E GRANT PROPOSALS

Name of Granting Agency (Grantor:) Focus of Grant (Focus:)	Date Submitted	\$ Amount Requested	Status			\$ Amount Assigned to Faculty Candidate (if Applicable)	Principal/Co-Investigators (if not faculty candidate)
			Pending	\$ Amt Funded	Not Funded		
Grantor: ELECTRI International APP: N/A Pre-proposal	11/2015	\$40,000	<input type="checkbox"/>		<input checked="" type="checkbox"/>		██████████ (co-PI)
Focus: Decision-Making Chain for Occupational Safety for Transmission and Distribution Contractors							
Grantor: Better Housing Coalition APP: 146209, RC106035	10/2015	\$5,000	<input type="checkbox"/>	\$5,000	<input type="checkbox"/>	\$5,000	
Focus: Tool Development for Construction Economics, Strategies and Planning							
Grantor: National Institute of Health APP: 145909	10/2015	\$361,420	<input type="checkbox"/>		<input checked="" type="checkbox"/>		
Focus: Sociotechnical Barriers to OSH Implementation							
Grantor: Housing Virginia APP: 145536	10/2015	\$3,000	<input type="checkbox"/>		<input checked="" type="checkbox"/>		
Focus: Handbook Development for Housing Sourcebook Updates							
III. a. Service – Academic Community							
Grantor:			<input type="checkbox"/>		<input type="checkbox"/>		
Focus:							
III. b Service – Broader Community							
i. MSU Extension							
Grantor:			<input type="checkbox"/>		<input type="checkbox"/>		
Focus:							
ii. Professional/Patient Care Activities							
Grantor:			<input type="checkbox"/>		<input type="checkbox"/>		
Focus:							

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