

Curriculum Vitae

Juyeong Choi

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General Information

University address: Civil and Environmental Engineering
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Professional Preparation

- 2018 Ph.D., Purdue University, West Lafayette, IN. Major: Construction Engineering and Management. Construction Engineering and Management. Supervisor: Dr. Makarand Hastak.
- 2015 MS, Purdue University, West Lafayette, IN. Major: Civil Engineering. Construction Engineering and Management. Supervisor: Dr. Makarand Hastak.
- 2013 BS, University of Seoul, Seoul, South Korea. Major: Architectural Engineering. Construction Engineering and Management. Supervisor: Dr. Chang-Taek Hyun.

Professional Experience

- 2018–present Assistant Professor, CIVIL & ENVIRONMENTAL ENGINEER, Florida State University.

Language Proficiency

English - fluent in speaking, reading, and writing.
Korean - native in speaking, reading, and writing.

Areas of Expertise

Agent-based modeling.
Building demolition planning.
Composite index.
Disaster debris management.
Discrete event simulation.
Infrastructure resilience.
Infrastructure system-of-systems.
Machine learning.
Post-disaster recycling and reuse.
Sustainable material harvesting.
System dynamic.

Honors, Awards, and Prizes

2022 Outstanding Reviewer, ASCE Journal of Management in Engineering (2023).
Editor's Choice Collection, ASCE Journal of Management in Engineering (2023).

My student (Will Hill)'s paper was selected by the chief editor to be featured in the Editor's Choice section of the journal based on its novelty and topic.

Faculty Early Career Development (NSF CAREER) Award, National Science Foundation (2023). (\$510,000).

Editor's Choice Collection, ASCE Journal of Construction Engineering and Management (2022).

My student (Navid Nickdoost)'s paper was selected by the chief editor to be featured in the Editor's Choice section of the journal based on its novelty and topic.

Editor's Choice Collection, ASCE Journal of Transportation Engineering Part A: Systems (2022).

My student (Fehintola Sanusi)'s paper was selected by the chief editor to be featured in the Editor's Choice section of the journal based on its novelty and topic.

2021 Outstanding Reviewer, ASCE Journal of Management in Engineering (2022).
CEE Graduate Student Research Excellence Award, Department of Civil and Environmental Engineering (2022). (\$1,000).

Two Ph.D. students that I advised won the 2022 CEE Graduate Student Research Excellence Award.

2020 Outstanding Reviewer, ASCE Journal of Management in Engineering (2021).
2019 Outstanding Reviewer, ASCE Journal of Management in Engineering (2020).
Runner Up for the ASCE 2019 Best Peer Reviewed Paper Award, ASCE Journal of Management in Engineering (2020).

The Enabling the Next Generation of Hazards and Disasters Researchers Fellowship, National Science Foundation (2019).

2018 Outstanding Reviewer, ASCE Journal of Management in Engineering (2019).

First Year Assistant Professor Award, Florida State University (2019). (\$20,000).

Emerald Literati Award, Emerald Publishing (2018).

Purdue Graduate Student Government Travel Award, Purdue University (2018).

Engineering Conference Travel Award, Purdue University (2017).
Purdue Graduate Student Government Travel Award, Purdue University (2017).
Best Peer Reviewed Paper Honorable Mention, ASCE Journal of Management in Engineering (2016).
Zimmerman Award for Innovation and Outreach, Purdue University (2016).

Current Membership in Professional Organizations

American Society of Civil Engineers
Korean American Scientists and Engineers Association
Sustainable Material Management Extreme Events Reconnaissance (SUMMEER)

Teaching

Courses Taught

Infrastructure System of Systems Analysis and Planning (CGN5307)
Construction Materials (CCE3101)
Preliminary Exam Preparation (CGN6960)
Civil Engineering Seminar (CGN5935)
Project Controls in Construction (CCE 5036)
Analysis and Design of Social-Ecological-Technical Systems (CGN 5930)
Infrastructure System of Systems Analysis and Management (CGN 5930)
Infrastructure Plan SmartCites (CGN5905)

New Course Development

Project Controls in Construction (2020)
Analysis and Design of Social-Ecological-Technical Systems (2020)
Infrastructure System of Systems Analysis and Planning (2019)

Doctoral Committee Chair

Fehintola Sanusi, graduate. (2022). *A Simulation-Based Optimization of Multiyear Infrastructure Implementation Plan for Connected and Automated Vehicles*. [[defended on 04/05/2022]]
Movahedi, M., doctoral candidate.
Alshami, A., doctoral candidate.
Jalloul, H., doctoral candidate.
Nickdoost, N., doctoral candidate. *A system of systems approach to data-driven built environment planning*.
Elsayed, M., doctoral student.

Doctoral Committee Cochair

Nazemi, M., doctoral student.

Doctoral Committee Member

Vijayan Nair Rugminiamma, Linoj, graduate. (2023).

Oluwatosin P. Theophilus, graduate. (2021).

Taheri, A., doctoral candidate.

Abdelmagid, M., doctoral candidate.

Master's Committee Chair

Shooshtari, M. J., graduate. (2023). *Development of a Computer Vision-Based Model to Identify Demolition Activities.*

Heydari, S. E., student.

Hill, Joshua (Will), student.

Master's Committee Cochair

Pinto, A. D., graduate. (2022). *Evaluate the Impact of a Pandemic by System Characteristics to Improve the Resilience of Solid Waste Management Systems.* [[defended on 07/07/2022]]

Harris, A. I., student.

Supervision of Student Research Not Related to Thesis or Dissertation

Ray, E. (Feb 2024–present).

Turner, J. (Feb 2024–present).

Bemzagh, Y. (Aug 2023–present).

Undergraduate Research Opportunity Program student.

Hagans, B. (Aug 2023–present).

Undergraduate Research Opportunity Program student.

Katwala, N. (Aug 2023–present).

Undergraduate Research Opportunity Program student.

Rackley, C. (Aug 2023–present).

Short, K. (Aug 2023–present).

Smith, S. (Oct 2021–present).

Ramos, M. (Sep 2022–May 2023).

Undergraduate Research Opportunity Program student.

Stout, E. (Sep 2022–May 2023).

Undergraduate Research Opportunity Program student.

Virachittevin, S. (Sep 2022–May 2023).

Undergraduate Research Opportunity Program student.

Brock, C. (Sep–Dec 2022).

Diaz, J. (Sep–Dec 2022).

Numa, S. (Sep–Dec 2022).

Wuerth, A. (Sep 2021–Dec 2022).

Espinoza, E. (Jan–May 2022).

Brolly, G. (Oct 2021–May 2022).

Tallon-Rendon, A. (Sep 2021–May 2022).

Undergraduate Research Opportunity Program student.

Coram, S. L. (Oct–Dec 2021).

Touza, W. (Oct–Dec 2021).

Kutbi, Y. (May–Dec 2021).

Nick, S. (May–Dec 2021).

Molina, G. (Jan–Dec 2021).

Redenius, M. (May 2020–Aug 2021).

Aninat, E. (Jul 2020–Apr 2021).

Effort to Enhance Teaching

Choi, J. (2022). *Contextualized Scaffolding for Engineering Faculty to Facilitate the Adoption of EBIPs*. Oregon State University (funded by the U.S. National Science Foundation).

In an effort to enhance my teaching methods (i.e., student-centered teaching practices), I have participated in the NSF project led by Dr. Shane Brown (from Oregon State University).

Research and Original Creative Work

My research focuses on improving community resilience and minimizing the environmental impacts of disaster events through sustainable and resilient disaster infrastructure management. The major achievements of my research include but are not limited to: (i) composite index frameworks to support complex infrastructure planning (e.g., strategic planning for a state's transportation and resilience planning); (ii) simulation-based infrastructure planning models (e.g., to support post-disaster debris planning or healthcare system planning); (iii) sustainable building demolition/reconstruction planning tools; and (iv) a National Science Foundation-sponsored post-disaster reconnaissance organization with a focus on post-disaster sustainable debris management issues. Between Fall 2018 and Spring 2023, I received 14 research grants with an overall value of approximately 2.5M, with 1.9M as a PI, including the prestigious NSF CAREER Award with a value of approximately \$510K. Most of my projects were funded by the U.S. National Science Foundation (45.68%) and the Florida Department of Transportation (33.89%). I also published 15 refereed publications in leading international journals, including the *Journal of Management in Engineering* (2021 IF = 6.415), *Journal of Construction Engineering and Management* (2021 IF = 5.292), and *Resources, Conservation and Recycling* (2021 IF = 13.716) and presented my selected work at major international conferences such as ASCE Construction Research Congress and CSCE Annual Conferences. As of March 2023, I have successfully graduated 1 Ph.D. student and 1 M.Sc. student. Overall, my research program has made significant contributions to the field of sustainable and resilient infrastructure management and will continue to work towards creating sustainable and resilient communities in the face of disasters.

Publications

Refereed Journal Articles

Movahedi, M., & Choi, J. (submitted). The Crossroads of LLM and Traffic Control: A Study on Large Language Models in Adaptive Traffic Signal Control. *IEEE Intelligent Transportation Systems Transactions*. Manuscript submitted for publication.

Nickdoost, N., Shooshtari, M. J., Choi, J., Smith, D., & AbdelRazig, Y. (in press). A composite index framework for quantitative resilience assessment of road infrastructure systems. *Transportation Research Part D: Transport and Environment*.

Jalloul, H., Pinto, A. D., & Choi, J. (2023). Investigating the Variance in the Adaptation Pathways of U.S. Municipal Solid Waste Management Systems to the COVID-19 Pandemic. *Sustainable Cities and Society*. doi:10.1016/j.scs.2023.105080

This study empirically investigates the adaptation pathways of nine U.S. municipal solid waste management systems during post-pandemic recovery. Graduate Students: Hiba Jalloul and Ana Daniela Pinto.

Yesiller, N., Hanson, J. L., Wartman, J., Turner, B., Gardiner, A., Choi, J., & Manheim, D. (2023). Disaster Reconnaissance Framework for Sustainable Post-Disaster Materials Management. *Waste Management and Research*. doi:10.1016/j.wasman.2023.07.010

This study proposes a framework, which considers data attributes, reconnaissance attributes, and time attributes, to enable timely post-disaster data collection for sustainable debris management research. Colleagues: Nazli Yesiller, James L. Hanson, Joseph Wartman, Benjamin Wartman, Andrea Gardiner, and Derek Manheim.

Jalloul, H., Choi, J., Manheim, D., Yesiller, N., & Derrible, S. (2023). Incorporating Disaster Debris in Sustainable Construction Research and Practice. *Journal of Construction Engineering and Management*. doi:10.1061/JCEMD4.COENG-13561

This study introduces potential research areas of sustainable disaster debris management fields to construction engineering and management researchers. Colleagues: Derek Manheim, Nazli Yesiller, and Sybil Derrible; Graduate Students: Hiba Jalloul.

AbdelMagid, M., AbdelRazig, Y., Smith, D., Horner, M., Choi, J., Kim, K., & Ventimiglia, B. (2023). Transportation System Performance Capabilities for Vulnerable Populations. *International Journal of Disaster Risk Reduction*. doi:10.1016/j.ijdr.2023.103991

This study aims to better understand the post-disaster needs and concerns of vulnerable populations and associate them with transportation performance. Colleagues: Yassir AbdelRazig, Dennis Smith, Mark Horner, and Billie Ventimiglia; Graduate Students: Mazin AbdelMagid and Kyusik Kim.

Nickdoost, N., Jalloul, H., Choi, J., & Smith, D. (2023). Identification and Prioritization of Multidimensional Resilience Factors for Incorporation in Coastal State Transportation Infrastructure Planning. *Natural Hazards*. doi:10.1007/s11069-023-06251-z

Mathias, J., Burns, D., Piekalkiewicz, E., Choi, J., & Feliciano, G. (2022). Roles of Nonprofits in Disaster Response and Recovery: Challenges and Adaptations to Shifting Disaster Patterns in the Context of Climate Change. *Natural Hazards Review*. doi:10.1061/(ASCE)NH.1527-6996.0000559

This study investigates how changing disaster patterns influence the roles of non-profit organizations. Colleagues: John Mathias and Ellen Piekalkiewicz; Graduate Students: Desirée Burns and Giselle Feliciano.

Jalloul, H., Choi, J., Yesiller, N., Manheim, D., & Derrible, S. (2022). A Systematic Approach to Identify, Characterize, and Prioritize the Data Needs for Quantitative Sustainable Disaster Debris Management. *Resources, Conservation & Recycling*. doi:10.1016/j.resconrec.2022.106174

This study aims to identify the data required to quantitatively assess both critical and practical aspects of sustainable disaster debris management and evaluate the importance of the data through social network analysis. Colleagues: Nazli Yesiller, Derek Manheim, and Sybil Derrible; Graduate Students: Hiba Jalloul.

Ahn, H., Choi, J., & Kim, Y. H. (2022). A Mathematical Modeling of Stuxnet-Style Autonomous Vehicle Malware. *IEEE Intelligent Transportation Systems Transactions*. doi:10.1109/TITS.2022.3213771

This study proposes a mathematical model for Stuxnet-style malware's temporal and spatial spread in the

case of the wide adoption of autonomous vehicles. Colleagues: Yong Hoon Kim; Graduate Students: Haesung Ahn.

Nickdoost, N., Jalloul, H., & Choi, J. (2022). An Integrated Framework for Temporary Disaster Debris Management Sites Selection and Debris Collection Logistics Planning using Geographic Information Systems and Agent-Based Modeling. *International Journal of Disaster Risk Reduction*. doi:10.1016/j.ijdr.2022.103215

This study constructs a simulation-based, integrated framework to determine the optimal locations for temporary debris management sites that meet geographic requirements while minimizing the social and economic impacts imposed on the community due to uncollected debris (i.e., debris logistics planning). Graduate Students: Navid Nickdoost and Hiba Jalloul.

Pinto, A. D., Jalloul, H., Nickdoost, N., Sanusi, F., Choi, J., & Abichou, T. (2022). Challenges and Adaptive Measures for U.S. Municipal Solid Waste Management Systems During the COVID-19 Pandemic. *Sustainability*. doi:10.3390/su14084834

This study investigates the longitudinal impact of the coronavirus pandemic on different municipal solid waste management systems across the United States, along with its evolution over time, using qualitative and quantitative data. Colleagues: Tarek Abichou; Graduate Students: Ana Daniela Pinto, Hiba Jalloul, Navid Nickdoost, and Fehintola Sanusi.

Hill, W., Jalloul, H., Movahedi, M., & Choi, J. (2022). Sustainable Material Management for the Built Environment from the Lifecycle Perspective. *Journal of Management in Engineering*. doi:10.1061/JMENEA.MEENG-4759

This study performs a systematic literature review on construction and demolition waste management to identify the causal factors contributing to the current unsustainable management practices, their root causes across the life cycle of the built environment, and sustainable strategies with proven efficacy in mitigating the detected root causes. Graduate Students: Will Hill, Hiba Jalloul, and Mohammad Movahedi.

Kumar, S., Abraham, D., & Choi, J. (2021). A Hybrid Framework for Mining Spatial Characteristics of Sewer Defects from Inspection Databases. *Urban Water*. doi:10.1080/1573062X.2021.1955280

This study proposes a hybrid framework for incorporating spatial information of defects into the analysis of sewer pipe conditions to enable more effective maintenance planning. Colleagues: Srinath Kumar and Dulcy Abraham.

Nickdoost, N., Choi, J., AbdelRazig, Y., & Sobanjo, J. (2021). A project life cycle approach to managing procrastination in construction projects. *Journal of Construction Engineering and Management*. doi:10.1061/(ASCE)CO.1943-7862.0002262

This study conducts a synthesis review to identify the root causes of workplace procrastination and construct an approach to manage the identified root causes from the project lifecycle perspective. Graduate Students: Navid Nickdoost; Colleagues: Yassir AbdelRazig and John Sobanjo.

Sanusi, F., Choi, J., Kim, Y. H., & Moses, R. (2021). Development of a Knowledge Base for Multi-year Infrastructure Planning for Connected and Automated Vehicles. *Journal of Transportation Engineering, Part A: Systems*. doi:10.1061/JTEPBS.0000656

This study performs a systematic literature review to construct a knowledge base for multiyear infrastructure planning for connected and automated vehicles. Graduate Students: Fehintola Sanusi;

Colleagues: Yong Hoon Kim and Ren Moses.

Nader, N., Choi, J., Yu, D. J., & Kwak, Y. H. (2021). Management of Resilience in Civil Infrastructure Systems: An Interdisciplinary Approach. *Journal of Management in Engineering*. doi:10.1061/(ASCE)ME.1943-5479.0000871

This article summarizes a collection of scholarly work in the area of resilience management of civil infrastructure. Colleagues: Nader Naderpajouh, David Jaehoon Yu, and Young Hoon Kwak.

Sanusi, F., Choi, J., Ulak, M. B., Ozguven, E. E., & Abichou, T. (2020). A Metadata-Based Analysis of Physical-Social-Civic Systems to Develop the Knowledge Base for Hurricane Shelter Planning. *Journal of Management in Engineering*. doi:10.1061/(ASCE)ME.1943-5479.0000802

This paper aims to synthesize the roles of various types of critical infrastructure for post-hurricane shelter operations. Graduate Student: Fehintola Sanusi; Colleagues: Mehmet Baran Ulak, Eren Erman Ozguven, and Tarek Abichou.

Sun, Y., Choi, J., Nickdoost, N., Kirtonia, S. K., & VanDenBogaert, J. (2020). Evaluating Correlations of External Factors and Performance Measures of the Multimodal Transportation System in Florida. *Journal of the Transportation Research Board*. doi:10.1177/03611981211006107

This paper aims to quantify the correlation between various external factors and performance measures of the Florida multimodal transportation system. Colleagues: Yanshuo Sun and Jessica VanDenBogaert; Graduate Students: Navid Nickdoost and Sajeeb Kumar Kirtonia.

Choi, J., Deshmukh, A., & Hastak, M. (2019). Seven-Layer Classification of Infrastructure to Improve Community Resilience to Disasters. *Journal of Infrastructure Systems*, 25(2), 04019012. Retrieved from <http://ascelibrary.org/doi/10.1061/28ASCE29IS.1943-555X.0000486>
doi:10.1061/(ASCE)IS.1943-555X.0000486

This paper aims to characterize the roles of seven-type critical infrastructure and guide the development of integrated resilience plans among various sectors. Colleagues: Abhijeet Deshmukh and Makarand Hastak.

Choi, J., Naderpajouh, N., Yu, D. J., & Hastak, M. (2019). Capacity Building for an Infrastructure System in Case of Disaster Using the System's Associated Social and Technical Components. *Journal of Management in Engineering*. doi:10.1061/(ASCE)ME.1943-5479.0000697

This paper aims to develop a numerical model to explain the importance of social and technical components for the resilience of an infrastructure system during post-disaster recovery. Colleagues: Nader Naderpajouh, David Jaehoon Yu, and Makarand Hastak.

Mohdavi, A., Naderpajouh, N., Choi, J., Hastak, M., & Cui, Q. (2019). Dynamics of Project Selection and Growth in Project Based Organizations. *International Journal of Construction Management*. doi:10.1080/15623599.2019.1604307

This model aims to develop a system dynamic model to evaluate the long-term effect of different project selection strategies of a construction company. Colleagues: Arash Mohdavi, Nader Naderpajouh, and Makarand Hastak.

- Choi, J., Deshmukh, A., Naderpajouh, N., & Hastak, M. (2017). Dynamic relationship between functional stress and strain capacity of post-disaster infrastructure. *Natural Hazards*, 87(2), 817-841.
- Zamenian, H., Choi, J., Sadeghi, S. A., & Naderpajouh, N. (2017). Systematic approach for asset management of urban water pipeline infrastructure systems. *Built Environment Project and Asset Management*.
- Naderpajouh, N., Choi, J., & Hastak, M. (2016). Exploratory framework for application of analytics in the construction industry. *Journal of Management in Engineering*, 32(2), 4015047.
- Choi, J., Deshmukh, A., & Hastak, M. (2016). Increase in stress on infrastructure facilities due to natural disasters. *International Journal of Urban Sciences*, (20)1, 77-89.
- Choi, J., Kim, H.-B., Son, M.-J., & Hyun, C.-T. (2015). Application of real option based life cycle cost analysis for reflecting operational flexibility in solar heating systems. *Korean Journal of Construction Engineering and Management*, 16(4), 70-79.

Refereed Proceedings

- Shooshtari, M. J., & Choi, J. (in press). Automated vision-based activity identification for demolition operations. In *The CSCE 2021 Annual Conference*. Canadian Society for Civil Engineers.

This study presents an automatic vision-based demolition activity identification model based on three-dimensional Convolutional Neural Networks (CNNs), which can extract spatial and temporal features simultaneously. Graduate Students: Mohammad Javad Shooshtari.

- Jalloul, H., & Choi, J. (in press). Harnessing the Concept of Emergence for Improved Planning and Decision-Making in the Built Environment. In *The CSCE 2021 Annual Conference*. Canadian Society for Civil Engineers.

This study reviews and analyzes existing studies in the construction and infrastructure engineering and management literature where the phenomenon of emergent behavior was acknowledged for the purpose of identifying emergence-related distinguishing patterns. Graduate Students: Hiba Jalloul.

- Nickdoost, N., Alshami, A., Choi, J., & Merrick, D. (in press). Optimization of a temporary debris management site on a two-way roadway. In *The CSCE 2023 Annual Conference*. Canadian Society for Civil Engineers.

This study proposes a simulation-based optimization framework to develop optimal operation strategies for a TDMS on a two-way roadway, considering site layout restrictions. Colleagues: David Merrick; Graduate Students: Navid Nickdoost and Ahmad Alshami.

Nickdoost, N., & Choi, J. (2024). A Composite Index Framework for Data-driven Decision-making in the Construction Industry. In *Proceeding of ASCE Construction Research Congress 2024*. Reston, VA: American Society of Civil Engineers.

Elsayed, M. Y., & Choi, J. (2024). A Small-Scale Simulation Approach to Educate the Next Generation of Engineers about Sustainability Challenges in Building Demolition. In *Proceeding of ASCE Construction Research Congress 2024*. Reston, VA: American Society of Civil Engineers.

Movahedi, M., Choi, J., Seo, S., & Koo, C. (2024). Assessment of Estimation Methods for Demolition Waste Volume and Cost. In *Proceeding of ASCE Construction Research Congress 2024*. Reston, VA: American Society of Civil Engineers.

Jalloul, H., Alshami, A., Nickdoost, N., Moon, J., & Choi, J. (2024). Automated Material Separation Activity Identification for Sustainable Demolition Operations. In *Proceeding of ASCE Construction Research Congress 2024*. Reston, VA: American Society of Civil Engineers.

Nazemi, M., Choi, J., & Zhang, Q. (2024). Reuse and recycling feasibility assessment for bridge components: a case study of a bridge investigation in Florida. In *Proceeding of ASCE Construction Research Congress 2024*. Reston, VA: American Society of Civil Engineers.

Jalloul, H., Pinto, A. D., & Choi, J. (2022). A Pre-Demolition Planning Framework to Balance Recyclability and Productivity. In *Proceeding of ASCE Construction Research Congress 2022*. Reston, VA: American Society of Civil Engineers.

This study develops a framework to find the optimal balance between recyclability and productivity in pre-demolition planning, which determines combinations of different demolition methods (i.e., saw cutting and standard, mini, and high-reach excavators) to demolish different sections (or buildings) in a project. Graduate Students: Hiba Jalloul and Ana Daniela Pinto.

Nickdoost, N., Choi, J., & AbdelRazig, Y. (2022). A System-of-Systems Framework for Data Analytics in the Construction Industry. In *Proceeding of ASCE Construction Research Congress 2022*. Reston, VA: American Society of Civil Engineers.

This study proposes a system-of-systems (SoS) framework to model the complex construction industry as a hierarchical system and to analyze the evolutionary and emergent phenomena, which significantly contribute to the changing and uncertain nature of the industry. Colleagues: Yassir AbdelRazig; Graduate Students: Navid Nickdoost.

Jalloul, H., Choi, J., Derrible, S., & Yesiller, N. (2022). Towards Sustainable Management of Disaster Debris: Three-Phase Post-Disaster Data Collection Planning. In *Proceeding of ASCE Construction Research Congress 2022*. Reston, VA: American Society of Civil Engineers.

This study proposes a three-phase post-disaster reconnaissance framework that facilitates the collection of time-sensitive data from disaster sites that are critical for sustainable debris management research: (1) response, (2) short-term recovery, and (3) long-term recovery phases. Colleagues: Sybil Derrible and Nazli Yesiller; Graduate Students: Hiba Jalloul.

Nickdoost, N., & Choi, J. (2021). A Framework to Determine the Optimal Locations of Temporary Debris Management Sites in Response to a Hurricane Event. In *The CSCE 2021 Annual Conference*. Canadian Society for Civil Engineers.

This study develops a framework to find the optimal locations for temporary debris management sites, which meet geographic requirements (i.e., related to their land use, land cover, and proximity to natural and built environments) while minimizing the threats imposed to the disaster-affected communities due to delayed debris removal operations. Graduate Student: Navid Nickdoost.

Sanusi, F., Choi, J., & Moses, R. (2021). A Multiyear Infrastructure Planning Framework for Connected and Automated Vehicles. In *The CSCE 2021 Annual Conference*. Canadian Society for Civil Engineers.

This study develops a conceptual framework to guide a holistic approach to multi-year infrastructure planning for connected and automated vehicles. Colleagues: Ren Moses; Graduate Students: Fehintola Sanusi.

Pinto, A. D., Choi, J., Sanusi, F., Aninat, E., & Abichou, T. (2021). Adaptation of Municipal Solid Waste Management Systems in response to the Covid-19 Pandemic. In *The CSCE 2021 Annual Conference*. Canadian Society for Civil Engineers.

This study (i) identifies a broad range of waste management and operational challenges during the coronavirus pandemic and (ii) summarizes various adaptive measures taken by different municipal solid waste management systems. Colleagues: Tarek Abichou; Graduate Students: Ana Daniela Pinto, Fehintola Sanusi, and Emilia Aninat.

Choi, J., Park, C., Yesiller, N., & Abichou, T. (2020). A Spatiotemporal Framework for the Resilience of a Post-Disaster Waste Management System. In *Proceeding of ASCE Construction Research Congress 2020*. Reston, VA: American Society of Civil Engineers.

This study proposes a spatiotemporal framework for improving resilience of a post-disaster waste management system where resilience is measured using three dimensions: performance, road segments, and time. Colleagues: Chiwoo Park, Nazli Yesiller, and Tarek Abichou.

Choi, J., Sanusi, F., & Hastak, M. (2019). Robust reserve capacity planning for post-disaster health-care facilities through intelligent planning units. In *the 7th CSCE International Construction Specialty Conference*. Laval, QC, Canada.

This research develops a mixed integer linear programming model that determines required reserve capacities for a post-disaster hospital to provide the highest level of care for patients (i.e., the objective of a high planning unit) through the optimization of the planning units for single-patient care within budget constraints. Colleagues: Makarand Hastak; Graduate Students: Fehintola Sanusi.

Choi, J., & Hastak, M. (2018). Robustness Enhancement of Healthcare Infrastructure through Intelligent Planning Units (IPUs). In *Proceeding of ASCE Construction Research Congress 2018* (pp. 201-212). Reston, VA: American Society of Civil Engineers.

Choi, J., & Hastak, M. (2017). Assessment of strain capacities of post-disaster critical infrastructure with respect to functional and structural stress. In *CSCE International Construction Specialty Conference*. Vancouver, Canada.

Choi, J., Kang, K., & Hastak, M. (2016). Infrastructure supply chain robustness to disasters by strain capacity design of critical infrastructure." . In *International Institute for Infrastructure Resilience and Reconstruction (I3R2)*. Peradeniya, Sri Lanka.

Choi, J., Naderpajouh, N., & Hastak, M. (2016). State of the art of construction analytics. In *Proceeding of ASCE Construction Research Congress 2016* (pp. 970-979). San Juan, Puerto Rico.

Refereed Reports

AbdelRazig, Y., Choi, J., Horner, M., Smith, D., AbdelMagid, M., Kim, K., & Ventimiglia, B. (2022). *Assessment of Transportation Systems Resilience for Vulnerable Populations*. Tallahassee, FL: Florida Department of Transportation.

A technical report was prepared for the Florida Department of Transportation (FDOT). Colleagues: Yassir AbdelRazig, Mark Horner, Dennis Smith, and Billie Ventimiglia; Graduate Students: Mazin AbdelMagid, and Kyusik Kim.

Choi, J., AbdelRazig, Y., Smith, D., Ventimiglia, B., Nickdoost, N., Shooshtari, M. J., Hess, A., & Amalbert, K. (2022). *Development of a Resilience Index for the Florida Surface Transportation System*. Tallahassee, FL: Florida Department of Transportation.

A technical report was prepared for the Florida Department of Transportation (FDOT). Colleagues: Yassir AbdelRazig, Dennis Smith, and Billie Ventimiglia; Graduate Students: Navid Nickdoost, Mohammad Javad Shooshtari, Ashton Hess, and Karina Amalbert.

Pinto, A. D., Jalloul, H., Choi, J., Abichou, T., Nickdoost, N., & Sanusi, F. (2022). *RAPID: The Impact of the Coronavirus (COVID-19) Pandemic on Municipal Solid Waste Management Systems*. Alexandria, VA; U.S. National Science Foundation.

A final report was prepared for the U.S. National Science Foundation. Colleagues: Tarek Abichou; Graduate Students: Ana Daniela, Hiba Jalloul, Navid Nickdoost, and Fehintola Sanusi.

Choi, J., Sun, Y., Smith, D., Crute, J., Moses, R., Horner, M., & Nickdoost, N. (2021). *Florida Index for Transportation: A System of Systems Approach to Understanding the Changing Nature of Transportation*. Tallahassee, FL: Florida Department of Transportation.

A technical report was prepared for the Florida Department of Transportation (FDOT) Colleagues: Yanshuo Sun, Dennis Smith, Jeremy Crute, Ren Moses, and Mark Horner; Graduate Students: Navid Nickdoost.

Derrible, S., Choi, J., & Yesiller, N. (2019). *Workshop on Post-Disaster Materials and Environmental Management*. Alexandria, VA; U.S. National Science Foundation.

A final report was prepared for the U.S. National Science Foundation. Colleagues: Sybil Derrible and Nazli Yesiller.

Nonrefereed Summaries

Choi, J., Ozguven, E., & Abichou, T. (2020). Summary of *Planning for Unplanned Resources: Extending Emergency Shelter Capacity Through Cooperation*. Boulder, CO; Natural Hazards Center. Retrieved from <https://hazards.colorado.edu/news/research-counts/planning-for-unplanned-resources-extending-emergency-shelter-capacity-through-cooperation>

This short article summarizes our findings from the project funded by the Natural Hazards Center, where we investigate the importance of secondary infrastructure during post-hurricane recovery. Colleagues: Eren Ozguven and Tarek Abichou.

Nonrefereed Reports

Jalloul, H., Sanusi, F., Asaam, N. E. E., Hill, W., Choi, J., Manheim, D., & Yesiller, N. (2021). *3 March 2020 Tennessee Tornadoes Virtual Assessment Report (VAR)*. Austin, Texas: DesignSafe-CI. Retrieved from <https://www.designsafe-ci.org/data/browser/public/designsafe.storage.published/PRJ-3188>

This report virtually investigates the feasibility of post-disaster recycling and reuse in response to the event. Colleagues: Nana Ehua Esuon Asaam, Derek Manheim, and Nazli Yesiller; Graduate Students: Hiba Jalloul, Fehintola Sanusi, and Will Hill.

Jalloul, H., Hill, W., Sanusi, F., Choi, J., Manheim, D., & Yesiller, N. (2020). *Sustainable Material Management Extreme Events Reconnaissance (SUMMEER) Virtual Assessment Report: Hurricane Laura, Louisiana, USA August 27, 2020*. Austin, Texas: DesignSafe-CI.

This report virtually investigates the feasibility of post-disaster recycling and reuse in response to the event. Colleagues: Nana Ehua Esuon Asaam, Derek Manheim, and Nazli Yesiller; Graduate Students: Hiba Jalloul, Fehintola Sanusi, and Will Hill.

Nonrefereed Newsletter Articles

Derrible, S., Choi, J., & Yesiller, N. (2019, December). Millions of burnt trees and rusted cars: Post-disaster cleanup is expensive, time-consuming and wasteful. *The Conversation*. Retrieved from <https://theconversation.com/millions-of-burnt-trees-and-rusted-cars-post-disaster-cleanup-is-expensive-time-consuming-and-wasteful-123566>

This short article talks about the significance of disaster-generated debris along with its potential for recycling. Colleagues: Sybil Derrible and Nazli Yesiller.

Presentations

Invited Keynote and Plenary Presentations at Conferences

Choi, J. (presented 2020, November). *Challenges and Adaptation of Municipal Solid Waste Management Systems during the Coronavirus Pandemic*. Plenary presentation at AEESPConvergingCOVID19: AEESP Converging COVID-19, environment, health, and equity, Association of Environmental Engineering and Science Professors. (International)

Invited Presentations at Symposia

Choi, J., & Abichou, T. (presented 2020, December). Challenges and Adaptation of Municipal Solid Waste Management Systems during the Coronavirus Pandemic. In *COVID'19 Pandemic Impact on Municipal Solid Waste (MSW) Management System*. Presentation at the meeting of Solid Waste Association of North America. (National)

Choi, J. (presented 2020, October). Assessment of the Impact of the Coronavirus Pandemic on Municipal Solid Waste Management Systems. In Scott Bohnhoff (Chair), *Energy Action Month*. Presentation at the meeting of National Science Foundation. (National)

Choi, J. (presented 2016). Stress–Strain Capacity Analysis for Robust Infrastructure Service during Post-Disaster Recovery. In *National Symposium for Resilient Critical Infrastructure (NSRCI)*. Poster presentation at the meeting of NSRCI, Chicago, IL. (National)

Refereed Presentations at Conferences

Manheim, D., Marissa Matsler, Yesiller, N., Choi, J., & Hanson, J. (presented 2022, July). *Integrating Social Equity into a Sustainable Post-Disaster Materials Management Decision Support Framework*. Poster presentation at 47th Annual Natural Hazards Research and Applications Workshop, Natural Hazards Center. (National)

Jalloul, H., Alshami, A., Choi, J., Manheim, D., & Yesiller, N. (presented 2022, July). *Lessons Learned from 2020-2021 Extreme Events: Recommendations for Sustainable Disaster Debris Management*. Poster presentation at 47th Annual Natural Hazards Research and Applications Workshop, Natural Hazards Center. (National)

Manheim, D., Yesiller, N., Hanson, J., & Choi, J. (presented 2021, July). *Immediate-, Short-, and Long-Term Climate Impacts of Disaster Waste Materials*. Poster presentation at 46th Annual Natural Hazards Research and Applications Workshop, Natural Hazards Center. (National)

- Choi, J., & Sanusi, F. (presented 2019, August). *Dynamic Relationships between Primary and Secondary Infrastructure for the Operation of Hurricane Shelters*. Presentation at US-Korean Conference (UKC) 2019, Korean-American Scientists and Engineers Association, Chicago, IL. (National)
- Choi, J., Naderpajouh, N., & Hastak, M. (presented 2017). *Purdue Index for Construction (Pi-C): A Framework for Construction Analytics Based Decision Making*. Poster presentation at CII Annual Conference, Construction Industry Institute, Orlando, FL, Orlando, FL. (National)
- Choi, J., Naderpajouh, N., & Hastak, M. (presented 2016). *Customized Research Social Network for Construction Engineering and Management*. Poster presentation at Young Generation and Professional Forum at US-Korea Conference, Korean-American Scientists and Engineers Association, Korean-American Scientists and Engineers Association. (National)
- Choi, J., & Hastak, M. (presented 2016). *Functional Stress-Strain Analysis of the Dynamic Operational Condition of Critical Infrastructure during Post-Disaster Recovery*. Poster presentation at Civil, Environmental, Architecture Symposium at US-Korea Conference, Korean-American Scientists and Engineers Association, Dallas, TX. (National)
- Choi, J., Hamed, Z., Abraham, D., & Iseley, T. (presented 2014). *Prioritize the Condition Assessment of Water Pipelines Network in City of Indianapolis.* Poster presentation at NASTT's 2014 No-Dig Show, NASTT, Orlando, FL. (National)
- Choi, J. (presented 2013). *Stress-Strain Capacity Analysis for Robust Infrastructure Service during Post-Disaster Recovery*. Presentation at Student Competition, NSRCI. (Local)

Invited Workshops

- Choi, J. (2023, February). *Three-phase post-disaster data collection planning for sustainable disaster debris management*. Workshop delivered at Research in Real Time: Natural Disasters, Tallahassee, FL. (Regional)
- Peek, L., Kijewski-Correa, T., Mendonça, D., Frost, D., Choi, J., & Wartman, J. (2021). *2021 EERI Annual Meeting Adapting to Change, Amplifying Resilience - Session 3: Using NHERI & Extreme Events Reconnaissance/Research Networks*. Workshop delivered at Earthquake Engineering Research Institute. (International)
- Choi, J. (2020, November). *Challenges and Adaptation of Municipal Solid Waste Management Systems during the Coronavirus Pandemic*. Workshop delivered at Research in Real Time: COVID-19 Pandemic & Natural Disasters, Tallahassee, FL. (Regional)

Refereed Workshops

Derrible, S., Yesiller, N., & Choi, J. (2019, May). *Workshop on Post-Disaster Materials and Environmental Management*. Workshop delivered at National Science Foundation, Alexandria, Virginia. (National)

Nonrefereed Workshops

Yesiller, N., & Choi, J. (2022, September). *SUMMEER Workshop: Disaster Reconnaissance for Sustainable Post-Disaster Materials Management*. Workshop delivered at Sustainable Material Management Extreme Events Reconnaissance (SUMMEER), San Luis Obispo, California. (National)

Choi, J., Yesiller, N., & Derrible, S. (2022, January). *SUMMEER Workshop – Understanding Data Needs for Sustainable Post-Disaster Material Management*. Workshop delivered at Sustainable Material Management Extreme Events Reconnaissance (SUMMEER), Tallahassee, FL. (National)

Choi, J., & Smith, D. (2021, December). *Demonstration of the Framework of a Transportation Resilience index*. Workshop delivered at Florida State University/Florida Department of Transportation, DeLand, Florida. (Regional)

Invited Lectures and Readings of Original Work

Choi, J. (2016). *Stress–Strain Capacity Analysis for the Impact of Natural Disasters on Coupled Infrastructure Facilities*. Delivered at CEM, Purdue University. (Local)

Contracts and Grants

Contracts and Grants Funded

Choi, J. (May 2024–Aug 2024). *Optimization of Excavator Bucket Design for Post-Building Collapse Rescue Operations through Small-Scale Experiments*. Funded by the Summer Research Support, FSU Council on Research and Creativity. Total award \$20,000.

Choi, J., Zhang, Q., & Moon, J. (Sep 2023–Aug 2024). *Planning: Establishing an Industry Partnership for Sustainable Demolition Research on Climate Change*. Funded by the U.S. National Science Foundation. Total award \$100,000.

Choi, J., Wang, H., & Yesiller, N. (Aug 2023–Aug 2026). *Excellence in Research: A Spatiotemporal Sustainability Method for Post-Disaster Vegetative Debris Management*. Funded by the U.S. National Science Foundation. (CBET-2302506). Total award \$599,256.

Choi, J. (May 2023–Apr 2024). *Educating the next generation of engineers on sustainable demolition practices*. Funded by the U.S. Environmental Protection Agency. Total award \$100,000.

This project aims to instill in students and the public a positive attitude toward demolition waste and educate the next generation of engineers to make more sustainable decisions. I am the single PI. This project will be awarded through FAMU. The award selection letter is included.

Choi, J. (May 2023–Apr 2028). *CAREER: Sustainable Material Harvesting in Civil Engineering: A Building Lifecycle Approach to Maximize Recyclable and Reusable Demolition Waste*. Funded by the U.S. National Science Foundation. Total award \$525,999.

The objectives of this CAREER are to investigate the impacts of decisions made by various stakeholders across a building's lifecycle and to develop a holistic approach to maximize recyclable and reusable material yields during the demolition phase (i.e., through research activities) while instilling in students and the general public a positive attitude about demolition waste as recoverable materials with untapped potentials (i.e., through education activities). I am the single PI.

Choi, J. (Dec 2022–Sep 2023). *RAPID: Investigating Illegal Dumping During the Course of Debris Collection Operations Following Hurricane Ian*. Funded by the U.S. National Science Foundation. Total award \$75,000.

This Rapid Response Research (RAPID) project aims to collect ephemeral data on uncollected debris on public roadways during the course of debris collection operations in order to investigate illegal debris disposal and its social and environmental impacts. I am the single PI.

Choi, J., Sun, Y., Moses, R., Smith, D., Ventimiglia, B., & Horner, M. (May 2022–Mar 2024). *Implementation of Florida Index for Transportation (FIT) for decision making in transportation planning - Phase 2*. Funded by Florida Department of Transportation. Total award \$269,196.

This project aims to (i) shed light on underlying relationships between influential external factors and their relevant transportation modes, (ii) enhance the robustness of the Florida Index for Transportation (FIT) framework, which was developed by me during the Phase 1 project, and (iii) maximize its implementability as a planning tool. My role for this project is the principal investigator.

Choi, J. (Jan 2022–Jan 2023). *Automated Activity Identification for Sustainable Demolition Management and Operations: a Proof of Concept through Small-Scale Simulation*. Funded by FSU Council on Research and Creativity (PG). Total award \$24,984.

This project aims to develop an automated demolition activity identification model, which enables effective performance monitoring & measurement and resource management for sustainability. I am the single PI.

Smith, D., Choi, J., Ozguven, E., Horner, M., & Poole, E. (May 2021–Apr 2023). *Broward County plan alignment, equity, and disaster housing tools*. Funded by Florida Department of Economic Opportunity. Total award \$348,898.

This project aims to evaluate the effectiveness of current mitigation plan integration with social vulnerability and housing for Broward County, Florida. As a Co-PI, my roles are assessing the public agency role of the housing recovery in post-disaster recovery and recommending strategies for the development of housing by type and levels of affordability. Credit/Effort in this project based on a 100% scale: 13%.

AbdelRazig, Y., Choi, J., Horner, M., Smith, D., & Crute, J. (May 2020–Apr 2022). *Assessment of Transportation Systems Resilience for Vulnerable Communities and Populations*. Funded by Florida Department of Transportation. Total award \$213,546.

This project aims to investigate, understand, model, and develop innovative solutions for risks and vulnerabilities of underrepresented populations pertaining to transportation infrastructure in Florida. As a Co-PI, my role is to help the principal investigator evaluate results of surveys with vulnerable populations and resilience planners and develop recommendations for the development resilience plans for vulnerable populations. Credit/Effort in this project based on a 100% scale: 4.33%.

Choi, J., & Abichou, T. (May 2020–Apr 2021). *RAPID: The Impact of the Coronavirus (COVID-19) Pandemic on Municipal Solid Waste Management Systems*. Funded by National Science Foundation. (045590). Total award \$176,129.

This RAPID project aims to collect ephemeral data on the longitudinal impact of the coronavirus pandemic on MSWMSs in multiple U.S. states including Florida, New York, and California. As a PI, I am leading the design of an online survey, development of system architectures, and analyses of the data obtained from both surveys and interviews with waste management stakeholders in order to understand challenges and adaptation processes of municipal solid waste management systems during the Coronavirus pandemic.

Choi, J., AbdelRazig, Y., Smith, D., & Crute, J. (Mar 2020–Sep 2021). *Development of a Resilience Index for the Florida Surface Transportation System*. Funded by Florida Department of Transportation. Total award \$189,999.

This project aims to develop a composite index to (i) quantitatively track and evaluate the resilience of the Florida surface transportation system at a network level and (ii) understand diverse capacity needs to achieve a desired level of resilience. As a PI, my role is to lead the development of a composite index to evaluate the resilience of the Florida Surface Transportation system.

Choi, J., Yesiller, N., & Derrible, S. (Feb 2020–Jan 2022). *EAGER: Sustainable Material Management Extreme Events Reconnaissance (SUMMEER) Organization*. Funded by National Science Foundation. Total award \$299,999.

The goal of this project is to establish a research organization "SUMMEER" with a geographically distributed network to respond to post-disaster materials management challenges associated with extreme disaster events. As a PI, my role is to co-found an extreme events reconnaissance organization with the other two directors, develop data standards and response protocols for effective field investigations, and develop training modules for timely and effective post-disaster reconnaissance.

Choi, J., Sun, Y., Moses, R., Smith, D., Crute, J., & Horner, M. (Aug 2019–Jan 2021). *Florida Index for Transportation: A System of Systems Approach to Understanding the Changing Nature of Transportation*. Funded by Florida Department of Transportation. Total award \$149,992.

This project aims to identify external factors affecting the Florida transportation systems and develop a composite-index framework that facilitates data-driven decision- or policy-making in transportation planning based on the insight derived from external factors with the developed index. My role in this project is the principal investigator.

Choi, J. (May 2019–Aug 2019). *Capacity building planning and management for a sustainable and resilient health-care facility*. Funded by FSU Council on Research and Creativity (FYAP). Total award \$20,000.

This project aims to evaluate the capacity needs for a sustainable and resilient healthcare facility in the face of increasing flood events. My role in this project is the single principal investigator.

Derrible, Sybil (PI), Choi, Juyeong (Co-PI), & Yesiller, Nazli (Co-PI). (Mar 2019–Aug 2019). *Workshop on Post-Disaster Materials and Environmental Management*. Funded by National Science Foundation. (#1922539). Total award \$49,946.

This project aims to bring together a critical mass of experts to identify major research needs related to the complex issues of management and environmental impacts of post-disaster materials in a systematic manner. As a Co-PI, my role is to support other investigators to organize the workshop while leading discussions of sub-groups during the workshop. No funds assigned to me; all of the funds were used to organize the workshop.

Choi, Juyeong(PI), Ozguven, Eren Erman (Co-PI), & Abichou, Tarek (Co-PI). (Dec 2018–Apr 2019). *Significance of Secondary Infrastructure for Shelter Management in the Aftermath of Hurricane Michael*. Funded by Natural Hazards Center. Total award \$2,000.

This project aims to investigate the impact of Hurricane Michael on hurricane shelters with a focus on secondary infrastructure (e.g., NGOs and other supplementary resources). My role in this project is the principal investigator.

Choi, Juyeong (PI). (Jul 2018–Jul 2021). *Start Up - C. Holmes*. Funded by FSU. Total award \$108,167.

Choi, Juyeong (PI). (Jul 2018–Jul 2021). *Start Up - J. Choi*. Funded by FSU. Total award \$36,271.

Contracts and Grants Pending

Choi, J. (Feb 2024). *Investigating Emergent Behavior in Heavy Machinery Productivity Based on Spatial Interactions: A Small-Scale Pilot Study for Demolition Planning*. Submitted to Florida State University. Unspecified award amount.

Choi, J., AbdelRazig, Y., Zhang, Q., Elwardany, M., Vanli, A., Moon, J., Choi, J. O., Aramali, V., Akanmu, A., & Rausch, C. (Jan 2024). *EPD Enhancement for Recycled Materials: A*

Web-based Carbon Emission Data Platform from Demolition Sites. Submitted to the U.S. Environmental Protection Agency. Unspecified award amount.

Choi, J. (Jan 2024). *Uncertainty Assessment for Product Category Rules for Salvaged and Remanufactured Construction Materials*. Submitted to the U.S. Environmental Protection Agency. Unspecified award amount.

Choi, J. (Dec 2023). *Collaborative Research: Building the foundation for sustainable disaster debris management research: Reconnaissance and education through SUMMEER*. Submitted to the U.S. National Science Foundation. Total award \$333,814.

Choi, J. (Nov 2023). *Empowering Battery Recycling: The Gulf Coast Battery Coalition (GCBC)*. Submitted to the U.S. Department of Energy. Unspecified award amount.

Choi, J. (Oct 2023). *Collaborative Research: Advancing Visual Expertise and Computational Thinking of Students to Perform Data Analytics Using Neurosymbolic Programming*. Submitted to the U.S. National Science Foundation. Unspecified award amount.

Contracts and Grants Denied

Choi, J., Pomidor, A., Moses, R., & Dulebenets, M. (Sep 2019). *Significance of concern over cybersecurity for older drivers' adoption of autonomous vehicles*. Submitted to Council on Research and Creativity, Florida State University. Unspecified award amount.

Juyeong Choi (PI), Alice Pomidor (Co-PI), Ren Moses (Co-PI), & Maxim Dulebenets (Co-PI). (Mar 2019). *Significance of concern over cybersecurity for older drivers' adoption of autonomous vehicles*. Submitted to FSU Institute for Successful Longevity. Unspecified award amount.

Choi, J., Sun, Y., Moses, R., Ozguven, E., Dulebenets, M., Smith, D., Horner, M., Duncan, M., & Crute, J. (Jan 2019). *Identifying and Tracking Emerging Transportation Trends and Indicators*. Submitted to Florida Department of Transportation. Unspecified award amount.

Choi, J., Mathias, J., & Park, C. (2019). *Post-Hurricane Debris Planning and Management for Community Resilience*. Submitted to Office of Research Development, Florida State University. Unspecified award amount.

Choi, J., Abichou, T., & Ozguven, E. E. (Oct 2018). *Significance of Secondary Infrastructure for Shelter Management of the Affected Communities in the Aftermath of Hurricane Florence*. Submitted to National Science Foundation. Unspecified award amount.

Service

Florida State University

FSU University Service

One of the panelists, NSF CAREER Awardee panel (2024–present).

Participate in a virtual panel discussion to support early career faculty members at FSU.

Faculty advisor, Undergraduate Research Opportunity Program (2022–present).

I supervised 1 undergraduate student in the academic year 2021-2022 and 3 undergraduate students in the academic year 2022-2023.

Faculty advisor, FSU Young Scholar Program (2022–present).

I supervised two high school students from the Young Scholar Program during the summer of 2022.

Affiliated Researcher, Institute for Successful Longevity (2018–present).

Director of the SIM Lab for presentation, RIDER Open House Event (2024).

Prepare hands-on activities to engage visitors in sustainable material research projects during the open house event.

Mock review panelist, NSF CAREER Mock Review, FSU Research Development (2023).

I reviewed two NSF CAREER proposals and provided comments for improvement during mock review sessions.

Faculty advisor, Experience Recognition Program (2021–2022).

I supervised 7 undergraduate students in 2021 and 2022.

FSU College Service

Faculty advisor, Educating Engineering Students Innovatively Program (2022–present).

I advise African-American engineering students on their engineering-related careers.

The representative of Department of Civil and Environmental Engineering, College Website 2.0 workgroup (2019).

FSU Department Service

Chair, Teaching faculty search committee (Transportation/general) (2023–present).

Chair the search committee.

Committee member, Graduate program committee (2019–present).

Review graduate application and participate in other graduate program related activities.

Coordinator, Construction area (2022–2023).

I coordinate course schedules in the area of construction engineering and management and advise students (especially M. Eng students) on their plan of study.

Represent the college to attend the 2019 Fall FSU graduation ceremony, Engineering faculty marshal (2019).

FSU Institute or Center Service

Seek potential partners and build partnership for the RIDER Center, Partnership committee of the RIDER Center (2021).

The Profession

Editor for Refereed Journals

Associate Editor, *ASCE Journal of Management in Engineering* (2023–present).

Guest Editing for Refereed Journals

Naderpajouh, N., Choi, J., & Yu, D. J. (Eds.). (2019). Management of Resilience in Civil Infrastructure Systems: An Interdisciplinary Approach [Special Issue]. *Journal of Management in Engineering*.

Editorial Board Membership(s)

ASCE Journal of Management in Engineering (2020–present).

Guest Reviewer for Refereed Journals

IEEE Transactions on Engineering Management (2018–present).

International Journal of Construction Management (2018–present).

Journal of Infrastructure Systems (2018–present).

Journal of Management in Engineering (2018–present).

International Journal of Urban Sciences (2016–present).

Chair of a Symposium

Choi, J. (Chair). (2022, November). *SUMMEER Training Webinar: Analyzing Debris Clearance Operations Using Discrete Event Simulation*. Symposium conducted at the meeting of Sustainable Material Management Extreme Events Reconnaissance.

I coordinated and hosted this training webinar for researchers who are working in the area of sustainable disaster waste management. The topic is the use of discrete event simulation for modeling and analyzing disaster debris operations logistics.

Choi, J. (Chair). (2022, November). *SUMMEER Training Webinar: Collecting Disaster Debris Data with Social Media and Crowdsourcing*. Symposium conducted at the meeting of Sustainable Material Management Extreme Events Reconnaissance.

the collection and processing of disaster debris data with social media and crowdsourcing.

Choi, J. (Chair). (2022, July). *SUMMEER Training Webinar: EPA's Decision Support Tools for Disaster Debris Management – Part Two*. Symposium conducted at the meeting of Sustainable Material Management Extreme Events Reconnaissance.

I coordinated and hosted this training webinar for researchers who are working in the area of sustainable disaster waste management. The topic is the use of EPA's Municipal Solid Waste Decision Support Tool.

Choi, J. (Chair). (2022, April). *SUMMEER Training Webinar: EPA's Decision Support Tools for Disaster Debris Management – Part one*. Symposium conducted at the meeting of Sustainable Material Management Extreme Events Reconnaissance.

I coordinated and hosted this training webinar for researchers who are working in the area of sustainable disaster waste management. The topic is the use of EPA's Incident Waste Decision Support Tool (I-WASTE), Waste Storage and Staging Tool, and Waste Logistics Tool.

Choi, J. (Chair). (2019, June). *Disaster Management Session, 7th CSCE International Construction Specialty Conference*. Symposium conducted at the meeting of Canadian Society of Civil Engineers, Laval, Québec, Canada.

Derrible, S., Choi, J., & Yesiller, N. (Chair). (2019, May). *Workshop on Post-Disaster Materials and Environmental Management*. Symposium conducted at the meeting of National Science Foundation, Washington D.C.

Reviewer or Panelist for Grant Applications

Social Sciences and Humanities Research Council of Canada (2023).

National Science Foundation (2019).

Ad-hoc reviewer.

Service to Professional Associations

Member of Disaster Response And Recovery Committee, American Society of Civil Engineers (2021–present).

Advisor, SUsustainable Material Management Extreme Events Reconnaissance (SUMMEER) Student Chapter (2020–present).

Director, SUsustainable Material Management Extreme Events Reconnaissance (SUMMEER) (2020–present).

Member of the Energy and Environment Committee, Korean Institute of Construction Engineering and Management (2021–2023).

A program committee of Construction Research Congress 2020, Review submitted conference papers and provide recommendation, American Society of Civil Engineers (2019–2020).

Interviews

Sanders, Julia-Grace. (2020, December). How has the pandemic changed life? Look in your garbage. *The Daily Herald*. Retrieved from <https://www.heraldnet.com/news/how-has-the-pandemic-changed-life-look-in-your-garbage/>

Karidis, A. (2020, October). Florida State Researchers Gather Waste Industry Leaders' Best Practices Through Pandemic. *Waste 360*. Retrieved from <https://www.waste360.com/safety/florida-state-researchers-gather-waste-industry-leaders-best-practices-through-pandemic>

Hernandez, S. (2020, May). How the coronavirus is impacting your trash. *WCTV*. Retrieved from <https://www.wctv.tv/content/news/How-the-coronavirus-is-impacting-your-trash-570379001.html>

Service to Other Universities

Professional Development Committee Co-Chair, *Civil Engineering Graduate Student Advisory Council* (2017–2018).

Purdue University.

President, *Purdue Korean Civil Engineering Student Association* (2017–2018).

Purdue University.

The Community

Organizer, Tash to Art event, Middle school students in Tallahassee, Florida (2023–2024).

Collecting waste from a local demolition site, advertising the event, and engaging middle school students to create artcrafts with the collected waste in collaboration with an art professor.

Judge, Judge, the Swift Creek Science Fair, Swift Creek Middle School (2018).