March 2022

CURRICULUM VITAE

EUGENE BOADI-DANQUAH PhD, PE, M.ASCE
Email: *eugenebdanquah@gmail.com*

Education

Ph.D. Civil Engineering, University of Kansas, Lawrence, KS - USA. July 2019.
Dissertation title: "Development and validation of a lightweight modular floor system for steel structures"

M.S. Structural Engineering, University of Surrey, Guildford, Surrey - United Kingdom. April 2011.
Thesis title: "Shear failure in reinforced concrete beams"

B.Sc. Civil Engineering, Kwame Nkrumah University of Science and Technology, Kumasi - Ghana. June 2005.

Research interests

My research interests include the following:

- Development of lightweight, mobile and adaptable structures
- Vibration mitigation in lightweight steel structures
- Dynamic performance of lightweight steel structures
- Implementation of evidence-based and student-centered teaching and research methods
- Pedagogy advancement in engineering education

Publications

Boadi-Danquah, E., Yount, T., Collins, W., and Fadden, M. (2021). Cyclic behavior of single shear steel-to-steel screws and powder-actuated fastener connections. In *Engineering Structures,* 244, 112809.

Boadi-Danquah, E., MacLachlan, D. and Fadden, M. (2018). Cyclic performance of a lightweight rapidly constructible and reconfigurable modular steel floor diaphragm. In *Key Engineering Materials* (Vol. 763, pp. 541-548). Trans Tech Publications.

Boadi-Danquah E., Maclachlan D., Fadden M. (2018). Lightweight rapidly constructible and reconfigurable modular steel floor diaphragm: cyclic performance. In *3rd Huixian International Forum on Earthquake Engineering for Young Researchers*, Illinois-USA.

Robertson, B., **Boadi-Danquah, E.**, Fadden, M., Sutley, E. J., & Colistra, J. (2017). Lightweight rapidly constructible and reconfigurable modular steel floor systems: Serviceability analysis and design. In *AEI 2017* (pp. 603-614).

Boadi-Danquah, E., Robertson, B., Fadden, M. (2017). Design and parametric finite elements analysis – A thin lightweight two-way steel flooring systems. In *Structures Congress 2017* (pp. 225-236).

Boadi-Danquah, E., Robertson, B., Fadden, M., Sutley, E. J., Collistra, J. (2017). Lightweight modular steel floor system for rapidly constructible and reconfigurable buildings. *International Journal of Computational Methods and Experimental Measurements* 5(4), 562-573.

Presentations

Boadi-Danquah, E., Maclachlan D., Fadden, M. (2017, August). *Lightweight Rapidly Constructible and Reconfigurable Modular Steel Floor Diaphragm: Cyclic Performance*. 3rd Huixian International Forum on Earthquake Engineering for Young Researchers, Urbana-Champaign, Illinois-USA.

Boadi-Danquah, E., Robertson, B., Fadden, M. (2017, April). *Design and Parametric Finite Elements Analysis – Thin Lightweight Two-Way Steel Flooring Systems*. Structures Congress 2017, Denver, Colorado-USA.

Boadi-Danquah, E. (2016, March). *Static Load Assessment of a Lightweight Two-way Steel Flooring System*. Poster session presented at University of Kansas Graduate Research Competition, Lawrence, Kansas-USA.

Academic Awards, Grants, Scholarships, and Fellowships

KU Summer Research Scholarship, 2019

Awarded to selected graduate students based on outstanding research and academic performance.

KU Graduate Teaching Award, 2019

Awarded to selected graduate students based on outstanding performance as Graduate Teaching Assistants.

KU Graduate Engineering Association Travel Award, 2017

Awarded to selected graduate students to participate in external conferences.

Election to Phi-Kappa-Phi membership, 2016

Reserved for graduate students ranking in the top 10% of their class.

University of Kansas Graduate Research Competition, 2016

Second runner up, elected to membership of Sigma-xi scientific research society.

Ruben Zadigan Memorial Scholarship, 2015 & 2016

Scholarship awarded based on research accomplishments, academic performance and progress toward graduation.

KU Graduate Research Assistantship, 2015

Selected for graduate research assistantship through a highly selective process from a competitive pool of applicants. Award accompanied by full tuition and fees waiver.

Teaching Experiences

Adjunct Instructor, Spring 2022 – Date

Department of Engineering & Technology, Texas A&M University, Commerce, TX

Assistant Professor, Fall 2019 – Fall 2020

Science, Technology and Mathematics, Lincoln University, Jefferson City, MO
Program: *Civil Engineering Technology, Pre-Engineering and Drafting Technology*
Tenure-track Assistant Professor, with responsibilities of developing and teaching courses within the curricular of Civil Engineering Technology, Pre-Engineering and Drafting Technology. Also responsible for and involved in mentoring undergraduate researchers, and establishing a funded research program to involve undergraduates in a minority-serving institution.

Graduate Teaching Assistant, Fall 2018 – Spring 2019

School of Engineering, University of Kansas, Lawrence, KS
Course: *Statics and Dynamics* (Spring 2019)
Facilitated the establishment of an active learning environment. Assisting primary instructor in in-class co-operative learning activities for 47 undergraduates at different levels and with majors ranging from Aerospace Engineering to Atmospheric Science. Holding 3-hour per week office hours to enhance student learning. Co-ordinating work of undergraduate teaching fellows (UGTFs).

Course: *Structural Analysis* (Fall 2018)
Prepared and delivered lab sessions, and class activities focusing on the analysis of determinate and indeterminate structures for 52 junior level undergraduates. Designed and co-ordinated interactive learning activities. Graded course assignments and students' participation in interactive learning activities.

Lecturer, Fall 2013 – Spring 2015

Department of Civil Engineering, Central University, Tema, Ghana
Course: *Basic Structures* (Fall 2013, 2014)
Prepared and delivered course material and lab sessions for up to 50 engineering freshmen in basic structural analysis. Assisted students during office hours, graded course assignments and lab reports, and proctored examinations.

Course: *Strength of Materials* (Fall 2013- Spring 2015)
Prepared and delivered course material and lab sessions for up to 50 engineering sophomores and up to 150 architecture freshmen and sophomores in strength of materials. Tailored course material to be relevant to the respective disciplines. Assisted students during office hours, graded course assignments and proctored examinations.

Course: *Steel Design* (Spring 2013, 2014)
Prepared and delivered course material and lab sessions for up to 150 architecture juniors in the fundamentals of steel design and construction, covering steel section sizes, connections and framing. Graded course assignments, lab reports and independent design project.

Research Experience

Research Assistant. Fall 2015 – Present
Professors: Dr. Mathew Fadden & Dr. William Collins
Project: Thin two-way floor systems for steel structures

Developing numerical models and best-practice modeling techniques for a lightweight modular floor system. Designing and executing small and large-scale testing to augment numerical models. Coordination and collaboration with faculty, lab technicians, and fellow graduate students across departments, supervising and allocating tasks to undergraduate researchers.

Professional Experience

Forensic Engineer/Project Manager, January 2021 – Date
Donan Engineering, Nationwide

As a Forensic Engineer, I offer my expert/professional opinion on the cause(s) of damage to residential, industrial and commercial buildings through field studies and desk studies using the scientific method. I am also responsible for managing projects, and liaison with clients and homeowners.

Design Engineer, April 2012 – August 2013
CH2M Hill Limited, London, United Kingdom

Seconded to London Thames Water to assist in pre-tender designs for Thames Tideway Tunnel project. Provided design assistance for tunnel related projects in London, including London Bond Street upgrade and Post Office Tunnels.

Graduate Tunnel Engineer, November 2008 – March 2012
Donaldson Associates Limited, Derby, United Kingdom

Responsible for producing design calculations for various tunnels and tunnel related projects across the United Kingdom, including Preston IUDs and Jersey tunnel. Undertook tunnel and viaduct inspections, inspection reports writing and proposing remedial works.

Junior Engineer, April 2006 – October 2008
Broughton-Beatty Limited, Newport-Pagnell, United Kingdom

Responsible mainly for producing design calculations for residential, commercial and industrial structures in reinforced concrete, steel, timber and masonry. Liaised with clients, attended site meetings with clients and inspected on-going construction projects.

Technical skills

Finite element modeling and simulation using Abaqus CAE
Computer aided design/engineering: AutoCAD.
Programming in Matlab

Licenses

Professional Engineer (PE)
Texas Board of Professional Engineers and Land Surveyors
Kentucky Board of Professional Engineers
Iowa Engineering and Land Surveying Board

Professional Organizations

American Society of Civil Engineers (ASCE), Member, 2019 – Present

Service Activities

Facilitator – Project Discovery. July 2017 & 2018

School of Engineering, University of Kansas, Lawrence, KS

I introduced high school students to hands-on engineering projects, aimed to inspire interest in engineering education. I was also involved in teaching and explaining engineering concepts to project participants.

Facilitator – Explore Engineering. June 2018

School of Engineering, University of Kansas, Lawrence, KS

I was involved in teaching middle school students about engineering through hands-on activities designed to enhance creative thinking and problem-solving. I also gave laboratory tours to project participants.

Student vice-president. July 2017 – Present

Phi-kappa-phi, University of Kansas, Lawrence, KS

I was responsible for advancing the mission of phi-kappa-phi in University of Kansas. I also assisted new nominees and organized inductions and mentorship sessions.