K W E K U T E K Y I B R O W N , P H D , P . E .
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EDUCATION

PhD, Civil Engineering, Transportation Engineering **August 2016**
Clemson University, Clemson, South Carolina

M.S., Civil Engineering, Transportation Engineering **August 2010**
University of Connecticut, Storrs, Connecticut

B.Sc., Civil Engineering, **May 2006**
Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

PROFESSIONAL EXPERIENCE (ACADEMIA)

Associate Professor **August 2021 - Present**
Department of Civil and Environmental Engineering Charleston, SC
The Citadel, The Military College of South Carolina

Assistant Professor **August 2016 – August 2021**
Department of Civil and Environmental Engineering Charleston, SC
The Citadel, The Military College of South Carolina

Instructor **January 2016 - May 2016**
General Engineering Department Clemson, SC
Clemson University, Clemson, South Carolina

Research Assistant **January 2012 – August 2016**
Glenn Department of Civil Engineering Clemson, SC
Clemson University, Clemson, South Carolina

Teaching Assistant **January 2012 – December 2015**
Glenn Department of Civil Engineering Clemson, SC
Clemson University, Clemson, South Carolina

Research Assistant **August 2008 – November 2011**
Civil & Environmental Engineering Department Storrs, CT
University of Connecticut, Storrs, Connecticut

Teaching Assistant **August 2008 – May 2009**
Civil & Environmental Engineering Department Storrs, CT
University of Connecticut, Storrs, Connecticut

Teaching Assistant **August 2006 – May 2007**
Civil & Environmental Engineering Department Kumasi, Ghana
Kwame Nkrumah University of Science and Technology

TEACHING AND EXCELLENCE AWARDS

ASEE-SE New Faculty Researcher Award **March 2022**
Citadel New Faculty Excellence Award (The Citadel) **April 2021**
Harry C. Saxe Teaching Award (Civil and Const. Engineering Department, The Citadel) **April 2021**
South Carolina ASCE Educator of the Year **July 2020**

PROFESSIONAL REGISTRATION

Professional Engineering (P.E.) License **October 2020**
South Carolina Board of Engineers & Surveyors Registration #: 38384

PROFESSIONAL EXPERIENCE (INDUSTRY)

Intern **May 2014 – August 2014**
Civil Engineering Group Greenville, SC
Milone & MacBroom Inc

Intern **June 2013 – August 2013**
Transportation and Planning Department Spartanburg, SC
Spartanburg County Planning

Intern **June 2010 – August 2010**
Department of Transportation, Traffic and Parking New Haven, CT
City of New Haven

Intern **May 2004 – July 2004**
Structural, Surveying and Materials Departments Accra, Ghana
Twum-Boafo and Partners (Tetteh-Quarshie Interchange Project)

PROFESSIONAL MEMBERSHIP/LEADERSHIP

AASHTO GIS-T Student Paper Competition – Vice Chair **August 2019 - Present**

American Society of Engineering Education (ASEE) **August 2016 - Present**

Transportation Research Board (TRB)
Geographic Information Science and Applications (AED40) Committee
Member **April 2017 – April 2020**

Transportation Research Board (TRB)
Statewide Transportation Data and Info Systems (AED10) Committee
Member **April 2017 – April 2023**

Transportation Research Board (TRB)
Geospatial Data Acquisition Technologies (AKD70) Committee
Member **April 2020 – April 2023**

Institute of Transportation Engineers (ITE) **August 2009 – Present**

JOURNAL PUBLICATIONS

S. Morgan Hughey, Jennifer Sella, J.D. Adams, Sarah C. Porto, Daniel Bornstein, **Kweku Brown**, Safae Amahrir, Dimitra Michalaka, Kari Watkins, William Jeff Davis, (2022). It's electric! Measuring energy expenditure and perceptual differences between bicycles and electric-assist bicycles. Journal of Transport and Health. https://doi.org/10.1016/j.jth.2022.101523

Iqbal, A., Sarasua, W., **Brown, K.**, Ogle, J., Famili, A., Davis, W. J., Basnet, S., Kumar, D. (2020). Assessment of Crash Location Accuracy in Electronic Crash Reporting Systems. Transportation Research Record. https://doi.org/10.1177/0361198120929183

Hughey, S.M., Stowe, E.W., Trello, S.K., Bornstein, D., **Brown, K.**, Davis, J., Kaczynski, A.T. A Multi-Method Study of Patterns and Motivations of Greenway-based Physical Activity. Translational Journal of the American College of Sports Medicine. https://journals.lww.com/acsm-tj/Fulltext/2021/01150/A_Multimethod_Study_of_Patterns_and_Motivations_of.1.aspx

Ogle. J., Islam, S., **Brown, K.**, Davis, J., Sarasua, W. Impacts of State-Specific Policy and Legislation on Safety Advancement by Departments of Transportation. Transportation Research Record (TRR): Journal of the Transportation Research Board https://doi.org/10.1177/0361198118799038

Maria Chrysochoou, **Kweku Brown**, Geeta Dahal, Catalina Granda-Carvajal, Kathleen Segerson, Norman Garrick, Amvrossios Bagtzoglou. *A GIS Indexing Scheme to Screen Brownfields for Area-Wide Redevelopment Planning.* Landscape and Urban Planning 105 (2012) pg 187-198

Brian Maleck, Wayne Sarasua, Jennifer Ogle, **Kweku Brown**. *A Methodology Using GPS to Inventory University Campus Parking.* Journal of Transportation of the Institute of Transportation Engineers; Volume 6 (July 2014), pg 55-70

CONFERENCE PROCEEDINGS

Transportation Research Board (TRB) Annual Meeting, Washington DC **January 2022**
Poster session: Site Characterization for Fatal Crashes in South Carolina
Poster session: Evaluation of Mobile Terrestrial LiDAR Scanning Systems to Estimate Material Volumes for Pavement Resurfacing and Rehabilitation

128th American Society of Engineering Education (ASEE) National, (Virtual) **June 2021**
Presentation: Investigating Student Retention of Surveying Course Material from Sophomore Year to Senior Year Using Pre- and Post-Tests
Presentation: Beyond Continuity of Instruction—Innovating a Geomatics Course Using Problem-based Learning and Open-source Software

American Society of Engineering Education (ASEE) Zone II, Auburn, AL. **March 2020**
Presentation: Students' perception of performance before and after exams In a Surveying Course
Presentation: Adopting ASCE ExCEEd Model for Engineering Education: Lessons Learned and Implementation Strategies

Transportation Research Board (TRB) Annual Meeting, Washington DC **January 2020**
Poster session: Assessment of Crash Location Accuracy in Electron Crash Reporting Systems

American Society of Engineering Education (ASEE) Zone II, Raleigh, NC. **March 2019**
Presentation: The Value of the Involvement of Licensed Surveyors in a Surveying Course

Presentation: Study of Prior Exposure to Engineering Economy at a Regional University
Presentation: Perspectives on an Innovative Homework Policy
Presentation: Student Perceptions on how different course types may influence their career

Active Living Research (ALR) Annual Conference, Charleston SC. February 2019
Presentation: Holy Spokes Bike Share: Exploring the patterns of use, associations with built environment features, and implications for city planning and transportation in Charleston, SC
Presentation: Evaluating the use and physical activity patterns of three greenways in Charleston, South Carolina

Transportation Research Board (TRB) Annual Meeting, Washington DC January 2019
Poster session: Evaluation of Airborne and Mobile Lidar Accuracy In Highway Cross Slope Measurements

Transportation Research Board (TRB) Annual Meeting, Washington DC January 2018
Presentation: Impacts of State Specific Policy and Legislation on Safety Advancement by Departments of Transportation.
Presentation: Improving Quantity Estimating for Pavement Rehabilitation and Resurfacing Using Mobile LiDAR.

American Society of Engineering Education (ASEE) Zone II, Daytona Beach, FL. March 2018
Presentation: Surveying Courses in Civil Engineering

124th American Society of Engineering Education (ASEE) National, Columbus OH June 2017
Presentation: Application of Indirect and Direct Measures for Student Teamwork Outcome Assessment within an Undergraduate Civil Engineering Curriculum

American Society of Engineering Education (ASEE) Zone II, San Juan, Puerto Rico March 2017
Presentation: Assessment of Undergraduate Student Teamwork across Prerequisite Courses in Transportation Engineering at The Citadel
Presentation: Pedagogical Techniques Employed in an Engineering Drawing Course
Presentation: Faculty and Student Perceptions of Plickers

Transportation Research Board (TRB) Annual Meeting, Washington DC January 2017
Podium presentation: Analysis of Right-In, Right-Out Commercial Driveway Safety, Operations and Use of Channelization as Compliance Countermeasure.

GIS-T (Innovation in Transportation) April 2016
Podium presentation: Too Close To Home? An Investigation into Crash Proximity Relative to Drivers Residences in South Carolina (Author)

Transportation Research Board (TRB) Annual Meeting, Washington DC January 2016
Podium presentation: Safety Analysis of Driveway Characteristics Along Major Urban Arterial Corridors in South Carolina
Poster session: Safety Planning - Analysis of the Socio-Economic and Demographic Characteristics of At-Risk Driver Residential Areas in South Carolina (Author)
Poster session: Too Close To Home? An Investigation into Crash Proximity Relative to Drivers Residences in South Carolina (Author)

Transportation Research Board (TRB) Annual Meeting, Washington DC January 2015
Poster session: Assessment of Crash Location Improvements in Map-Based Geocoding Systems and Subsequent Benefits to Geospatial Crash Analysis (Author)

RESEARCH AND DEVELOPMENT GRANT AWARDS

"Southeastern Transportation Research, Innovation, Development and Education Center (STRIDE)", University Transportation Center, USDOT, Office of Research & Technology, University of Florida
"Evaluation of Transportation Network Infrastructure, Safety, and Travel Route Characteristics of Bike Share, Electric-Powered Pedal-Assist Bike Share, and Electric Scooter System Operation",
$94,990 research grant, The Citadel, Georgia Tech, College of Charleston, Dec. 2019

Year-4 Grant, SC "Center for Connected Multimodal Mobility (C2M2)", University Transportation Center, USDOT, Office of Research & Technology, Clemson University
$95,852 federal grant, June 2019

"South Carolina Center for Connected Multimodal Mobility (C2M2)," on Assessing Potential of Bike Share Networks and Active Transportation to Improve Urban Mobility, Physical Activity and Public Health Outcomes in South Carolina
Citadel Budget: $17,424, total project: $53,735 December, 2018
"South Carolina Department of Transportation" on Crash Analysis Using Precisely Geocoded Crashes
Citadel Budget: $25,740, total project: $197,496 August, 2017

Active Traffic Monitoring through Camera Networks with Automatic Camera Calibration for Pan-Tilt-Zoom Cameras, Clemson Led Project,
Citadel Budget: $52,779, total project: $142,000 August, 2017

Assessment of Safety Benefits of Technologies to Reduce Pedestrian Crossing Fatalities at Midblock locations, Clemson Led Project,
Citadel Budget: $20,406, total project: $100,000 August, 2017

"Regional UTC (Region 4) on Fast Act Research Priority: Reducing Congestion," University Transportation Center, USDOT, Office of Research and Technology, Univ. of Florida, Auburn Univ., The Citadel, Florida International, Georgia Tech, Jackson State, Univ., N.C. State Univ., Tennessee Tech, Univ. of Alabama-Birmingham, Univ. of North Carolina
$500,000 sub agreement of $14.3m grant award, December 2016

"South Carolina Center for Connected Multimodal Mobility (C2M2)," University Transportation Center, USDOT, Office of Research and Technology, Clemson Univ., The Citadel, Univ. of SC, S.C. State Univ., Benedict College
$500,000 sub agreement of $7.8m grant award, December 2016

TECHNICAL REPORTS

"Assessment of Safety Benefits of Technologies to Reduce Pedestrian Crossing Fatalities at Midblock Locations," Final Report, Center for Connected Multimodal Mobility (C2M2), University Transportation Center, U.S. Department of Transportation (USDOT), Office of Research and Technology, Authors: Ogle, Jennifer, Islam, Sababa, **Kweku Brown**, Judith Mwakalonge, Dimitra Michalaka, Ronnie Chowdhury, 96p, May 2020.

Midblock Crash Analysis Using Precisely Geocoded Crashes, FHWA-SC-20-01, Grant SPR 734, South Carolina Department of Transportation, Office of Material and Research, Federal Highway Administration, Authors: Dr. Wayne Sarasua, Dr. Jennifer Ogle, Department of Civil Engineering, Clemson University, Dr. William J. Davis, **Dr. Kweku Brown,** Department of Civil and Environmental Engineering, The Citadel, 88p, May 2020.

"12 Educational Outreach and Transportation Workforce Development at The Citadel". Southeastern Transportation Research, Innovation, Development and Education Center (STRIDE), University Transportation Center, U.S. Department of Transportation (USDOT), Office of Research and Technology. Authors: Dr. William J. Davis, Dr. Dimitra Michalaka, **Dr. Kweku Brown,** Department of Civil and Environmental Engineering, The Citadel, 57p, Dec 2019.

RESEARCH AWARDS AND RECOGNITIONS

2016 High Value Research, Transportation Excellence Through Research, "Support for the Development and Implementation of an Access Management Program through Research and Analysis of Collision Data," FHWA-SC-15-02, American Association of State Highway and Transportation Officials (AASHTO), Standing Committee on Research (SCOR), Research Advisory Committee, pp.167-168.

NEWSPAPER COLUMNS

Charleston City Paper Column by Dustin Waters: South Carolina's at-risk drivers linked to disadvantaged communities and schools - **(Behind the wheel, April 12, 2017)**

MANUALS AND SOFTWARE USED

HCM, MUTCD, ITE MANUALS, ESRI ArcGIS Pro, Maptitude 6.0, TransCAD 6.0, TSIS/CORSIM 6.1, VISSIM, HCS, AutoCAD 2021, Civil 3D 2019, MICROSOFT: Word, Excel, Power Point, Access, Visio

GRADUATE AWARDS

2013 Dwight Eisenhower Graduate Fellowship **August 2013 – August 2014**

Outstanding Graduate Lab Assistant Award **Academic Year 2013-2014 & 2014-2015**

(Glenn Department of Civil Engineering, Clemson University)

TEACHING

The Citadel, The Military College of South Carolina

- Instructor: CIVL 103 Introduction to Civil Engineering; Fall 2016 – 2020
- Instructor: CIVL 205 Surveying I & CIVL 235 Surveying I Lab.; Fall 2016 – 2020
- Instructor: CIVL 101 Engineering Drawing; Spring 2017 – 2021
- Instructor: CIVL 208 Geospatial Representation & CIVL 239 Geomatics Lab.; Spring 2017 – 2021
- Instructor: CIVL 239 Geomatics Laboratory; Spring 2017 – 2021
- Instructor: CIVL 314 Engineering Economy; Summer 2017 – 2021
- Instructor: CIVL 412 Engineering Practice and Professional Licensure; Fall 2017
- Instructor: CIVL 432/433 Civil Eng. Design Capstone I & II; Fall 2019, 2021 Spring 2020, 2022
- Instructor: CIVL 506 Geographic Information Systems; Summer 2020

Clemson University, Clemson, South Carolina

- Instructor: ENGR 2100 Engineering Graphics & Machine Design; Spring 2016
- Lab Instructor: CE 2550 Geomatics Laboratory; Spring, 2012 – Fall, 2015

University of Connecticut, Storrs, Connecticut

- Lab Instructor: Geomatics and Spatial Measurements; Fall 2008 – Spring 2009

RESEARCH

Clemson University, Clemson, South Carolina (January 2012 – August 2016)

Dissertation: Using Spatial Analysis to Identify High-Risk Driver Residential Areas in South Carolina

- Investigated demographic and socioeconomic characteristics of drivers involved in crashes using SC crash data and residential 9-digit zip code data of drivers

August 2013 – August 2016

Project Title: Applying Successfully Proven Measures in Roadway Safety to Reduce Harmful Collisions in South Carolina

- Identify proven safety programs across the nation and evaluate their applications in South Carolina
- Identify potential areas to target safety programs using crash data analysis

December 2013 – August 2016

Project Title: Support for the Development and Implementation of an Access Management Program through research and Analysis of Collision Data

- Geocoded and analyze South Carolina crash data
- Identify potential corridors with violations of access management standards

May 2013 – April 2014

Project Title: South Carolina Lane Width Project – The effects of roadway lane and shoulder widths on roadway operations and safety in South Carolina.

- Developed GIS models to create roadway segments and aggregate crash data to created segments
- Ran driving simulation scenarios to determine driver gap acceptance and effect of lane widths on encroachment **July 2012 – December 2013**

University of Connecticut, Storrs, Connecticut (January 2008 – November 2011)

Project Title: Reversing Urban Sprawl - A Reclaimability Index Approach for Reviving Downtown Brownfields

- Developed a visual tool for prioritizing brownfields in Connecticut using GIS as part of an interdisciplinary research team
- Created a smart growth index for the state of Connecticut using GIS tools

August 2008 – July 2010

Project Title: Nantucket Island Transportation Study

- Conducted transportation survey of residents and vacationers as part of assessment for need of parking structure **July 2009**

REFERENCES

William J. Davis	D. Graham Copeland Professor of Civil Engineering, The Citadel Head, Civil & Environmental Engineering Department 171 Moultrie St, Charleston SC 29409 Email: davisj7@citadel.edu O: 843-953-7687 C: 843-814-8395
Kevin Bower	Assistant Provost for Academic Operations and Professor, The Citadel 171 Moultrie St, Charleston SC 29409 Email: bowerk1@citadel.edu O: 843-953-7683 C: 843-696-0372
Wayne Sarasua	Associate Professor, Clemson University 310B Lowry Hall, Clemson University, SC 29634 Email: sarasua@clemson.edu O: 864-656-3318 C: 864-650-4983
Jennifer Ogle	Associate Professor, Clemson University 212 Lowry Hall, Clemson University, SC 29634 Email: ogle@clemson.edu O: 864-656-0883 C: 864-633-9638
Mashrur Chowdhury	Associate Professor, Clemson University 216 Lowry Hall, Clemson University, SC 29634 Email: mac@clemson.edu O: 864-656-3313 C: 864-508-0002