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Spring 2024

Vita

OBJECTIVES:

To participate in activities related to novel civil engineering material characterization and the evaluation of the sustainability and health of infrastructure systems with emphasis in the transportation infrastructure; to help evaluate new applications designed to extend the life of existing infrastructure systems; and to disseminate information that would increase the knowledge of civil engineering materials.

RELEVANT JOB HISTORY:

Academic

2007-Present **The University of Utah**, Salt Lake City, UT

Associate (Tenured) Professor of Civil Engineering. Performed innovative research in the area of infrastructure materials. Developed course on material characterization, sustainability, pavement design, and evaluation of the transportation network. Supervised graduate students and advised undergraduate students.

2000-2007 **The University of Utah**, Salt Lake City, UT

Assistant Professor of Civil Engineering. Updated the civil engineering materials curriculum for undergraduate and graduate students and created an up-to-date laboratory facility. Developed funded research opportunities in the area of civil engineering materials and pavement design.

Administrative (University of Utah)

2022–2024 **Price College of Engineering**

Director for Equity Diversity and Inclusion. Responsible for the coordination of EDI initiatives across the College including development of climate surveys. Obtained Bronze-Level status from the American Society of Engineering Education Diversity Recognition Program. Develop initiatives that promote inclusivity within the College. Work with local industry to develop mentoring programs for under-represented groups.

2012–Present **Department of Civil and Environmental Engineering**

Director of Undergraduate Studies. Responsible for undergraduate curriculum as determine by University and accreditation requirements. Development of a new curriculum to match future professional expectations. Perform a yearly review of all student performance to ensure proper progress towards graduation. Advised student that have academic issues and develop remediation strategies to ensure timely graduation. Assist in preparation of documents for 2021 ABET accreditation cycle.

2014-2021 **Department of Civil and Environmental Engineering**
Associate Chair. Advised department chair on policy issues including creation of a new academic program in construction engineering and establishment of a new degree at the Utah Asia Campus in South Korea. Represented the Department in University related meetings. Assist the department chair in administrative issues.

Professional

1997-2000 **Soil and Land Use Technology, Inc.**, Beltsville, MD
(Concurrent) On-site Manager, responsible for the day-to-day operation of a multi million-dollar laboratory support services contract with the Federal Highway Administration's Turner-Fairbank Highway Research Center.

1995-2000 **Turner-Fairbank Highway Research Center**, McLean, VA
(Concurrent) Laboratory Technical Manager for Federal Highway Administration under contract. Responsible for the technical work of the Bituminous Mixtures Laboratory personnel and equipment. Support research and implementation related to bituminous materials including Superpave methods, accelerated pavement damage models, and mechanistic-based pavement design methods.

1995-1997 **EBA Engineering, Inc**, Baltimore, MD
Laboratory Technical Manager, under contract for Federal Highway Administration. Responsible for the technical work of the Bituminous Mixtures Laboratory personnel and equipment.

1990-1995 **The Pennsylvania Transportation Institute**, University Park, PA
Research Assistant. Graduate student and full-time research staff. Performed innovative research in the area of pavements and materials including developing of new test procedures for SUPERPAVE performance-based specifications.

FORMAL EDUCATION:

The Pennsylvania State University, University Park, PA
Doctor of Philosophy (Ph.D.) in Civil Engineering with courses in statistics and engineering mechanics (elasticity, viscoelasticity, fracture mechanics) (1996)
Fellow College of Engineering (1993-1995)
Title of Dissertation: *The Effect of Laboratory Age-Hardening of Asphalt Mixtures on Thermal Cracking Performance Predictions Using the Indirect Tensile Test*
Area of emphasis: material performance, evaluation, and modeling of construction materials.
Advisers, Drs. Reynaldo Roque and David Anderson

The Pennsylvania State University, University Park, PA
Master of Science in Civil Engineering (Spring 1991)
Title of Thesis: *Analytical Development of a Dual-Rigid-Load Falling Weight Deflectometer to Obtain Pavement Layer Moduli from Surface Deflections*
Area of emphasis: Non-destructive characterization of Highway Materials and Falling Weight Deflectometer (FWD)

United States Coast Guard Academy, New London, CT
Bachelor of Science in Civil Engineering with High Honors (Spring 1989)
Completed additional courses at Coast Guard and Navy Technical Schools

RESEARCH PROJECTS (at University of Utah):

Served as Principal and Co-principal Investigator in multiple projects since August 2000. Worked with Federal and State agencies to develop new specifications and methodologies for infrastructure materials. Cooperated with private industry both domestic and internationally to evaluate new material processes. Managed several million dollars in research, a third of them from federal funds and half from state funds.

TEACHING EXPERIENCE:

Have taught the following courses since joining the faculty at The University of Utah

- Strength of Materials (CVEEN 2140): Fall 2000, Sp 2013
- Civil Engineering Materials (CVEEN 3510): Every Sp 2001 – 2011, Fall 2013, Sp 2016, 2021, 2022, every Fall 2017 – 2020, Fall 2022
- Pavement Design (CVEEN 5570/6570): Every Fall 2001 - 2023
- Advanced Materials (CVEEN 7560): Sp even 2002 – 2012, Fall 2014, Sp 2017
- Pavement Maintenance (CVEEN 7570): Sp odd years 2003 - 2013
- Sustainable Infrastructure (CVEEN 5920): Summer 2012
- Sustainable Materials Special Topics (CVEEN 5920): Sp 2014, 2015
- Sustainable Materials (CVEEN 5500): Every Sp 2016 – 2022, 2024

Formal Teaching Training:

United States Military Academy, West Point, NY
ASCE's Excellence in Civil Engineering Education Teaching Program (ExCEED)
(Week-long program, Summer 2001)

National Center for Asphalt Technology, Auburn University, Auburn, AL
Professor Training Course. (Week-long program Summer 2001)

Western Alliance to Expand Student Opportunities, Salt Lake City, UT
Faculty Doctoral Mentoring Seminar, (Fall 2002)

Portland Cement Association, Skokie, IL
Professor Training Course, (Summer 2003)

American Society of Civil Engineers, Reston, VA
Faculty Advisor Training Workshop (Fall 2003)

Center for Teaching and Learning, University of Utah, Salt Lake City, UT
Annual teaching seminars

American Society of Civil Engineers, Dallas, TX
Civil Engineering Educational Summit: Mapping the Future of Civil Engineering
Education (May 2019)

Teaching Awards:

- Named the 2004-2005 **Utah Engineer Educator of the Year** by the Utah Section of the American Society of Civil Engineers (ASCE)
- Selected among the College of Engineering Top Instructors for Fall 01, 11 Semesters
- Selected among the College of Engineering Top Instructors for Spring 04, 08 Semesters
- Voted most supportive professor by Student Advisory Committee for 2009 and 2010
- Named Outstanding Mentor, 2013
- Awarded the Ben Jacobsen Kingfisher Ranch Award for Exceptionally Effective Teaching, 2013
- Candidate for **University of Utah Distinguish Teaching Fellowship** (Fall 2014)

INTERNATIONAL EXPERIENCE:

Universidad de Costa Rica, Laboratorio Nacional de Materiales y Modelos Estructurales. San José, Costa Rica (<http://www.lanamme.ucr.ac.cr/>)
Instructor for course on Pavement Maintenance and Rehabilitation (in Spanish) (Spring 2012)

Harbin Institute of Technology, School of Transportation Science and Engineering. Harbin, PRC. (<http://tse.hit.edu.cn/>)
Instructor for course in Pavement Design and Materials Characterization (Summer 2015)

Korea Institute of Civil Engineering and Building Technology, Seoul, South Korea (<https://www.kict.re.kr/eng/>)

Invited Speaker, Conference on Disposal of Radioactive Waste from Nuclear Power plants (Summer 2016)

University of Utah, Utah Asia Campus, Incheon, South Korea (<https://asiacampus.utah.edu/>)

Visiting Lecturer (Summer 2016, Fall 2019)

Dankook University, School of Architectural Engineering, Yongin, South Korea (<http://www.dankook.ac.kr/web/international/108>).

Invited speaker, Super-Tall Building Global R&BD Center (Fall 2019)

PUBLICATIONS:

Over 50 peer-reviewed, journal publications (Scopus).
Over 30 abstract-reviewed and conference proceedings
Over 680 citations (Scopus), 1500 citation (Google Scholar)
h-index 15 (Scopus), 22 (Google Scholar)

See separate document with updated list of publications.

STUDENTS SUPERVISED:

Graduated Ph.D. students

- Junxia Wu, Dissertation topic: Segregation Models for Hot-Mix Asphalt. Current Manager Engineer for California Department of Transportation, Sacramento, CA
- Stephan Charmot, Dissertation topic: Fracture Testing of Cold-In Place Recycled Materials. Current Global Technical Advisor and Asphalt Group Leader for Ingevity, Shanghai, PRC
- Chun-Hsing Ho, Dissertation topic: Low Temperature Specifications of Asphalt Mixtures Using the Bending Beam Rheometer. Current professor at Durham School of Architectural Engineering and Construction. University of Nebraska-Lincoln, NE
- James Cox, Dissertation topic: Moisture Sensitivity of Asphalt Mixtures. Current professor of Construction Management at Utah Valley University, Orem, UT
- Xiangbin Gong (shared with Harbin Institute of Technology), Dissertation topic: Multi-Scale Characterization of Asphalt Mixtures. Current professor of Engineering at Changsha University of Science and Technology, Hunan Province, PRC
- Dahee Han, Dissertation topic: Development of Transportable Containers for Low-level Radioactive Waste. Current Laboratory Manager, PEC Inc. Salt Lake City, UT.
- Gao Yang (Shared with Chang'an University, Xi'an, PRC) Dissertation Topic, Polymer Resin Concrete Overlays. Current professor of Engineering at Taiyuan University of Technology, Taiyuan City, Shanxi Province.

- Faramarz Safazadeh, Dissertation topic: Development of visco-elastic models for asphalt mixtures using the semi-circular bend test. Current project engineer at PEPG Consultants, Salt Lake City, UT.
- Abu Sufian Mohammad Asib, Dissertation Topic: Aging of Asphalt Mixtures and Its Effect on Blending of Recycled Asphalt Pavements. Current pavement engineer for California Department of Transportation, Richmond, CA
- Ernesto Mora Castro (Shared with Universidad de Costa Rica), Dissertation topic: Development of Modified Water-Phobic Portland cement. Current, professor at Universidad de Costa Rica, Liberia, Costa Rica

Has graduated over 50 M.Sc. and M.Eng. Students

Currently supervised Ph.D. students:

- Abdullah Al Mamun, Dissertation topic: Development of Artificial Intelligence Algorithms for the Design of Asphalt Concrete Mixtures.
- Kevin VanFrank, Dissertation topic: TBD
- Jeremiah Raphael Adejube, Dissertation topic TBD
- Beatriz Paula Fieldkircher, Dissertation topic TBD

SERVICE ACTIVITIES:

Currently serving in many committees at the Department, University, and National level (Active associations identified by check mark)

University/College/Department Level

- ✓ Member, Department Executive Committee (2014 – Present)
- ✓ Member, Dept. Undergraduate Curriculum Committee (2005 – 2007, 2010 - present)
- ✓ Member, College of Engineering Undergraduate Curriculum Committee (2020 – Present)
- ✓ Co-Chair, College of Engineering Diversity and Inclusion Committee (2020 – present)
- ✓ Member, Department Justice, Equity, Diversity, and Inclusion Committee (2021-present)
- ✓ Member, University Parking Appeals Committee (2012 – Present)
- ✓ Chair, University Senate Advisory Committee on Academic Policy (2023 – present)
- ✓ Member, University Senate Advisory Committee on Academic Policy (2021 – 2023)
- ✓ Member, Utah System of Higher Education Civil Eng. Committee (2019 – present)
- Member, College of Science Academic Appeals and Misconduct Committee (2018-2021)
- Member, University Academic Appeals and Misconduct Committee (2008 – 2012)
- Member, University Senate Diversity Committee (2005-2007, 2010-2012, 2014-2016)
- Member, College of Engineering Council (2010 – 2013)
- Member, Department Graduate Committee (2012 – 2016)
- Member, Department Scholarship Committee (2004 – 2006 and 2010 - 2012)
- Faculty Advisor, American Society of Civil Engineers Student Chapter (2002 – 2012)
- Faculty Advisor, Association of General Contractors Student Chapter (2004 – 2012)
- Conference Chair, AISC-ASCE 2006 National Steel Bridge Competition
- Conference Chair, Rocky Mountain 2005 ASCE Regional Conference

International/National/State Level

- ✓ Member, Education Committee, Utah Asphalt Pavement Association (2010 – present)
- ✓ Committee Friend, Transportation Research Board (2017 – Present)
- ✓ Panel Member, NCHRP project 20-44
- Member, Transportation Research Board Committee on Asphalt Materials (AFK20) (2008 – 2017)

- Member, Transportation Research Board Committee on Characteristics of Bituminous Materials to Meet Structural Requirements (AFK50) (1997 – 2006)
- Member, Transportation Research Board Subcommittee on Latin American Activities (under Committee on International Activities, A0010) (2000 – 2012)
- ✓ Paper Reviewer, Transportation Research Board committees A0010, AFK20, AFK50, AFK50(1), AFK50(2), and AFH60
- ✓ Paper Reviewer, ASCE Journals of Materials in Civil Engineering and Transportation
- ✓ Paper Reviewer, Journal of the Association of Asphalt Paving Technologist
- ✓ Paper Reviewer, International Journal of Pavement Engineering
- ✓ Paper Reviewer, Journal of Road Materials and Pavement Design
- ✓ Paper Reviewer, International Journal of Airport Management
- ✓ Paper Reviewer, Journal of Construction and Building Materials

AWARDS AND RECOGNITION:

Utah Asphalt Pavement Association Industry Award (2024)
Utah Department of Transportation Trailblazer Award (2017)
ASCE Utah Educator of the Year Award (2005)

PROFESSIONAL REGISTRATION:

Registered Professional Engineer (PE) in the state of Maryland (200343)

ADDITIONAL INFORMATION:

Professional societies

Member, Society of Hispanic Professional Engineers (2023 – Present)
Member, American Society of Civil Engineers (ASCE) (1995 – 2015)
Member, American Society of Engineering Education (2001-2004)
Member, American Concrete Institute (ACI) (2003 – 2004)

Honor societies

Order of the Engineer, Chi Epsilon, Tau Beta Pi

U.S. Soccer Federation Licensed Referee (1997 – 2011)