

KYLE T. WIEGHAUS, Ph.D., P.E.



EDUCATION:

Ph.D. Civil Engineering (Structural), Texas A&M University, College Station, TX, 2015
M.S. Civil Engineering (Structural), Colorado State University, Fort Collins, CO, 2009
B.S. Civil Engineering, with Honors, Colorado State University, Fort Collins, CO, 2007

REGISTRATION:

Registered Professional Engineer (P.E.) in the following states: Colorado, Texas, and Wyoming

EXPERIENCE:

Director of Engineering, Knott Laboratory, LLC, Fort Collins, CO, January 2020 to Present
Engineering Manager, Knott Laboratory, LLC, Fort Collins, CO, January 2018 to Present
Senior Engineer, Knott Laboratory, LLC, Fort Collins, CO, November 2017 to December 2017
Forensic Engineer, Knott Laboratory, LLC, Houston, TX, August 2015 to January 2016, and Fort Collins, CO, January 2016 to November 2017
Research Specialist, Texas A&M Transportation Institute, College Station, TX, May 2015 to August 2015
Doctoral Teaching Fellow, Zachry Dept. of Civil Engineering, Texas A&M University, College Station, TX, August 2013 to January 2015
Graduate Research Assistant, Zachry Dept. of Civil Engineering, Texas A&M University, College Station, TX, August 2009 to May 2015
Graduate Research Assistant, Dept. of Civil and Environmental Engineering, Colorado State University, Fort Collins, CO, August 2008 to August 2009

FORENSIC ENGINEERING:

Dr. Wieghaus has investigated hundreds of structural and architectural files involving residential and commercial properties damaged by various natural and man-made hazards, including: design and construction defects, structural member failure, foundation failure, mechanical damage, wildfire, structure fire, wind, flood, hail, wind, tornado, snow, moisture intrusion, inadequate drainage, and organic growth. His findings focus on evaluating property damage and rendering professional opinions regarding cause, building integrity, and occupant safety, as well as designing repairs for reconstruction. Dr. Wieghaus has hail tested various building envelope items and materials. He has also served as a competent, unbiased appraiser and umpire to resolve a number of disputes encountered during residential and commercial insurance claims.

Dr. Wieghaus understands the code requirements, engineering design requirements, and construction for residential and commercial structures. He has served as an expert for both plaintiff and defense counsels for files regarding construction and design compliance, standard-of-care, and construction site safety. In addition, he has been the engineer-of-record and led numerous design teams for post-litigation reconstruction projects to resolve construction defects ranging from single-family residences to large-scale, multi-family developments. Dr. Wieghaus has worked on private-, insurance-, state-, and federally-funded projects. He has experience in both full-scale and non-destructive structural component testing and the evaluation of various types of structure failures. Dr. Wieghaus's experience and background have enabled him to determine the presence and extent of damage/defects to structural systems and building materials.

ENGINEERING AND DESIGN:

Dr. Wieghaus has provided engineering designs, plans, and specifications for repairs, improvements, and new construction for a range of residential and commercial structures and components. Dr. Wieghaus has a knowledge of various building/structural codes and standards and has taught various college-level engineering courses. In working with structures and systems exhibiting distress, Dr. Wieghaus relates the underlying mechanics to structural system and component distress. As a researcher, he gained a thorough understanding of a variety of engineering analyses, including: structural design, fatigue/fracture mechanics, risk and reliability assessment/remediation, project management, and technical report/deliverable preparation. At Knott Laboratory, he has practical experience in design document preparation, structure failure investigations, and construction and design compliance reporting.

As a researcher, Dr. Wieghaus was involved not only with the design but was also responsible for the fabrication and testing of structural concrete specimens, including: concrete beams and slabs with steel reinforcement, bridge girders, bridge decks, and railroad ties prestressed and/or reinforced using corrosion-resistant fiber reinforced polymer (FRP) composites. From this experience, he has identified and resolved problems/inefficiencies that may arise between engineer and contractor before and during construction.

Dr. Wieghaus's Ph.D. dissertation focused on the development and probabilistic assessment of low-cost, wind-induced fatigue retrofits for lightweight steel traffic signal support structures. His approach involved full-scale experimentation/monitoring and fatigue/fracture risk analyses. A patent was awarded for a device developed to reduce fatigue 'damage' in a wide variety of lightweight, fatigue-prone structures.

PROFESSIONAL AFFILIATIONS AND ACTIVITIES:

Dr. Wieghaus has been involved with the National Council of Examiners for Engineering and Surveying (NCEES) as a Civil-Structural Engineering and a Civil Engineering subject matter expert for the development of the next-generation Civil-Structural Principles and Practice of Engineering (P.E.) and Fundamentals of Engineering (F.E.) exams, respectively. Dr. Wieghaus has peer reviewed manuscripts for the following publications: Engineering Structures; Steel and Composite Structures; and Structural Monitoring and Maintenance.

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