3100 Terrace St.
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ELLEN E. WRIGHT, Ph.D., P.E.
SENIOR CONSULTANT

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Dr. Ellen Wright is a Senior Consultant with ESi and a licensed professional engineer in Metallurgical and Materials Engineering. Dr. Wright specializes in failure analysis and prevention, fractography, and characterization of materials. Dr. Wright has experience with many modes of failure and forms of material degradation, such as fatigue, fracture, corrosion, wear, creep, distortion, and weld failures. She has conducted investigations involving a diverse array of products across many industries, such as manufacturing, transportation (aviation and aerospace, rail, maritime, and automotive), power generation, chemical processing, medical device, and construction. Dr. Wright has performed a wide variety of materials and laboratory testing and is also experienced in field evaluation, documentation, and sampling.

Prior to joining ESi, Dr. Wright received her Ph.D. in Metallurgical and Materials Engineering from the Colorado School of Mines, where she served as a teaching and research assistant in the Electron Microscopy Laboratory and as a guest lecturer. Her graduate research focused on the mechanical behavior and corrosion performance of aluminum alloy extrusions and utilized both traditional and advanced characterization techniques. Dr. Wright also held internships with Precision Castparts Corp. Small Structures Business Operations (PCC-SSBO), Advanced Forming Technology (now ARC Group Worldwide), and the University of Colorado Cardiovascular Institute.

Dr. Wright is a skilled presenter and technical writer, and she provides expert testimony. She enjoys working on multidisciplinary teams to understand complex relationships between processing, operation, and performance of components.

Areas of Specialization

Failure Analysis
Fractography
Materials Technology, Characterization, and Selection
Laboratory & Industrial Services
Aviation Materials
Manufacturing
Corrosion
Materials Joining: Welding, Brazing, and Mechanical Fastening
Mechanical Properties and Testing

Education

Ph.D., Metallurgical and Materials Engineering, Colorado School of Mines, 2016
B.S., Metallurgical and Materials Engineering (*Magna Cum Laude),* Minor in Biotechnical Engineering and Life Sciences, Colorado School of Mines, 2012

Licensed Professional Engineer (P.E.)

State of Illinois ……. License No. 062.071063

Positions Held

Engineering Systems Inc. (ESi)

Senior Consultant, 2022 – Present
Senior Staff Consultant, 2018 – 2022
Staff Consultant, 2016 – 2018

Colorado School of Mines

Research and Teaching Assistant, Metallurgical and Materials Engineering, 2012 – 2016
Teaching Assistant, Physics, 2009

Precision Castparts Corporation Small Structures Business Operations (PCC-SSBO)

Intern, 2011

Advanced Forming Technologies (now ARC Group Worldwide)

Intern, 2010

University of Colorado Cardiovascular Institute

Intern, 2007 – 2008

Professional Affiliations

ASM International

Member, 2015 – Present

Failure Analysis Society (FAS)

FAS Board of Directors

Emerging Professional Board Member, 2022 – 2023

FAS Programming Committee

Co-Chair, Aviation, Failure Analysis Symposium, International Materials, Applications & Technologies Conference (IMAT), October 2023

Co-Chair, Gears, Shafts, & Bearings, Failure Analysis Symposium, International Materials, Applications & Technologies Conference (IMAT), September 2022

Co-Chair, Tools & Techniques, Dr. Michael E. Stevenson Failure Analysis Symposium, International Materials, Applications & Technologies Conference (IMAT), September 2021

Co-Chair, Failure Analysis & Characterization: Environmentally Assisted Failures, Materials Science & Technology (MS&T) Technical Meeting, October 2019

Co-Chair, Characterization & Methods in Failure Analysis: Tools & Techniques, Materials Science & Technology (MS&T) Technical Meeting, October 2018

Emerging Professionals Committee (EPC)

Secretary, 2019 – 2020
Objective Project Group Leader of EPC Applications, 2018 – 2019
Subcommittee Chair of EPC Awards, 2017 – 2018

Nominating Committee

Member, 2019

The Minerals, Metals & Materials Society (TMS)

Member, 2018 – Present

Additional Training

Principles of Failure Analysis
ASM International, February 2021

Structural Failure Identification in Aircraft Accident Investigation
Embry-Riddle Aeronautical University, April 2019

Electron Diffraction Methods for Materials Analysis
Colorado State University Central Instrument Facility, May 2015

Awards/Honors

Poate Fellowship, Colorado School of Mines, 2012 – 2013
Materials Bowl Champion, TMS, 2013
Student Grant, TMS, 2013
Clark B. Carpenter Award, Colorado School of Mines, 2012
President's Scholarship, Colorado School of Mines, 2008 – 2012
Highest Academic Honors Award, Sigma Kappa Sorority, 2008 – 2012

Publications/Presentations

"Fractography of Aluminum Alloys," **E.E. Wright**, *ASM Handbook,* Volume 12, *Fractography* (*in submission*)

"Metallurgical Analyses of Hail Damaged Roof Samples," **E.E. Wright**, R.P. Baron, J.D. Hassebrock, presented at the 2023 IMAT Conference, Detroit, MI, October 16, 2023

"Conquering Can Conundrums: Getting to the Bottom of Beverage Can Failures," E.A. Burns, **E.E. Wright**, J.P. Sommer, presented at the 2023 IMAT Conference, Detroit, MI, October 17, 2023

"Fracture Appearances and Failure Modes in Aluminum Alloys," **E.E. Wright**, R.J. Parrington, D.E. Alexander, presented at the 2022 IMAT Conference, New Orleans, LA, September 12, 2022

"Looks Can Be Deceiving: Investigating Assembly Issues and Their Role in a Gas Range Explosion," D.E. Alexander, **E.E. Wright**, E.A. Burns, presented at the 2022 IMAT Conference, New Orleans, LA, September 12, 2022

"Sampling Corrosion Residues to Aid in Failure Investigations," **E.E. Wright**, D.E. Alexander, B.M. May, M.A. Hineman, presented at the 2021 IMAT Conference, St. Louis, MO, September 15, 2021

"An Overview of Aircraft Accident Investigation and Component Failures," **E.E. Wright**, S.F. Uchneat, *ASM Handbook,* Volume 11A, *Analysis and Prevention of Component and Equipment Failures*, 2021, doi:10.31399/asm.hb.v11A.a0006821

"The Influence of Microstrain Evolution by Tensile Straining on Localized Corrosion of Al-Li Alloys 2099 and 2196," **E.E. Wright**, M.J. Kaufman, G.R. Weber, *Metallurgical and Materials Transactions A*, 2019, doi:10.1007/s11661-019-05565-7

"When Cleaning Makes a Mess: Case Studies Involving Cleaning Agents," **E.E. Wright**, M.A. Hineman, K.G. Cline, D.E. Alexander, B.M. May, presented at the 2019 MS&T Technical Meeting, Portland, OR, October 1, 2019

"The Little Plane That Could: Failure Analysis of a Robust Turbine Engine," D.E. Alexander, R.P. Baron, M.A. Lewis, C.M. Smith, P.D. Umberger, **E.E. Wright**, presented at the 2019 MS&T Technical Meeting, Portland, OR, September 30, 2019

"Investigation of a Compressor Turbine Blade Failure Involving the Fir Tree Attachment Condition," **E.E. Wright**, G.J. Novak, R.P. Baron, D.L. Ahearn, D.E. Alexander, presented at 2018 MS&T Technical Meeting, Columbus, OH, October 15, 2018

"Microscale Corrosion Investigation of Strained Al-Li Alloys by In-situ Atomic Force Microscopy", **E.E. Wright**, M.J. Kaufman, G.R. Weber, presented at 2017 MS&T Technical Meeting, Pittsburgh, PA, October 11, 2017

"Effects of Stretch Forming on Microstructure and Corrosion of Al-Cu-Li Alloys", **E.E. Wright**, M.J. Kaufman, G.R. Weber, presented at 2016 TMS Annual Meeting and Exhibition, Nashville, TN, February 17, 2016

"Effects of Stretch Forming on Properties of Al-Li Alloys 2099 and 2196", **E.E. Wright**, presented at ASM International Puget Sound Chapter Meeting, Seattle, WA, October 13, 2015

"Effects of Strain Variations on Aging Response and Corrosion Properties of Third Generation Al-Li Alloys", **E.E. Wright**, M.J. Kaufman, G.R. Weber, presented at 2015 MS&T Technical Meeting, Columbus, OH, October 5, 2015

"Effects of Stretch Forming on Aging and Corrosion of Third Generation Al-Li Alloys", **E.E. Wright**, M.J. Kaufman, presented at 2015 TMS Annual Meeting and Exhibition, Orlando, FL, March 18, 2015