

# RICHARD M. ZIERNICKI, Ph.D., P.E., DFE



## EDUCATION:

Ph.D. Technical Science, *magna cum laude*, specialty in dynamic analysis, 1979  
M.S. Mechanical Engineering, specialty in design of heavy industry and foundry machinery, 1975  
B.Sc. Mechanical Design, 1972. All degrees obtained at University of Mining and Metallurgy, Krakow, Poland.  
Dr. Ziernicki has attended a number of additional technical seminars on biomechanics, manufacturing technology, vibrations, and vehicle accident reconstruction including Traffic Institute, Northwestern University, Evanston, Illinois.

## REGISTRATION:

Dr. Ziernicki is a Registered Professional Engineer in the States of Alabama, California, Colorado, Florida, Kansas, Texas and Wyoming.  
Dr. Ziernicki is certified by the National Council of Examiners for Engineering and Surveying; Certification No. 30881.  
Dr. Ziernicki is Board Certified Diplomate in Forensic Engineering by the National Academy of Forensic Engineers.

## EXPERIENCE:

Principal Engineer 1994 to present, Knott Laboratory, LLC, Centennial, Colorado President and CEO, Knott Laboratory, LLC, 1994 through 2019; Senior Consultant, Knott Laboratory, Inc., 1984-1994; Manager of Mechanical Engineering, Over-Lowe Company, Denver, Colorado, 1981-1984; Manager of Research and Development Group, Institute of Technology, Krakow, Poland, 1980-1981; Assistant Professor, Institute of Vibrations and Acoustics, University of Mining and Metallurgy, Krakow, Poland, 1975-1980.

## ENGINEERING AND DESIGN:

Dr. Ziernicki taught mechanics, stress analysis, strength of materials, and vibrations at the Institute of Vibrations and Acoustics. While Manager of the Research and Development Group in Krakow, he developed techniques for dynamic modeling, analysis of vibrations, and optimization of mechanical systems. He was actively involved in the modeling of engine-gearbox systems and vehicle suspensions, and in pneumatic tire testing. As Manager of Mechanical Engineering with Over-Lowe, Dr. Ziernicki was in charge of mechanical design, dynamic analysis, and testing of product lines including engine generator sets, transport carriers, trailers, portable lighting equipment, pneumatic towers, and light construction equipment. He prepared technical proposals for the Department of Defense in the areas of torsional and transverse vibrations, rotor balancing, noise control, machine design, dynamic modeling, tolerance analysis, and testing. Currently with Knott Laboratory, Dr. Ziernicki is consulting in the areas of patent and trade secret issues related to mechanical engineering.

## ACCIDENT RECONSTRUCTION:

Dr. Ziernicki has evaluated several thousand industrial and vehicular accidents. He conducts and directs investigations of vehicular accidents, which include automobiles, tractor-trailers, buses, motorcycles, bicycles, and pedestrians. He is very familiar with Federal Motor Carrier Safety Regulations (FMCSR). He also consults on industrial accidents and machinery failures and machine safety (including cranes, forklifts, skid steers, wood chippers, balers, other industrial and construction equipment). In safety analysis he applies industry safety standards and regulations including Occupational Safety and Health Administration (OSHA), American National Standards Institute (ANSI), International Organization for Standardization (ISO,) and Society of Automotive Engineers (SAE) and more. Dr. Ziernicki performed research and field investigations for the National Highway Traffic Safety Administration (NHTSA) as an investigator and team member for NHTSA's Crash Injury Research and Engineering Network (CIREN), which is comprised of engineers and trauma doctors. He investigated high profile motor vehicle accident in Germany on behalf of United States Department of Defense. Dr. Ziernicki investigated an explosion that destroyed a 450 W boiler of a coal-and-gas fired power plant, a \$600 million lawsuit. He investigated the Princess Diana accident in Paris, France and collapse of "Big Blue" crane in Miller Park, Milwaukee, and recently the NASCAR case Kevin Ward, Jr. vs. Tony Stewart.

## ACHIEVEMENTS:

A functional knowledge of manufacturing processes and design interface has allowed him to obtain design patents in the USA and Canada. Dr. Ziernicki has presented papers and lectured at a number of technical conferences in the United States, Canada, Europe, and South America. He has been invited to speak at seminars and conferences including Johns Hopkins University, the SAE International in Sao Paulo, Brazil, ICRASH 2000 in London, and the Five State Judicial Conference where he also served as a faculty member for the Harvard Law School. He has also lectured at the university level including the Technical Institute in Vienna, the University of Mining and Metallurgy in Krakow, Poland, Purdue University in Lafayette, Indiana, the University of Denver, and the University of Colorado at Denver. He is the author of seventy eight publications, primarily in the fields of mechanical engineering, and vehicle accident reconstruction. Dr. Ziernicki is a contributing author of five books on forensic engineering. Dr. Ziernicki's accident reconstruction expertise has been featured over thirty times on local and national television, including Discovery Channel, Dateline NBC, Dr. Oz Show, MSNBC, FOX News, and National Geographic. He was awarded a grant for research in biomechanics by the National Science Foundation. Dr. Ziernicki was a member of several past SAE Standards Committees. Dr. Ziernicki is Past President and past board member for the National Academy of Forensic Engineers and also serves on Committees for the organization. Dr. Ziernicki received an award in 2012 in Appreciation of Distinguished Leadership as National Academy of Forensic Engineers President. In 2015, he received the prestigious award for Manager of the Year from the National Society of Professional Engineers-Colorado (NSPE-CO). In 2016, he received an award for his commitment with APITLA to promote the mission of "Putting the Brakes on Unsafe Trucking Companies." Dr. Ziernicki was awarded the 2016 Private Sector Project of the Year for its "Advanced Forensic Engineering Analysis of a Shooting Incident" project, by the National Society of Professional Engineers-Colorado (NSPE-CO). Dr. Ziernicki was awarded the NAFE Best Technical Conference Presentation Award at the 2019 NAFE Summer Conference in Denver CO.

## EXPERT TESTIMONY:

As a result of his investigations, Dr. Ziernicki has testified in court as an expert witness in a few hundred cases and was deposed over 500 times. He works as an expert witness for clients such as US Department of Justice, US Department of Defense, State of Colorado Attorney General's Office, District Attorneys, and Public Defenders.

## PROFESSIONAL AFFILIATIONS:

Dr. Ziernicki is a fellow or member of the following technical and professional societies:

NAFE	-	National Academy of Forensic Engineers; -Fellow & past President	SAE	-	Society of Automotive Engineers
NSPE	-	National Society of Professional Engineers	ASME	-	American Society of Mechanical Engineers
PEC	-	Professional Engineers of Colorado	SEM	-	Society for Experimental Mechanics
NAPARS	-	National Association of Professional Accident Reconstruction	SME	-	Society of Manufacturing Engineers



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