



KEVIN C. BREEN
PRINCIPAL, DIRECTOR OF MARINE AND AUTOMOTIVE RESEARCH

kcbreen@engsys.com

Mr. Breen is a Managing Principal and Director of Marine and Automotive Research for Engineering Systems Inc. (ESI). For more than 35 years, Mr. Breen has been actively involved in the analysis of transportation equipment, recreational equipment, vehicle accidents and injuries, product performance analysis and testing, human factors studies, risk analysis and research.

Included in this experience have been studies relating to vehicles/equipment handling characteristics, crash performance, recreational product design and performance, component analysis, warning/communication and novice/human factors research. He has been actively involved in testing, research, and the development of standards for watercraft and special purpose vehicles. The results of these studies have been presented in regulatory proceedings as well as litigation proceedings in the U.S. and abroad.

Areas of Specialization

- Accident/Injury Analysis
- Human Factors
- Design Performance Analysis
- Recreational Product Design/Performance
- Materials Analysis
- Failure Analysis
- Risk Analysis

Education

- M.S., Industrial Engineering. Midwest College of Engineering. 1984
- B.S., Engineering. Department of Materials Engineering. University of Illinois. 1978

Licensed Professional Engineer (P.E.)

State of Wisconsin License No. E32092

February 2020

Professional Affiliations/Honors

Society of Automotive Engineers (SAE)

Special Purpose Vehicle Committee, Member, 1988 – present
Special Purpose Vehicle Committee, Chairman, 1988 – 2003
Specialized Vehicle and Equipment Division, Executive Committee, 1988 – 2003
Personal Watercraft Committee, Member
Motorcycle Committee, Reviewing Member

Human Factors and Ergonomics Society (HFES)

Association for the Advancement of Automotive Medicine (AAAM)

National Society of Professional Engineers (NSPE)

Florida Engineering Society (FES)

Society of Accident Reconstruction (SOAR)

American Boat & Yacht Council (ABYC)

Positions Held

Engineering Systems Inc., Ft. Myers, Florida

Principal, 2001 – Present
Director, Marine & Automotive Research, 2001 – Present

K.C. Breen & Associates, Inc., Ft. Myers, Florida

Principal, 1989 – 2001

Packer Engineering – Southeast Inc., Ft. Myers, Florida

Vice President, 1988 – 1989

Packer Engineering – Troy Inc., Troy, Michigan

Director of Technical Services, 1984 – 1986
Vice President, 1986 – 1988

Packer Engineering, Naperville, Illinois

Laboratory Technologist/Supervisor, 1976 – 1978
Staff Consultant, 1978 – 1984

Wisconsin Steel Division, International Harvester Company, Chicago, Illinois

Quality Assurance, 1975 – 1976

Classroom Teaching Experience

Materials Failure Analysis

Instructor teaching undergraduate course in materials performance and design use of materials; Triton College.

Accident Reconstruction

Invited Lecturer to Technical Societies and Law Enforcement Groups regarding various accident reconstruction techniques including photogrammetry, special purpose vehicle and marine vehicles.

Technical Reports

Mr. Breen has conducted investigations and research resulting in numerous technical reports and addressing various topics, including:

- Driver/Operator Behavior Studies
- Accident Reconstruction
- Novice Driver Operation of Recreation Products
- Motorcycle Design and Operation
- Vehicle Control Systems
- Motorcycle Manuals and Safety Information Development
- Reaction/Response Time Studies
- Watersport Dynamics
- Vehicle Stability & Handling
- Vessel Stability & Handling
- Materials Failure Analysis
- Crashworthiness
- Occupant Restraints/Protection
- Crash Testing
- Recreational Product Accident Analysis and Design
- Recreational Amusement/WaterSports Evaluations
- Human Factors Analysis of Sports Equipment Use

Continued Education

Symposium on Traffic Safety (IPTM),
Orlando, FL May 2018

Recreational Boating Safety, National Boating Safety Advisory Council (BSAC),
Arlington, VA, October 2017

World Reconstruction Exposition (WREX),
Orlando, Florida, May 2016

Restraints/Occupants in Vehicular Crashes (BRC),
Nashville, TN, November 2015

How to Improve Scene Investigation, Leica Geosystems,
October 2014

Ergonomics/Human Factors in Lift Truck Design, ASSE,
Central Florida, May 2014

Effects of Helmets on Kinematics and Injury Potential, SFIA,
Phoenix, Arizona, April 2014

Occupant and Vehicle Kinematics in Rollovers, Society of Automotive Engineers,
Ft. Myers, Florida, January 2009

Investigation of Commercial Vehicle Accidents, ITPM Adjunction Faculty/ESI Workshop,
Ft. Myers, Florida, September 2007

Vehicle Accident Reconstruction Methods, Society of Automotive Engineers,
Ft. Myers, Florida, October 2006

Public Forum on Motorcycle Safety, National Transportation Safety Board,
Washington, D.C., September 2006

Technical Digital Photography,
Ft. Myers, Florida, 2006

Forensic Analysis of Medical Records in Injury: Biomechanics and Accident Reconstruction
Society of Automotive Engineers, Troy, Michigan, August 2005

Passenger Vehicle Rollover TOPTEC; Causes, Prevention, and Injury Prevalence, Society of
Automotive Engineers, Phoenix, Arizona, April 2002

Biomechanics of Impact Trauma, Association for Advancement of Automotive Medicine
Captivea, Florida, August 1998

Marine Accident Investigation, American Boat & Yacht Council,
Ft. Lauderdale, Florida, April 1998

The Nikon School of Photography,
Miami, Florida, May 1996

Accidents, American Boat & Yacht Council,
Orlando, Florida, July 1995

Accident Investigation Seminar, American Boat & Yacht Council,
Tampa, Florida, January 1992

Crash Reconstruction: Purpose and Principles, American Association for Automotive Medicine
Captiva, Florida, December 1990

Special Problems in Accident Reconstruction, IPTM – University of North Florida,
Jacksonville, Florida, April 1984

Motorcycle Safety, MSF,
Northern Illinois University, June 1983

High Performance Driving Course, Bondurant School of Performance Driving,
October 1982

Non-Destructive Evaluation,
University of Illinois, Fall 1982

Failure Mechanisms I & II,
University of Illinois, Winter-Spring 1981

Mechanism Design,
Midwest College of Engineering, Fall 1980

Analytical Techniques, Chicago Western American Society for Metals,
Fall 1979

Corrosion - Principles and Prevention, Chicago Western American Society for Metals
Fall 1978

Publications/Presentations

“Micro-Mobility Transportation Status Update”

CLM Presentation

June 2019

“Technical Review; CPSC All-Terrain Vehicle Research”

CPSC Presentation

June 2019

“Recreational Boating; Excessive Speed Research”

ABYC Research Report

December 2016

“Applications of Failure Analysis Techniques in ATV Accident Investigation”

Materials Science & Technology (MS&T 2015), ASM International
October, 2015

“The Role of Investigation, Moving Toward Accident-Free Operations”

The Society of Naval Architects and Marine Engineers (SNAME)
Marine Technology, July 2015

“Risk Acceptance and Root Cause Analysis for Recreational Products and Activities”

Sports & Fitness Industry Association (SFIA) Summit
Phoenix, Arizona, April 2014

“Commercial Vehicle Skid Distance Testing and Analysis”

Society of Automotive Engineers 2013-01-0771

“The Sinking of the Ethan Allen: Accident Reconstruction and Human Factors Methodology”

The Society of Naval Architects and Marine Engineers (SNAME)
National Harbor, Maryland, March, 2012

“Recreational Products- Accident Investigation/Reconstruction”

Las Vegas, Nevada, February 2012

“Analyzing the Risk of Daily Life-Revisited for Consumer and Recreational Products”

International Legal Guide, Global Legal Group, May 2011

“Personal Watercraft-Safety & Regulatory Review and Update”

State of Israel-Ministry of Transport
Haifa, Israel, December 2008

“Comparing Driver Descriptions of Turning to Measures of Off-Road Vehicle Performance: Implications for Driving Instruction and Accident Investigation”

Proceedings of the XX Annual International
Occupational Ergonomics and Safety Conference
Chicago, Illinois, June 2008

“Using GPS based Data Acquisition in Forensic Accident Reconstruction”

Collision-The International Compendium for Crash Research, Fall 2007

“Analysis of Occupant Kinematics During a Commercial Vehicle/Passenger Vehicle Crash Test”

IPTM-University of North Florida
Jacksonville, Florida, April 2007

“The Investigation and Analysis of Off-Road Recreational Vehicle Accidents”

IPTM – University of North Florida
Jacksonville, Florida, April 2006

“Inquiry into the Cause of Fatality and Injury on Victorian Farms”

Rural and Regional Services Development Committee
Parliament of Victoria, Melbourne, Australia, January 2004
Final Report, August 2005

“College Baseball Pitcher Response Time”

Massachusetts Interscholastic Athletic Association
Directors Task Force Meeting,
Franklin, Massachusetts, January 2003

“Staged Watercraft Collision Demonstrations”

USCG/Underwriter’s Laboratory
Lake X, Florida, December 1999

“Personal Watercraft-Off-Throttle Steering Research”

National Association of State Boating Law Administrators
Ft. Myers, Florida, March 1999

“Failure Analysis / Accident Analysis Motor-Sport Case Study”

ASM International
Indianapolis, Indiana, September 1997

“Four-Wheeled ATVs, Trends in the 1990's with Focus on Youth Safety”

Consumer Product Safety Commission
Chairman’s Forum on ATVs, Washington, D.C., May 1997

“Developments in Alternate Marine Transportation”

Society of Automotive Engineers
Costa Mesa, California, August 1995

“Investigation and Analysis of Marine Accidents”

Society of Automotive Engineers
Detroit, Michigan, March 1993
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“Operator and Environmental Factors Associated with Off-Road Equipment Risk”

Society of Automotive Engineers
Milwaukee, Wisconsin, September 1999

"Design and Accident Countermeasures Related to ATVs"

National Association of Attorney Generals
Los Angeles, California, November 1987

"The Application of Photogrammetry to Accident Reconstruction"

Society of Automotive Engineers
Dearborn, Michigan, September 1986

"An Overview of the Design and Operation of ATVs"

Society of Automotive Engineers
Detroit, Michigan, February 1986

"Brief Technical Discussion of the All-Terrain Vehicle"

Consumer Product Safety Commission
Dallas, Texas, June 1985

"Accident Documentation Using Stereo and Photogrammetric Techniques"

Illinois Association of Traffic Accident Reconstruction
Naperville, Illinois, September 1984

"Driver Performance Considerations in Accident Avoidance Steering Maneuvers"

Master's Degree Research Project, Spring 1983

"Yeadon/NHTSA Wheel Analysis"

National Highway Traffic Safety Administration
Washington, D.C., 1982

"Driver Behavior Study-Transmission Shift Mechanism Migration"

National Highway Traffic Safety Administration
Washington, D.C., 1980

"Accident Investigation Techniques"

Inter-Micro
Chicago, Illinois, February 1979

Miscellaneous

Licensed Motorcycle Operator
Certified Scuba Diver (Professional Association of Diving Instructors)
Water Safety Instructor (American Red Cross)
Boating Operation Certificate (United States Power Squadron)
Recreational Marine License (Queensland Australia)
ATV Rider Certificate (Specialty Vehicle Institute of America)
Vessel Livery Operators Certification (Florida)