MICHAEL L. ROMANSKY, PH.D., J.D., CMI-V, FACFEI

EDUCATION

Duquesne University: **Doctor of Jurisprudence (J.D.), Law.** (1985)

West Virginia University: **Doctorate (Ph.D.) in Engineering**; Multi-disciplinary engineering program with study and training, and oral and written testing and examinations in **five (5) areas of expertise**, which include: **(1)** Industrial Engineering and Ergonomics (including Workplace Ergonomics); **(2)** Advanced Human Factors Engineering and Biomechanics, Medical Physics and Injury Mechanics, and Basic Medical Sciences (two years in the School of Medicine as a Ph.D. student in Engineering); **(3)** Occupational Safety and Health (OSHA regulations) and Workplace Safety, and Accident and Injury Epidemiology; **(4)** Theoretical and Applied Statistics, and **(5)** Civil Engineering (Transportation and Traffic Systems Design and Construction). (1978)

West Virginia University: **Master of Science (M.S.) in Industrial Engineering**: Human Factors Engineering, Ergonomics, Manufacturing Operations and Systems Design, Manual and Powered Materials Handling, and Workplace Safety Engineering. (1975)

West Virginia University: **Bachelor of Science (B.S.) in Industrial Engineering**.: Traditional Engineering Curriculum. (1969)

HONORS AND AWARDS

- Tau Beta Pi, National Engineering Honorary
- Chi Epsilon, National Civil Engineering Honorary
- Sigma Xi, National Research Honorary
- Presidential Scholar - President's List for Academic Superiority (4.0 GPA)
- Dean's List for Academic Excellence
- National Science Foundation Fellowship for graduate research.

CERTIFICATION

- The American College of Forensic Examiners: Board Certified Medical Investigator (Injury Mechanism, Mechanics, and Causation), CMI-V, Certification No.: 20809, Level 5 (Highest Level), By Written Examination.

PROFESSIONAL ORGANIZATIONS - CURRENT ACTIVE MEMBERSHIP AND PARTICIPATION

- Human Factors Society, Member
- American Academy of Forensic Sciences, Member
- The American College of Forensic Examiners:
  - Fellow Status of The American Board of Engineering and Technology
  - Fellow Status of The American College of Forensic Examiners
- National Academy of Forensic Engineers, No. 239-C
- European Society of Biomechanics, Member
- Gait and Clinical Movement Analysis Society, Member
- International Society for Posture and Gait Research, Member
- The American College of Sports Medicine, Member
- International Research Council on the Biokinetics of Impacts, Member
- Association for the Advancement of Automotive Medicine, Member
- American Society of Mechanical Engineers, Member
- Society of Automotive Engineers, Member
- The American Society of Safety Engineers, Member
- Society of Engineering Science, Member
- National Association of Traffic Accident Reconstructionists and Investigators, Member

COURT EXPERIENCE

- Qualified as an expert witness in State and Federal Courts, and Workers' Compensation Hearings in Forensic Human Factors Engineering; Ergonomics; Forensic Biomechanics; Injury Mechanism, Mechanics and Causation; Occupational Safety and Health; Accident and Injury Epidemiology; Motor Vehicle Occupant Kinematics and Dynamics; Same Level Falls (slip, trip, stumble, tumble, and crumple); Falls from Elevation; and Workplace and Non- Workplace Accident Reconstruction and Causation.

CONTINUING PROFESSIONAL EDUCATION COURSES AND SPECIALIZED TRAINING

- **Accidental Injury: Causation, Biomechanics, and Prevention.**
  University of California, San Diego, School of Medicine, 1995.

- **Collision Reconstruction for the Medical Practitioner.**
  Low Speed (Rear End Impacts)Accident Reconstruction Texas A&M University, Texas Engineering Extension Service, 1999.

- **Biomechanics of Impact Trauma.**
  University of Maryland, School of Medicine, and The International Research Council on the Biomechanics of Impact, 1999.

- **Clinical and Biomechanical Aspects of Lower Extremity Injuries.**
  Wayne State University, School of Medicine and College of Engineering, 2000.

- **Basic Forensic Pathology; Bodily Injury Causation, Mechanics, and Mechanisms - Tolerance of Soft Tissue and Skeletal Structures.**
  Department of Medical Education, Armed Forces Institute of Pathology, 2003.

- **Forensic Pathology for Identifying Causation, Mechanics, and Mechanisms of Injury and Subsequent Death (Accidental and Homicide.)**
  American College of Forensic Examiners, 2003.

- **Occupant and Vehicle Kinematics in Rollovers**.
  Society of Automotive Engineers, 2004.

- **Injuries, Anatomy, Biomechanics, and Federal Regulations in Accident Reconstruction.**
  Society of Automotive Engineers, 2005.

- **Forensic Analysis of Medical Records in Injury Biomechanics and Accident Reconstruction.**
  Society of Automotive Engineers, 2005.

- **Ergonomics, Human Factors, and Biomechanics for Examining and Analyzing Workplace Safety and Health Issues, and Worker Accidents and Injuries (Mechanics and Mechanisms); includes accidental slips, trips, and falls, along with stair system falls, in the workplace.**
  Harvard University, 2007.

- **Kinematics, Biomechanics, Injury Mechanics and Mechanism, and Human Anatomy in Accident Reconstruction.**
  North Coast Polytechnic Institute, 2007.

INVESTIGATE AND ANALYZE INJURIES AND INJURY MECHANISM, MECHANICS, AND CAUSATION IN WORKPLACE AND NON-WORKPLACE ACCIDENTS AND MOTOR VEHICLE COLLISIONS.

Apply principles of physics, engineering, anatomy, physiology, biomechanics, human factors, and ergonomics to determine injury mechanism, mechanics, and causation.

Assess Medically Diagnosed Injuries:

- Skull fractures;
- Cervical, thoracic, lumbar, and lumbosacral spine injuries involving the vertebra and intervertebral discs;
- Abdominal organ injuries; and
- Musculoskeletal injuries involving the joints (shoulder, elbow, wrist, hip, and knee), soft tissues (muscles, tendons, ligaments, articular discs, and cartilage), and bony fractures.

Determine injury mechanism, mechanics, and causation with respect to displayed voluntary/involuntary body kinematics:

- The manner and means of soft tissue and bony failure and injury;
- Type of loading that occurs: inertial loading (dynamic overload) and kinetic loading (contact or impact)
- Direction, point of application, and magnitude of loading;
- Causal relationship regarding voluntary/involuntary body kinematics and injury pattern with a particular condition, circumstance, or event;
- Effects of pre-existing medical conditions with respect to accident and injury causation;
- Use of injury maxim with respect to accident and injury causation, to-wit: Injuries that occurred, but were not expected, compared and contrasted to injuries that were expected, but did not occur; and
- Workplace ergonomic, musculoskeletal stressors.

Examination of events and incidents from voluntary/involuntary body kinematics that result in injuries:

- Motor vehicle collisions;
- Occupational and workplace accidents;
- Non-workplace accidents;
- Same level fall accidents: slip, trip, stumble, tumble, crumple, and no obvious perturbation (NOP);
- Stair system accidents; and
- Falls from elevation accidents.

RELEVANT PROFESSIONAL EXPERIENCE

Human Factors Engineering, Ergonomics, Biomechanics, Injury Causation, Mechanics and Mechanism, and Accident Reconstruction/Causation:

- Performed investigations, analysis and reconstructions of workplace (industrial/manufacturing plants and construction sites) and nonworkplace accidents involving, among other things, machines, machine guarding, operations and processes, slips/trips/falls from elevation and on

same level, ladders, scaffolds, ramps and stairways to determine accident causation and mechanism of injury; performed impact injury and trauma analysis using human factors, medical physics and biomechanics.

- Performed investigations, analysis and reconstructions of motor vehicle collisions using principles of human factors engineering with respect to issues that included perception-response time interval, conspicuity, driving maneuvers, vision, and highway safety; performed investigations, analysis and reconstructions of workplace accidents using principles of human factors engineering and ergonomics, man-machine interface and compatibility, environmental conditions, and work space layout and design.

- Performed kinematic and biomechanic analysis (includes injury biomechanics) of restrained and unrestrained occupants in motor vehicle accidents to determine injury causation and mechanisms and threshold limits for injury, particularly when seat belt usage is at issue; analyzed and reconstructed the "second" collision (between occupant and vehicle interior) and "third" collision (between internal body organs and skeletal framework, including the brain and skull) in low and high-speed vehicular accidents; performed injury analysis and reconstructions of vehicle/pedestrian accidents.

- Performed reconstructions of occupant kinematics and dynamics for investigating temporomandibular joint ("TMJ") injuries and cervical ("whiplash"), thoracic and lumbar spine injuries in low velocity rear-end vehicular collisions.

- Performed investigations, analysis and reconstructions of infant and child restraint seat usage and performance (with and without inserts) in motor vehicle accidents.

- Carried out evaluations and analysis of workers and job tasks in the workplace using principles of human factors engineering, ergonomic design, and biomechanics.

- Conducted employee safety behavior studies and investigations in an effort to develop more effective safety training programs for industry use.

- Conducted investigations on manual material handling lifting activities to investigate the proximate cause and prevention of lumbosacral and musculoskeletal injuries in the workplace, and examined skeletal and nonskeletal (soft tissue) injuries and tolerance to loads and forces.

- Performed biomedical and human factors investigations of psychophysiological stress and fatigue in human performance functions.

- Performed investigations into the practical problems of preventing defects and deficiencies in the design of man-machine systems, consumer products and workplace environments.

- Performed investigations and analysis of failure to warn issues and the adequacy of warnings, labels and instructions.

- Performed product liability and reliability investigations, analysis and reconstructions.

- Training and direct work experience in man-machine systems and design which include information transmission, display control compatibility, stimulus (perception)-response characterization, psychomotor performance, and work station layout impacting human performance.

- Responsible for Research Laboratory for biomechanics, ergonomics, and human factors investigations pertaining to workplace safety issues in the Division of Safety Research at the National Institute for Occupational Safety and Health ("NIOSH").

- Performed surrogate studies as an integral part of the reconstruction and analysis of workplace accidents and motor vehicle collisions.

Occupational Safety and Health/Accident and Injury Epidemiology:

- Developed, implemented and managed occupational safety and health compliance programs; conducted audit programs for OSHA compliance; performed facilities inspections, accident and injury investigations and reconstructions; developed safety training documents and accident prevention programs for industry using principles of systems safety design and safety engineering; directed the Federal (NIOSH) investigative efforts into determining the proximate cause of the parabolic cooling tower structural failure and scaffolding collapse killing 51 construction workers at the Willow Island Power Plant in West Virginia in 1978.

- Performed investigations and analysis of occupational safety and health hazards in the workplace, i.e., mechanical and physical; investigated and analyzed workplace tasks (for compatibility with human performance limitations), cumulative trauma disorders (musculoskeletal diseases of the upper limbs) and manual materials handling activities along with application of NIOSH lifting guidelines to reduce the risk of workplace injuries.

- Possess extensive working knowledge of Federal Occupational Safety and Health Administration ("OSHA") standards and regulations, i.e., General Industry Standards (29CFR1910), and Construction Standards (29CFR1926); and the application of national consensus standards and code compliance, i.e., ANSI, ASME, Life Safety Code, ADA, ASTM, SAE, and CPSC.

- Developed risk preventative techniques based upon investigation and documentation of potential liability claims.

- Training and work experience performing hazard recognition, analysis and control activities.

- Directed research projects and prepared drafts of proposed specifications for OSHA regulations.

- Developed, initiated, managed and administered technical research projects involving issues of workplace accident and injury epidemiology, personal injury mechanisms, human factors engineering, ergonomics, biomechanics, and safety engineering.

RELATED / RELEVANT WORK HISTORY

FORCON International Corporation (1992-present) - Atlanta, Georgia

Forensic and Non-forensic Consultant - Occupational Safety and Health; OSHA Regulations (1910 and 1926); Voluntary Consensus Standards; Workplace and Non-workplace Accident Reconstruction and Injury Analysis; Construction and Manufacturing Accidents; Motor Vehicle Collisions Involving "Second and Third Collision" Reconstructions; Human Kinematics; Injury Causation, Mechanics, and Mechanism; Human Factors Engineering; Perception-Response Analysis in the Driving and Non-driving Tasks; Ergonomics; Quantitative and Qualitative Biomechanics; Accident and Injury Epidemiology; Gait Analysis; Same Level Falls; Falls From Elevation; Stair System Falls; and Safety Engineering.

Southern Polytechnic State University (1992-1993) - Marietta, Georgia - (Formerly an extension of Georgia Tech)

Adjunct Assistant Professor - Occupational Safety and Health, with subject areas that involved Forensic Human Factors Engineering; Ergonomics; Forensic Biomechanics; Accident and Injury Causation; Injury Mechanism and Mechanics; Human Injury Tolerance; OSHA regulations; and Workplace Safety Engineering. (Included same level falls, falls from elevation, and stair system falls.)

ED-E Development Company, Inc. (1986-1988; part time in 1982-1985) - Morgantown, West Virginia

Engineer - Operations (Construction, Coal Mining, Quarrying and Oil/Gas - Development), Safety Engineering and Risk Management, and Surface and Mineral Leasing.

Verna Engineering, Inc. (1985-1986) - Pittsburgh, Pennsylvania

Forensic Consultant - Occupational Safety and Health; OSHA Regulations (1910 and 1926); Voluntary Consensus Standards; Accident Reconstruction; Occupant Kinematics in Motor Vehicle Collisions; Injury Causation and Mechanics; Human Factors Engineering; Biomechanics; and Safety Engineering.

National Institute for Occupational Safety and Health (NIOSH) (1978-1981) - Morgantown, West Virginia

Research Safety Engineer - Accident and Injury Epidemiology; Accident Reconstruction in

Construction and Manufacturing Operations; Biomechanics; Accident and Injury Causation; Injury Mechanisms and Mechanics; Human Injury Tolerance; Human Factors Engineering; and Workplace Ergonomics. Performed research work and developed drafts of proposed standards for consideration in proposed OSHA safety and health standards. (Areas of investigation included, among others, same level falls, falls on stair systems, falls from elevation, manual materials handling and lifting tasks, powered materials handling tasks, and forklift truck operations.)

Frederic R. Harris, Inc. (1977-1978) - Sanford, Connecticut and Morgantown, West Virginia
Consulting Engineering and Construction; Engineering Construction Inspector (Building and Trades, Excavations, Trenching and Foundations, Elevated Guideways Erection, and Heavy Construction.)

Wheeling-Pittsburgh Steel Company (1969-1970) - Monessen and Allenport, Pennsylvania
Industrial Engineer-Manufacturing and Production Operations (Raw Steel Manufacture, Hot and Cold Rolling of Flat Sheet Products, and Tubular Steel Products).

McGinley and McGinley (part time 1982-1986) - Morgantown, West Virginia
Law Clerk - Case Preparation, Legal Research, Contracts, and Coal, Oil, and Gas Law.

West Virginia University (1973-1981) - Morgantown, West Virginia
Graduate Assistant, Research Assistant, and Adjunct Assistant Professor in the College of Engineering; subject areas involved: Human Factors Engineering and Ergonomics; Biomechanics; Accident and Injury Epidemiology and Analysis; and Safety Engineering.

MILITARY SERVICE

Lt. Cmdr., O4, Commissioned Corps Officer, U.S.P.H.S. (U.S. Navy), Centers for Disease Control, NIOSH, Researcher, Accident and Injury Epidemiology and Accident Analysis and Reconstruction, 1978-1981; Reserves 1981-present.