



## **Cynthia M. Rando, MS, MBA, CHFP**

Human Factors Engineering & Human Safety Expert  
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Sophic Synergistics, LLC- Founder & CEO

### **Professional Summary**

Cynthia M. Rando, MS, MBA, CHFP, is a Certified Human Factors Professional with more than 20 years of experience in human factors engineering, human safety, and system risk mitigation across complex operational environments. She is the Founder and Chief Executive Officer of Sophic Synergistics, LLC, a human factors engineering and human-centered design consultancy. Ms. Rando previously held human factors engineering roles supporting human spaceflight programs at the National Aeronautics and Space Administration Johnson Space Center.

Ms. Rando previously served for eight years as a Director of the Board of Certification in Professional Ergonomics, including service as Vice President. BCPE is the certifying body responsible for the Certified Human Factors Professional credential.

Her professional work focuses on evaluating the interaction between humans, products, environments, and systems, including issues related to product design safety, warnings and instructions, accident causation, human perception and performance, and risk mitigation. She has been retained as a human factors engineering expert in litigation involving product liability, transportation incidents, slips, trips and falls, scaffolding and industrial equipment incidents, manufacturing environments, warnings and instructions, and device usability.

### **Professional Areas of Practice**

- Human Factors Engineering
- Human Safety and Hazard Mitigation
- Product Design and Usability
- Warnings and Instructions
- Human Perception and Performance
- Driver Behavior and Transportation Safety
- Workload and Human Error Analysis
- Accident Investigation and Root Cause Analysis
- Risk Assessment and Safety Engineering
- Slips, Trips, and Falls
- Medical Device Usability



## **Standards and Technical Frameworks**

Representative standards and guidance applied in professional work include but not limited to:

### Human Factors and Human-Centered Design

ISO 9241 Series – Ergonomics of Human-System Interaction

### Risk Assessment and Safety Engineering

ISO 12100 – Safety of Machinery: Risk Assessment and Risk Reduction

ISO 31000 – Risk Management Guidelines

ISO 14971 - Risk management framework

### Human Systems Integration and System Safety

MIL-STD-1472 – Human Engineering

MIL-STD-882 – System Safety

NASA STD. 3000/3001 and SSP 50005

### Warnings and Product Safety Communication

ANSI Z535 Series -Safety Colors, Signs, Symbols, and Product Safety Information

### Medical Device Human Factors

FDA Human Factors Engineering Guidance for Medical Devices

AAMI Human Factors Guidance/HE 75

ISO 62366-1- Usability Engineering for Devices

## **Professional Experience**

Sophic Synergistics, LLC - Houston, Texas

Founder & Chief Executive Officer | 2014 – Present

- Human factors engineering analysis and product usability evaluation
- Human performance and perception analysis
- Accident investigation and human error analysis
- Risk mitigation and safety design
- Expert witness consulting and litigation support

NASA Johnson Space Center Programs

Wyle Integrated Science and Engineering | Innovation Strategist | 2010 - 2013

MEI Technologies, Inc. | Senior Human Factors Engineer | 2004 – 2010

- Human systems integration and crew interface evaluation
- Human performance and operational risk assessment
- Development and interpretation of human factors requirements
- Safety engineering and hazard mitigation analysis
- Innovation and crowdsourcing strategist



## **Representative Professional Engagements**

- Aerospace and Space Systems

Human factors engineering and human systems integration support for human spaceflight systems including crew interface design, procedural development, habitability evaluation, and operational risk mitigation.

- Medical Devices and Digital Health Technologies

Human factors evaluation supporting the design and usability of medical devices and digital health platforms, including user interaction analysis and safety risk mitigation.

- Transportation and Automotive Systems

Human factors evaluation of driver perception, reaction time, vehicle interfaces, warning systems, and accident causation.

- Industrial and Workplace Systems

Human performance analysis related to workplace environments, equipment design, task demands, and operational safety.

- Consumer Products and Product Safety

Evaluation of consumer product usability, warnings and instructions, and foreseeable user interaction with products.

## **Academic Experience**

Adjunct Professor - Ergonomics, University of Houston–Clear Lake

- Human Factors Engineering
- Biomechanics
- Anthropometry
- Workplace ergonomics and environmental stressors

## **Education**

- MBA - Northeastern University
- MS - Applied Psychology (Human Factors Engineering), Clemson University
- BS - Psychology, Clemson University

## **Professional Certification**

Certified Human Factors Professional (CHFP) - Board of Certification in Professional Ergonomics



### **Professional Leadership**

- Vice President and Director (~8 yrs.) - Board of Certification in Professional Ergonomics
- Human Factors Advisor - Texas Medical Center Innovation Incubator
- Founding Member - Texas Committee for Autonomous Systems

### **Selected Publications and Presentations** (Full List Available on Request)

- Better Business by Design: Introduction to the SOPHIC Conceptual Model - HFES Proceedings (2017)
- Use of Cautions and Warnings within International Space Station Procedures - HFES Proceedings (2007)
- Open Collaboration: A Problem Solving Strategy That is Redefining NASA's Innovative Spirit – IAC Proceedings (2011)
- Investment in Open Innovation Service Providers – IAC Proceedings (2010)

### **Honors and Awards** (Full List Available on Request)

- NASA Special Space Flight Achievement Awards
- NASA Group Achievement Award
- NASA Bioastronautics Bravo Award
- NASA Center Director Innovation Award
- NASA GEM Award
- ITAMS Excellence Award