



# Risk engineering for a safer tomorrow.

## OUR MISSION

The Risk Engineering and System Analytics Center (RESA) is an industry-university consortium focused on the next generation of risk analytics and research. It's mission is to improve human resilience through effective risk understanding, communication, management and response by bringing together current industry problems and state-of-the-art research.

## ABOUT THE CENTER

The Risk Engineering and Systematic Center at Clemson University is focused on helping individuals, companies and communities better understand their risk exposure so that they can make informed decisions and promote safety, efficiency and resilience in the face of disaster. The Center was established in 2015 through an endowment by American International Group (AIG), a premier insurance company with US headquarters in New York, NY. Originally established to support property-related risk exposures such as natural catastrophe modelling and property engineering adjuster training, the Center has since grown to focus on all elements of risk mitigation. Today, the Center focuses on five **key thrust areas** of risk-related research including:



### Smart Risk Monitoring

Solving the challenges of real-time risk management through advances in sensor networking and integration, information sharing and intellectual property definition and cyber security.



### Big Data for Risk Analytics

Taking advantage of available data such as geo-sensors, text reports, images and social media using text mining, machine learning, advanced data visualization and other techniques.



### Innovation in Risk

Developing tools to help stakeholders better understand exposures and liabilities through increased risk transparency and real time risk monitoring.



### Advanced Risk Modelling

Better understanding business risk with predictive modelling of natural catastrophes, financial risk, multi-hazard analysis, business interruption and supply chain disruption.



### Reducing Risk through Resilient Communities

Working with communities, governments and regulators to promote risk awareness and resiliency among stakeholders who are directly affected by disaster.

## CENTER OBJECTIVES

# 1

### EDUCATION & TRAINING

RESA is committed to equipping current and future business leaders with fundamental risk management skills. Through Clemson, the Center offers online courses and certificates in risk engineering. The Center also provides live training with access to newly built engineering labs.

# 2

### RESEARCH & SERVICES

RESA maintains a staff of cross-disciplinary researchers, industry experts, and students dedicated to conducting fundamental and applied research. RESA researchers work closely with our industry partners to identify critical and emerging development needs, while leveraging concurrent research efforts within the University.

# 3

### GLOBAL ENGAGEMENT

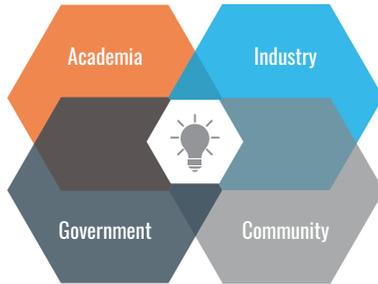
The proliferation of data generation and new techniques for digesting it continues to expand at a nearly exponential pace. To keep abreast of cutting-edge developments in the field, the RESA Center has engaged in collaborative partnerships with leading organizations from across the globe, including Tongji University in Shanghai, China.



# A COLLABORATION SPACE

The elements of risk engineering are everyone's problem. RESA Center engages different stakeholders of risk in an environment that promotes collaboration, learning and development. Progress and innovation in the domain of risk engineering can be found within the nexus of **government, academia, industry and communities.**

Innovation occurs when need, understanding and diversity collide.



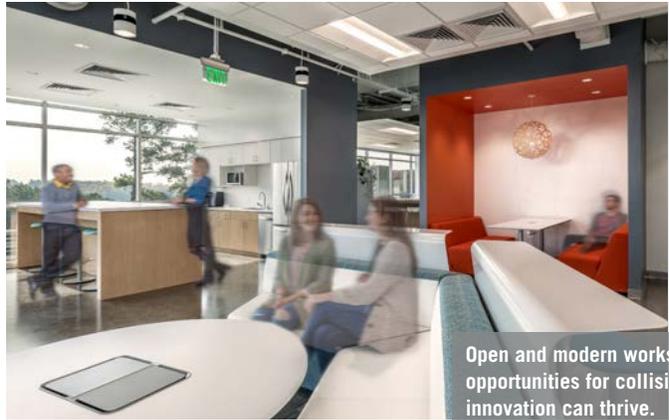
## JOIN US

The RESA Center is seeking collaborative partners to join our efforts toward better understanding, communicating, managing and responding to risk hazards. As a Center partner, you will participate in an active community of researchers, educators, industry experts and public leaders all concentrated on reducing risk improving human resilience. For more information, contact us at:

[RESA@clemson.edu](mailto:RESA@clemson.edu)



The RESA Center is located on the CU-ICAR campus, minutes from the airport and downtown Greenville, SC.



Open and modern workspaces create opportunities for collisions where innovation can thrive.



**Mission:**  
Improving human resilience through effective risk understanding, communication, management, and response.

### RISK UNDERSTANDING

Providing data-informed risk assessments

### RISK COMMUNICATION

Disseminating risk to shareholders and addressing risk perception

### RISK MANAGEMENT

Help stakeholders reduce the damages and impacts resulting from a hazard

### HAZARD RESPONSE

Identify mechanisms and methods for responding to and recovering from a disaster