ABOUT THE CENTER

RESA
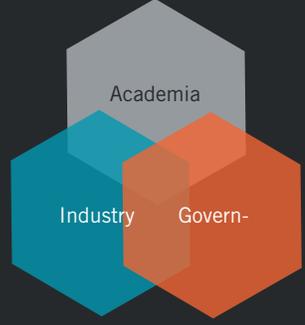
RESA is a premier innovation institution centered on next-generation risk analytics and research.

Innovation happens when new ideas meet real-world applications. At the RESA Center, this is achieved by engaging academia, industry and government organizations to solve current challenges together. We provide a collision space where new ideas in risk research can rapidly evolve to useful innovations in an applied space. This dynamic process for producing innovation is cultivated through new research, continuing education and strategic partnerships.

Academia

Industry   Govern-

Our Recipe:

Research
Education
International Partnerships
Industry Partnerships and Projects

CONTACT US

1 Research Drive
Greenvile, SC 29607
Email: resa@clemson.edu
Phone: 864-656-3200

RISK MANAGEMENT

RESA

Risk Engineering and Systems Analytics Center at Clemson University

CURRENT RESEARCH

Research pursuits at RESA are numerous and varied.

Earthquake Modeling
Utilizing existing open source software, such as OpenQuake, and leveraging the computing power of The Palmetto Cluster, Endowed Chair Dr. James Martin and team are developing a platform for calculating loss estimates due to earthquake damage at an unprecedented level.

Wind and Flood Modeling
Synthesizing historical data and algorithmic predictions, Dr. Weichang Pang and team are generating volumes of projected hurricane paths, storm surge heights, and flooding patterns to produce state of the art natural catastrophe models.

Data Analytics
R-DAT, the RESA Data Analytics Team, has streamlined the data analysis process at production levels. They conduct regular analysis of project data and provide unique and new insights using new methods and visualization techniques.

Virtual Reality Workforce Training
Dr. Kapil Madathil leads efforts in enhancing workforce training by developing realistic virtual reality environments to supplement classroom training for field engineers.

396.7 TERAFLOPS
The Palmetto Cluster is the third fastest super computer at an academic institution in the USA.

700+% DECREASE
in time spent running simulations by leveraging the computing power of the Palmetto Cluster.

100,000 YEARS
and 300+ GBs of hurricane event data generated.

Dr. James Martin
Bob Benmosche Endowed Chair

EDUCATION

Preparing the next generation of innovators.

A key premise in the RESA mission to better understand risk is the continuing development of new researchers, engineers and managers. The Glenn Department of Civil Engineering is developing a stackable certificate program to better equip working professionals with the skills needed to contribute in this space. Currently, we offer courses and an evolving portfolio of graduate programs. All classes are offered completely online, providing flexibility and mobility for the working student. Our world class faculty are highly engaged and only an email or phone call away.

Enterprise Faculty
A unique component to the RESA Center is the streamlined engagement of industry with our research and educational objectives. Enterprise Faculty are highly accomplished working professionals who have achieved a significant degree of mastery or accomplishment in their respective fields and who are interested in formally engaging with the research, educational, and collaborative missions of the Center. These professionals contribute to our online courses though regular guest lectures and case studies, adding real world flavor and application to the program.

Certificate in Risk Engineering
Our foundational graduate certificate in risk engineering is designed to equip students with the fundamentals of risk quantification, examining relevant elements such as human factors, natural disasters, and industry disruptions.

Future offerings will target the mitigation of risk using data mining and decision modeling, as well as the communication and interpretation of risk through risk managment techniques.

With partners and cohorts on 6 continents, RESA is striving to create a global network. The countries highlighted below are home to current students.

The RESA 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