

TIME & CHANGE:

THE FUTURE OF RISK

ANNUAL REPORT 2018



THE OHIO STATE UNIVERSITY

FISHER COLLEGE OF BUSINESS



A Note from the Directors

Businesses across the country and around the world are changing the way they look at risk management. They are systematically moving from risk transfer (i.e. insurance) to comprehensive enterprise risk management solutions. The Future of Risk Management is here.

Each year The Risk Institute surveys 500 risk management professionals to get their take on what they're seeing in their departments and firms as it relates to risk. In our 2018 survey, the data revealed some compelling findings:

- 70% of firms report having an internal risk management function
- Companies are increasing funding for risk management, but the size of those units continues to decrease
- 44% expect to outsource some or all of their risk function
- Risk management is no longer siloed off from the rest of the firm – risk management has become every unit's responsibility

Our survey highlights the changes happening across the industry, particularly the rapid changes happening today.

We'll be unpacking more on what these findings mean for the future of risk management throughout the coming year, so be sure to follow us on Twitter and LinkedIn and on our website at fisher.osu.edu/risk.



This past year has been full of action, changes and learning. To our members, thank you for your support and vision for the future of risk management. We couldn't do any of this without you.

Onward!

Philip S. Renaud, II
Executive Director
The Risk Institute

Isil Erel
Academic Director
The Risk Institute

Our Mission

The Risk Institute (RI) at The Ohio State University Fisher College of Business operates at the intersection of risk research and risk management practice. Focused on an integrated, interdisciplinary approach to risk management.

Last year we focused on building connections — across the university, across industries and across the nation.

This year our focus is on time and change — we want to get the word out about the future of enterprise risk management, the fourth industrial revolution and how to leverage a dramatically changing landscape to create value

Rooted in Research: We fund and distribute leading edge risk research in order to leverage risk as opportunity

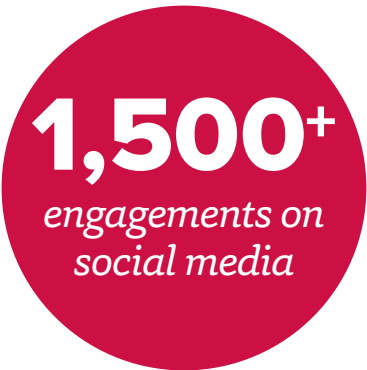
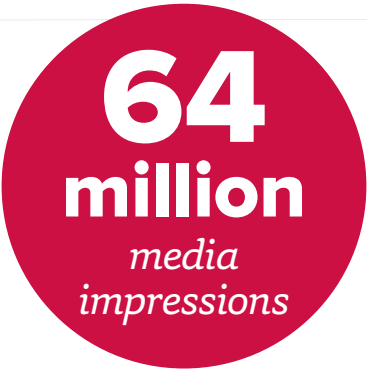
Committed to Collaboration: We partner with academics, students, and executives from a broad cross-section of industries

Dedicated to Education: We equip students and executives with the knowledge to lead their companies through risks, threats and opportunities with confidence

2018

BY THE NUMBERS

Research/Projects



Outreach/Collaboration

COMMITTED TO COLLABORATION

Events

The Risk Institute is committed to bridging the gap between academia and practice. We do this by hosting numerous events — Risk Series, Annual Conference, and others — that bring practitioners and academics together to discuss the latest happenings in risk.



► Visit go.osu.edu/riskseries for more information

RISK SERIES V

October 11, 2017

FCPA & Ethics

November 14, 2017

M&A

January 25, 2018

Risk & The Impact of U.S. Protectionism

February 21, 2018

Risk & The Macro-economy

March 20, 2018

Weather & Climate Risk

April 12, 2018

Natural Catastrophic Losses & Resilience

June 14, 2018

Embracing Digital Risk: AI, Robotics, Data & Drones

**THE DIGITAL
REVOLUTION**
and
**RISK
EVOLUTION**

Annual Conference 2017



An impressive list of speakers featured at our events this year include:

ANEESH CHOPRA

First Chief Technology Officer of the United States

PAUL ZIKOPOULOS

Vice President Big Data Analytics, IBM

MATTHEW CARROLL

Immuta

NORBERTO ANDRADE

Privacy & Public Policy Manager, Facebook

MICHELLE DE MOOY

Director of Privacy & Data Project, Center for Democracy and Technology

PAUL BRODY

Principal & Global innovation Leader, Blockchain Technology, EY

GREG KHAIRALLAH

Senior Manager for Data and Analytics, Amazon Web

HELEN PATTON

Chief Information Security Officer, Ohio State

NEIL HERSHFIELD

Deputy Director, U.S. Dept. Homeland Security

TOM KOULOPOULOS

Digital Futurist & Best Selling Author

ERIC LEBSON

Vice President, Crumpton Group

VLAD KAPUSTIN

Corporate Vice President, New York Life Insurance Company

BILL FOALE

Executive Director, EY

MIKE REPOLI

Mergers & Acquisitions, Gallagher Bassett

TOM O'HARA

Enterprise Risk Management Director, Huntington

GAVIN WAUGH

Vice President & Treasurer, The Wendy's Company

Looking Forward

This year we are focused on continuing to build connections within and outside of the university. Join us for one of our many continuing professional development opportunities from our Annual Conference, an exclusive VIP Summit, Risk Series and numerous breakfast and shared sessions.

RISK SERIES 2019

- 11.08.2018
Executive Summit
- 01.14.2019
Predictive Metrics & Modeling
- 02.21.2019
Third Party Risk
- 03.21.2019
Cyber Crime, Data Fraud & Theft
- 05.08.2019
Executive Summit
- 06.13.2019
Cultivating an Organizational Risk Culture

➤ See you there—learn more and register for our upcoming events at go.osu.edu/riskevents



ROOTED IN RESEARCH

Over the past year, The Risk Institute has awarded nearly \$155,000 to six research projects. Over the last three years, we've made an effort to extend the call for research globally. In FY16, that call was first extended beyond the OSU campus, and attracted excellent submissions from the U.S. and Europe on research related to governance and culture in risk. This year's research call focused on topics within digital risk. The funds awarded this year **connected us with 13 researchers** from universities across the U.S. and the globe, including The Ohio State University, Georgia State University, Rice University, University of Florida and University of Warwick in the United Kingdom.

Focus on Integrated Risk Management

Our annual survey on integrated risk management represents one of the ways The Risk Institute leads the risk management conversation with leading risk professionals.

The data reveals 70% of firms have an integrated risk management unit and companies are increasing funding for risk management, but the size of those units continues to decrease. Despite recognizing the need to invest in risk, firms are not investing in people.

Survey Topics

 ORGANIZATIONAL STRUCTURE AND TONE AT THE TOP

 INTEGRATION OF RISK MANAGEMENT INTO DECISION MAKING

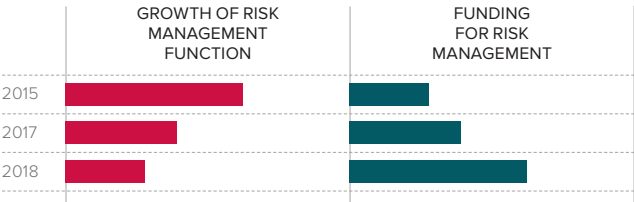
 SCOPE OF RISK MANAGEMENT

 RISK MANAGEMENT PROCESS

 DIGITAL RISK / DATA ANALYTICS

Among the other 2018 findings:

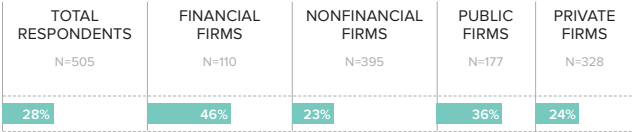
Companies are **increasing funding** for risk management, but the **size of those units continues to decrease.**



60% of risk managers believe that **AI will play a role in risk management** in the future.

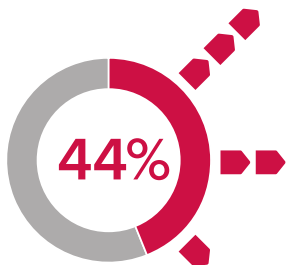
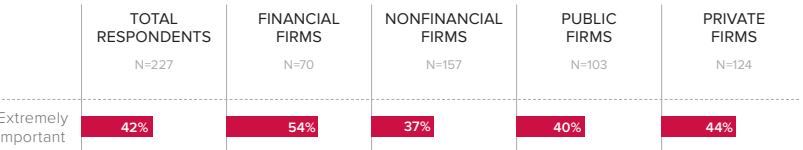


28% of respondents have been a **victim of a cyber attack.** This number is significantly larger for financial firms.



55% of respondents **do not use predictive analytics**, and those that do have been using them just 1-2 years.

Importance of predictive analytics to success of risk management for companies using it



expect to outsource some or all of their risk function.

► Read what this means for the future of risk management at go.osu.edu/riskresearch

Collaborative Research at The Risk Institute

The Risk Institute provides value to its member community by facilitating and participating in collaborative research. We rely on top business experts at Fisher as well as experts at a broad range of other OSU colleges and departments, allowing us to delve into topics including

- *Weather and Climate risk to businesses as well as effectiveness of policy*
- *Distracted driving and its impact on insurance claims*
- *The impact of natural gas resources on price and delivery to consumer*
- *New technologies to assist with safe vehicle operation, particularly in relation to fleets*



Big Data Risk Management: An Interdisciplinary Analysis

Dennis Hirsch, OSU Moritz College of Law

Big data analytics enables businesses to unravel market trends and customer preferences, make more informed business decisions and improve efficiency. Big data analytics can invade privacy and produce unfair, or even biased, results. This can damage corporate reputation, harm relationships with customers and regulators, and undermine corporate values. Hirsch and team will fill the gap by undertaking one of the first comprehensive studies on the topic.



The Real Effects of Climate Policy: Evidence from the California Cap-and-Trade Rule

Kewei Hou, The Ohio State University

Sohnke M. Bartram, University of Warwick
Sehoon Kim, University of Florida

Climate change is among the most intensely debated social issues of the current times. As a response to catastrophic risks due to climate change, governments around the world are pushing for regulations to curb anthropogenic greenhouse gas emissions, such as cap-and-trade. However, little is understood about the implications of such risk transfer. This study will investigate how firms manage regulatory risk through their investment decisions and emission behavior, in order to better understand the interplay between climate policy and firm behavior and to inform policy making with regards to the effectiveness of regional climate regulation.



Towards an Understanding of the Demand for Low Probability Insurance

Daniel J. Lee, Rice University

Susan K. Laury, Georgia State University
J. Todd Swarthout, Georgia State University

As the effects of climate change become more pronounced, so does the need for insurance to mitigate the risk of loss from catastrophic events. However, field data suggests surprisingly low take-up of insurance products for high consequence, low probability (HCLP) events like floods and other natural disasters—even when these insurance products are heavily subsidized. This study proposes an empirical study that attempts to bridge the results historically seen in the lab to what is readily observed in the field by adding a dose of realism to the insurance purchasing decision.



Modeling of Catastrophic Weather Losses to Support Risk Management for the Insurance Industry

Waleed A. Muhanna, OSU

Steven M. Quiring, OSU

While catastrophic weather loss models are key tools that can be used by insurance companies (and their clients as well as emergency management organizations) to assess catastrophic risk, improve risk management decisions and optimize their storm response, there are still significant shortcomings in the industry-standard models including data shortages and data unavailability. This project will address these knowledge gaps by partnering with Nationwide Mutual Insurance Company to develop, calibrate and evaluate catastrophic weather loss models using both traditional statistical techniques as well as machine learning methods.



Distracted Driving Initiative

The Risk Institute launched the Distracted Driving Initiative in February 2017. This is a nationwide initiative comprised of dozens of companies, government entities, and researchers seeking to combine leading-edge research with industry expertise in order to predict and curb distracted driving behaviors. The consortium identified a four-tiered approach: research, legislation, technology and environment/urban planning. Members of the initiative include: Nationwide, Motorists, Ohio Mutual, Honda, Ford, eFleet, SmartDrive, Root, The National Highway Traffic Safety Administration (NHTSA), Ohio Department of Public Safety, TrueNorth, Mobileye and Greenroad among others.

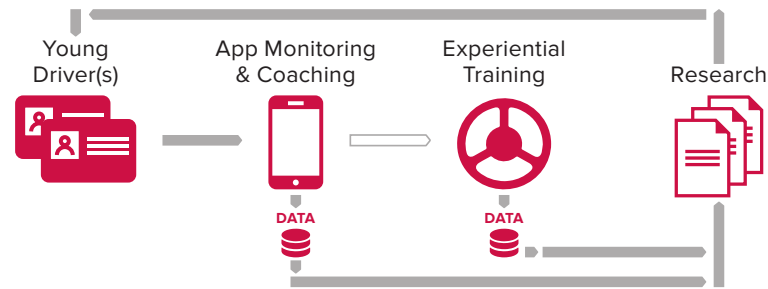
This year we completed two research projects: one on the state of driver's education across America and the other on the behavioral psychology behind distracted driving.

► Learn more about how we're putting the brakes on distracted driving at go.osu.edu/itcanwait

OUR APPROACH: THE FUTURE OF DRIVERS EDUCATION

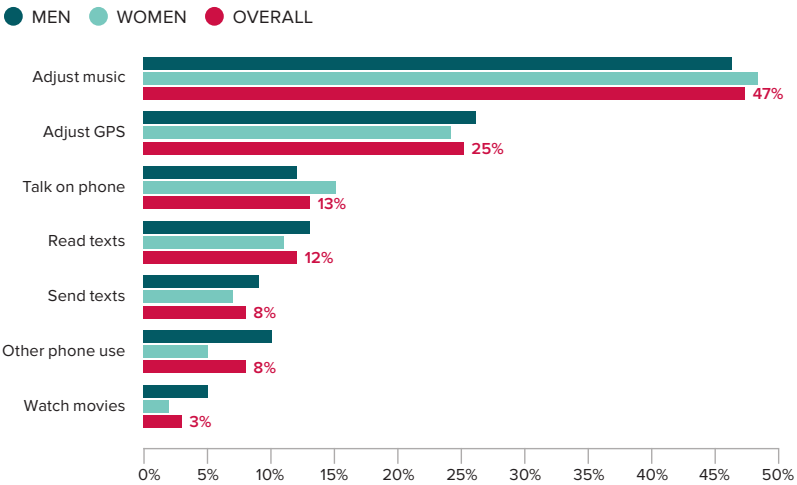
Distracted driving behaviors lead to more crashes, more claims and far too many lost lives. The Risk Institute, in a public/private partnership, seeks to change driver behavior by using an evidence-based approach to drivers education.

Change starts now — and it starts with us.



PREVALENCE OF SPECIFIC DISTRACTED DRIVING BEHAVIORS

Participants reported the percentage of trips in which they drove and did each behavior. Behaviors are ordered from most to least reported.



FREQUENT DISTRACTED DRIVERS:

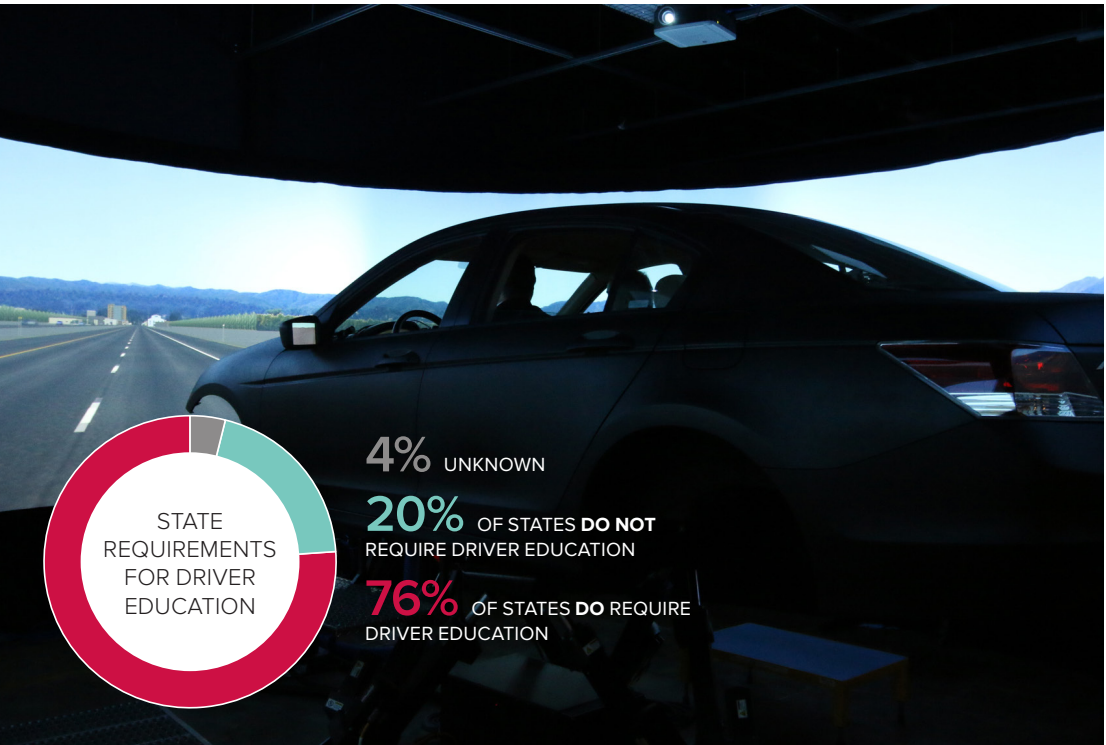
- perceived less risk from distracted driving
- overconfident in distracted driving ability
- had positive attitudes towards their cell phones
- overestimated how often others drove distracted
- male
- lower verbal intelligence



OVERCONFIDENCE = CRASHES ⚡

Self-reported “good” drivers are more likely to be driving distracted.

68% of drivers reported believing they were better-than-average drivers, while simultaneously reporting more distracted driving behaviors than less confident drivers.



DEDICATED TO EDUCATION

Meeting the Need for Trained Risk Experts

We are committed to providing students with the curricular and educational resources to be successful risk practitioners and risk-aware business professionals.

Fisher's risk students work hard to excel in their chosen field, and there are organizations that recognize this. The Risk Institute has worked to make sure our risk students are made aware of scholarship opportunities that are available to them.

We also support a risk-focused student group: Gamma Iota Sigma.

Gamma Iota Sigma is an international professional fraternity organized to promote, encourage and sustain student interest in insurance, risk management and actuarial science as professions. The alpha chapter of the 50 year-old academic fraternity was on the verge of collapse in 2017, but a faithful student was determined to save the chapter. That Fisher student approached the Institute to help her do so, and membership has increased tenfold.



"The Risk Institute was not only integral to my experience at Ohio State, but also pushed me to think about risk holistically."

— Averie Kenney Reiber, MBA 2018





PEOPLE WHO MAKE IT POSSIBLE

The Risk Institute Team

Advisory Board

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The Risk Institute, Fisher College of Business

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Chief Risk Officer, Huntington

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The Ohio State University

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