Tuesday, MARCH 21

RESILIENCE ANALYTICS TO SUFFER LESS AND RECOVER FASTER

The better we understand our risks, the less we suffer and the faster we recover. But what does that understanding look like? In this session, you’ll gain an understanding of the analytics that are required to design cost-effective resilience strategies.

7:00 A.M. – 8:30 A.M.
REGISTRATION & NETWORKING BREAKFAST

8:30 A.M. – 9:30 A.M.
ECONOMICS & COMMUNITY: THE ANALYTICAL INTERSECTION
Celestin

Hemant Shah, CEO, RMS
Emily Paterson, Director, Product Management, RMS
Dr. Mark Powell, Vice President, Model Development, RMS
Chris Folkman, Senior Director, Product Management, RMS

RMS’ mission is to understand catastrophic risk and thereby to help build more resilient communities and more robust economies. We thrive on driving innovative and sustainable change. What does that look like in New Orleans’ specific context? We ask some RMSers to reflect via a handful of keynotes.

9:30 A.M. – 12:00 P.M.
RESILIENCE ANALYTICS: FUNDAMENTALS
Strand 1

Dr. Joshua Gill, Senior Consultant, RMS
Hailey Mitchell, Model Solutions Specialist, RMS
Sam Gibson, Director – Risk Advisory, RMS
Adam Rimmer, Senior Consultant, RMS

‘That could never happen here! That’s too difficult to quantify! We’ll never get that cost-justified!’ Can you measure the economic potential for and interdependence between extreme shocks? Which adaptive strategies have the greatest likelihood of the most positive impact? Can you articulate your resilience strategy in a way that attracts multiyear funding? Resilience analytics provide context and quantification to address these and other difficult questions. Join RMS experts for a taught introduction to the core concepts underpinning this essential urban resilience discipline.

12:00 P.M. – 1:45 P.M.
LUNCH BREAK

Network with peers, scientists and private sector experts over lunch, and take in a few presentations at the Minitheater.
12:25 P.M. – 12:45 P.M. (DURING LUNCH)  
**ENHANCING RESILIENCE OF CRITICAL INFRASTRUCTURE**  
Conor Meenan, Consultant, RMS  
Daniel Stander, Global Managing Director, RMS  

As part of the Rockefeller Foundation's 100 Resilient Cities initiative, RMS provided modeling expertise to support Mexico City in developing a resilience strategy. We will discuss how modeling risk to critical infrastructure can contribute to the design of efficient resilience strategies, through the identification of priority assets and the quantification of the cost-benefit of potential resilience investments. This minitheater presentation will also include techniques to assess the risk to complex transport and energy networks.

12:50 P.M. – 1:10 P.M. (DURING LUNCH)  
**MAKING A POSITIVE IMPACT IN NEPAL WITH BUILD CHANGE**  
Amy Carter, Senior Catastrophe Risk Analyst, Munich Re  
Jeremy Zechar, Senior Catastrophe Modeling Analyst, AXIS Capital  
Matthew Nielsen, Senior Director, Regulatory Affairs, RMS  

RMS is committed to reducing deaths, injuries, and economic losses caused by housing and school collapses due to earthquakes and typhoons in emerging nations. A panel of RMS clients and RMS staff describes experiences working in Nepal and Haiti, providing insights into the opportunities for building resilience in high-hazard, developing communities.

1:15 P.M. – 1:35 P.M. (DURING LUNCH)  
**COASTAL HABITATS & MANAGING NATURAL HAZARDS**  
Dr. Paul Wilson, Vice President, Model Development, RMS  

Natural habitats play a significant role in reducing the risk of coastal flooding. A growing body of evidence suggests that restoring natural defenses can be far more cost-effective in preventing damages from storms than grey or hardened shorelines, such as sea walls and levees. Explore how RMS is partnering with a team of leading scientists from the University of California at Santa Cruz, The Nature Conservancy, and the Wildlife Conservation Society to quantify the resilience dividend of coastal habitats in combatting flood risk. You’ll also learn how to identify innovative financial tools that could meet risk reduction and conservation goals.

1:45 P.M. – 2:10 P.M.  
**INTRODUCTIONS & OBJECTIVES**  
Daniel Stander, Global Managing Director, RMS  
Stephen Moss, Director, Capital Markets Solutions, RMS  

Join the hosts of Resilience 2017 for an informal discussion of the participants’ objectives for the workshop.
2:10 P.M. – 2:30 P.M.
KEYNOTE: QUANTIFYING THE COST OF INACTION
Dr. Paul Wilson, Vice President, Model Development, RMS

Good resilience practice starts with a deep understanding of the potential shocks that could bring a given community to its knees – so deep that it is possible to begin to grasp in quantitative terms the kinds of economic and human ramifications which might impact the community even if the phenomena at play are characterized by deep uncertainty. Next, it’s important to understand in similar depth the non-stationary background factors which could exacerbate the frequency and or the severity of devastating losses. Only by putting these two dimensions together can one begin to sketch out with any coherence a resilience profile for a given community over time – both by shock and across all shocks.

2:40 P.M. – 3:00 P.M.
RESILIENCE ANALYTICS: WHAT ARE THEY & WHY USE THEM?
Daniel Stander, Global Managing Director, RMS

Moving from resilience indicators to resilience metrics: end-state examples from Sendai to today. Resilience indicators, like the City Resilience Index created by Arup for 100 Resilient Cities, are helpful tools. They encourage a comprehensive approach to resilience and can shed light on areas of relative strength and weakness. Measuring, managing and financing resilience, however, requires something altogether more analytical. What metrics are required to confidently design and implement a resilient strategy? We will paint a picture of the science-based, metric-driven approach to justify and deliver the resilience promise.

3:00 P.M. – 3:20 P.M.
ARE YOU LOSING THE FOREST FOR THE TREES?
Adam Rimmer, Senior Consultant, RMS
Gary McInally, Chief Actuary, Flood Re

Understanding your risk to extreme events, not to mention how the impact of such events is changing, is the essential first step to increasing your resilience. A deep appreciation of the potential impact of catastrophic shocks is a fundamental characteristic of strong leaders. How do you foster that understanding in your leadership team, especially when they’re preoccupied with chronic, everyday stresses? And then there’s the public…

3:50 P.M. – 4:30 P.M.
SETTING & ARTICULATING REALISTIC RESILIENCE TARGETS
Stephen Moss, Director, Capital Markets Solutions, RMS
Shawna Ackerman, Chief Actuary, California Earthquake Authority

Resilience is a direction, not a state. The best first step is the acknowledgement of your current resilience profile in the context of your resilience targets. But what should those targets be and how should you best articulate them to effect positive change?
DATA: THE CORNERSTONE OF RESILIENCE  
Conor Meenan, Consultant, RMS

In this session, we will show exactly why exposure data is essential to any effective resilience strategy. We’ll explore possibilities to leverage the data you have today, as well as tactics to invest in more precisely developing better data.

INFORMING RESILIENCE WITH ENHANCED DATA CAPTURE  
Alastair Norris, Senior Consultant, RMS  
Kevin Van Leer, Senior Product Manager, RMS

How can quality data enhance your view of risk and your approach to resilience? Learn how certain building characteristic collection practices can unlock a deeper assessment of your vulnerabilities and a more tailored resilience program.

DAY ONE WRAP-UP  
Daniel Stander, Global Managing Director, RMS  
Stephen Moss, Director, Capital Markets Solutions, RMS

Reflect collectively of the first day. What were the main learnings? Does the Day-Two agenda need recalibration?

NETWORKING RECEPTION  
Oppportunity to network with private sector resilience professionals over drinks and a relaxed buffet.
WEDNESDAY, MARCH 22

IMPLEMENTING STRATEGIES FOR RESILIENT SOCIETIES

How are science-based analytics building more resilient societies? Discuss when to reduce and when to transfer risk, explore nature-based defenses, and redirect capital flows to protect public and private exposures.

7:00 A.M. – 8:00 A.M.
NETWORKING BREAKFAST & SELF-DIRECTED LAB TIME

8:00 A.M. – 9:00 A.M.
CYBER, LIABILITY, DROUGHT & CLASH: INNOVATION KEYNOTES
Dr. Christos Mitas, Vice President, Model Development, RMS
Dr. Robert Reville, CEO, Praedicat
Dr. Steve Jewson, Senior Vice President, Model Development, RMS
Dr. Andrew Coburn, Vice President, Emerging Risks, RMS

Short keynotes on four areas of risk innovation.

9:00 A.M. – 9:15 A.M.
DAY TWO INTRODUCTION & OBJECTIVES
Daniel Stander, Global Managing Director, RMS
Stephen Moss, Director, Capital Markets Solutions, RMS

Join the hosts of Resilience 2017 for an informal discussion of objectives for day two.

9:15 A.M. – 09:35 A.M.
IMPLEMENTING RESILIENCE STRATEGIES
Denise Reed, Chief Scientist, Water Institute of the Gulf

Prevention is better than cure – about four times better, in fact. But it isn’t always obvious whether building-level adaptation is better than regional; whether grey infrastructure is better than green, nature-based defenses. Let’s take a closer look at the situation in coastal Louisiana, asking what’s required to ensure the state’s Master Plan rises to the challenge.

9:35 A.M. – 10:10 A.M.
REDUCE, RETAIN & TRANSFER: THREE ROUTES TO RESILIENCE
Tim Richison, Chief Financial Officer, California Earthquake Authority
Gary McInally, Chief Actuary, Flood Re
Dr. Robert Muir-Wood, Chief Research Officer, RMS
Dayton Marchese, Environmental Researcher, US Army Corp of Engineers
Pre-event resilience building fundamentally comes in three flavors. Which one is right for you? Are they mutually exclusive? Is the answer situation-dependent? Join the discussion with a panel of industry experts.

**10:25 A.M. – 10:40 A.M.**
**DISASTER AID & THE CASE FOR INSURANCE-LINKED SECURITIES**
*Stephen Moss, Director, Capital Markets Solutions, RMS*
*Laurence Carter, Senior Consulting Analyst, RMS*

The humanitarian aid spent on natural disasters from 2000-2015 ran at less than $1.5bn per annum. Sadly, over the same period, the run rate of economic losses from those same natural disasters was almost $30m. That’s a huge shortfall – every year. Some are advocating for risk transfer to step in a play a role. Do the numbers stack up? Does investor appetite exist? Will those communities most in need be able to avail themselves of the capital?

**10:40 A.M. – 11:05 A.M.**
**RISK-BASED PRICING & OTHER POSTCARDS FROM CAPITOL HILL**
*Clifford Roberti, Policy Advisor, DLA Piper*
*Samantha Medlock, Senior White House Advisor on Climate Preparedness & Levee Safety*
*Matthew Nielsen, Senior Director, Regulatory Affairs, RMS*

Economic losses have tended to outstrip insured losses by 3 to 1. This is problematic on many levels, not least for the nation’s insurer of last resort, the federal government. Against this backdrop, what policies are gaining traction on Capitol Hill? Is talk of a FEMA deductible indicative of a wider federal government movement to better understand risk? What might this mean for the levels of protection a public body is expected to have in place? What are the implications for the private sector? Gain insights into how Congress and agencies under a Trump administration will assess – and regulate – what resilience strategies are prudent and economically efficient.

**11:05 A.M. – 11:25 P.M.**
**STRESS TEST YOUR RESILIENCE TO WATER SCARCITY**
*Dr. Navin Peiris, Senior Director, Model Development, RMS*
*Laurence Carter, Senior Consulting Analyst, RMS*

Drought is a significant source of potential shock even to coastal communities. While there is a growing recognition that environmental stress testing is crucial to ensuring sustainable economies, there remains two common misconceptions: that sustained lack of water is primarily a problem for agriculture and that even then only locally. How well do we understand the extent to which a prolonged drought, even one in an adjacent region, would impact the local economy?
11:25 A.M. – 11:50 P.M.  
**TOP TIPS WHEN ENGAGING THE PRIVATE SECTOR**  
*Danny Marshall, General Council, California Earthquake Authority*

Public-private partnerships are full of promise. Learning from industry experts is core to increasing public sector resilience. But how do you select the right partners? Where does the right expertise lie? And can too many cooks spoil the broth? Public sector executives share their top three tips for working with private sector advisors.

11:55 P.M. – 12:10 P.M.  
**DAY TWO WORKSHOP WRAP-UP**  
*Daniel Stander, Global Managing Director, RMS  
Stephen Moss, Director, Capital Markets Solutions, RMS*

Take stock collectively of the two days. How did they compare versus expectations? More importantly, what were your key take-aways? What will you do differently when you return to your desk?

12:15 P.M. – 1:30 P.M.  
**LUNCH, LAB & MINITHEATER**  

Network with peers, scientists and private sector experts over lunch, and take in a few presentations at the Minitheater.

12:15 P.M. – 12:35 P.M. (DURING LUNCH)  
**RETOFITTING TO BUILD RESILIENCE IN VULNERABLE CITIES**  
*Michael Collins, Director of Education, Build Change  
Juan Caballero, Director of Programs and Partnerships, Latin America, Build Change*

Can non-governmental organizations help earthquake insurance professionals create viable products that mitigate risk in emerging nations? Build Change will share its in-depth experience in seismic retrofitting in vulnerable neighborhoods such as Haiti, Colombia, Nepal, and the Philippines. Join us as we explore how results from building vulnerability assessments, detailed retrofit and reconstruction costing, homeowner preference surveys, and construction supervision experience can contribute to more accurate risk modeling and higher penetration of disaster insurance in informal markets worldwide.

12:40 P.M. – 1:00 P.M. (DURING LUNCH)  
**Q&A: THE EVOLUTION OF CYBER RISK MODELING**  
*Dr. Christos Mitas, Vice President, Model Development, RMS*

Cyber risk lies in the intersection of social, economic, political and technological processes, all of which are interconnected via human behavior. It emerges naturally, unpredictably and systematically in cyber systems. It is characterized as both complex and adaptive. As with...
Terrorism, RMS has been first-to-market with a comprehensive cyber risk model. It is underpinned by an investment in computer and data science, as well as a variety of modelling paradigms, including mathematical statistics, game theory and complexity theory. Join this open Q&A with Dr. Mitas to understand more about RMS’ approach to this emerging and complex peril.

1:05 P.M. – 1:25 P.M. (DURING LUNCH) **HOW CAT MODELS SAVE LIVES**  
*Dr. Robert Muir-Wood, Chief Research Officer, RMS*

In the 2015 UN-sponsored Sendai Framework for Disaster Risk Reduction, national progress will be “monitored” based on comparing two decades of actual disaster mortalities and losses. However, we know disasters are too volatile for progress to be measured in this way (compare the quarter of a million killed by the 2010 earthquake in Port-au-Prince with the fewer than ten Haitian earthquake casualties since 1900). For the same reasons re/insurers needed catastrophe models to price and manage catastrophe risk, the international community needs the independent application of catastrophe models to measure progress around casualties and economic losses from disasters.

1:30 P.M. – 2:30 P.M. **RESILIENT NEW ORLEANS: FOUR KEYNOTES**  
*Jeffrey Hebert, First Deputy Mayor, Chief Administrative Officer & Chief Resilience Officer, NOLA  
Samantha Medlock, Senior White House Advisor on Climate Preparedness & Levee Safety  
Tanya Harris, Community Outreach Manager, Make It Right Foundation  
Dr. Robert Muir-Wood, Chief Research Officer, RMS*

Four perspectives on Louisiana’s specific resilience challenge – and how it is rising to meet it. Why is Louisiana the number one State for U.S. flood risk? Can we close the flood protection gap in Louisiana? Can resilience analytics drive improved flood risk management? How can a risk culture be embedded in southern Louisiana? What are the lessons for other coastal U.S. cities? Robert Muir-Wood’s keynote, entitled ‘On the Flood Front Line: Risk Modeling & Resilience in Louisiana’, will address these questions and more.

2:45 P.M. – 5:30 P.M. **DEALER’S CHOICE**

Choose from various specialist topics, or arrange an expert 1-2-1 meeting to discuss your resilience priorities.

2:45 P.M. – 5:30 P.M. **FIVE PERSPECTIVES FROM THE PRIVATE SECTOR**

Get the latest insights and perspectives from world-leading advisors on the current and future state of the risk and resilience industry. You will hear their views on how to better understand, manage, and transfer the potential for catastrophic shocks.
VALIDATING YOUR VIEW OF RISK

Learn how to create your own view of risk, including in the context of emerging regulation.

U.S. FLOOD MODELING

RMS has been modeling flood risk for decades. Learn from RMS’ U.S. flood modeling team in order to implement the solutions you need. This session will focus on how the science behind the 50,000-year hazard simulations in our model helps you improve your flood resilience.

TERRORISM MODELING AND THE 2017 THREAT LANDSCAPE

The terrorism global risk landscape is fluid, counterterrorism sophistication is growing, and attack frequency is high. What are the modeling implications in 2017, and how might they affect resilience strategies this year and beyond?

VULNERABILITY MODELING & THE R20

Dr. Anne Cope, VP of Research at the Insurance Institute for Business & Home Safety, will provide insight into how advanced building vulnerability research directly benefits the insurance industry and enables the creation of your own view of risk.

Q&A WITH THE MAKE IT RIGHT FOUNDATION

Tanya Harris continues to be a beacon of hope in New Orleans. Born and raised in the Lower 9th Ward, she has been a leader in the extensive rebuilding efforts and an advocate for the right of return for all NOLA residents. Tanya has led organizing campaigns for fair wages, voting accessibility, and affordable housing. This is your chance to engage with her directly.

MITIGATING FLOOD RISK

Flood mitigation is effective. Hear Tom Little, vice president of Flood Risk Evaluator, discuss how his company is combining insurance products together with a unique flood vent system to convince homeowners to invest in flood loss mitigation.
4:15 P.M. – 4:35 P.M.  
**PORTS, CARGO & RESILIENCE**

Cargo exposure is diverse and its modeling must be specific. Learn techniques for a more precise understanding accumulations of cargo exposure and for quantifying your ports’ resilience to catastrophic shocks.

4:15 P.M. – 4:35 P.M.  
**QUANTIFYING THE RESILIENCE DIVIDEND OF FLOOD DEFENSES**

Community flood protection is an important part of flood risk assessment, yet information on 80 percent of the nation’s flood protection systems is missing from public data sources. What’s the best approach to developing defended and undefended views of flood risk? Learn about how new, high-definition capabilities allow for bespoke defense modeling.

4:45 P.M. – 5:10 P.M.  
**ENHANCED DATA COLLECTION**

How can quality data capture and enhance your view of risk? Kristin Carrington, CEO of Carrington Risk Consulting, will discuss existing building characteristic collection practices and how various approaches can unlock more nuanced views of your resilience.

4:45 P.M. – 5:30 P.M.  
**ART & SCIENCE OF SPATIAL UNCERTAINTY**

Spatial uncertainty is a fundamental challenge in resilience modeling, and it is particularly challenging when exposures can be mobile and data quality can be poor. Learn how to addresses these challenges with several in-depth case studies on geocoding and data quality management.

5:30 P.M. – 6:00 P.M.  
**ONE FOR THE ROAD**

*Daniel Stander, Global Managing Director, RMS  
Stephen Moss, Director, Capital Markets Solutions, RMS*

Reflect collectively of the second day by joining various members of the RMS team at the bar for a drink and a debrief. All comments and questions welcome!

7:00 P.M. – 11:00 P.M.  
**NETWORKING PARTY**

Opportunity to network with private sector resilience professionals. Expect drinks, casual dining and music.