



THE FLORIDA STATE UNIVERSITY  
COLLEGE OF BUSINESS  
*The Florida Catastrophic Storm Risk Management Center*

## 2010 Annual Report

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From the Director  
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## From the Director

It's been said that just because everything is different it doesn't mean anything has changed. Certainly, the 2010 elections resulted in new state leadership, but the need for solutions to Florida's property insurance issues, especially those related to our vulnerability to hurricanes, still remains.

The Legislature established The Florida Catastrophic Storm Risk Management Center at The Florida State University to fill a unique role among academic institutions by focusing on issues critical to property insurance, risk management, and finance. The Center is particularly qualified to conduct and publish research in these areas as many of its faculty members are part of Florida State's Risk Management and Insurance (RMI) Program, which *U.S. News & World Report* recently ranked in the top ten among RMI programs nationwide.

Also, we are fortunate to have the support of an exceptional Advisory Council that provides meaningful input and guidance towards fulfilling our legislative mandate. Our recently announced addition to the [Willis Research Network](#) has greatly increased our opportunities for national and global research partnerships.

The Center's research projects, while unique and Florida-focused, often are relevant in other states and even other parts of the world. In 2010, the Center focused on topics such as:

- The launch of a large-scale property profile of state university buildings to better determine the state government's hurricane risk. The detailed information will encourage more reinsurers to compete for the state's reinsurance needs. The project also identifies specific building mitigation needs.
- The effects Florida's mandated windstorm mitigation premium credits have on insurer solvency and the residual market.
- Linkages between mispricing in Florida's property insurance market and specific demographic factors including age, income, and race.
- The development of innovative finance concepts for encouraging homeowners to strengthen their homes against hurricanes.
- A comparison of hurricane loss models.
- A review of Florida's My Safe Florida Home mitigation inspection system and the development of recommendations for future programs.

As our legislative mandate includes supporting research related to hurricane preparedness, we continued to sponsor a University of Florida wind engineering project that seeks to provide solutions to the problem of building damage caused by wind-driven rain. Also, we support a Florida State Center for Ocean-Atmospheric Prediction Studies project that explores the early stages of hurricane development and short-term hurricane intensity changes.

We are proud of what the Center has accomplished in the past three years. Please feel free to contact me at [pmaroney@cob.fsu.edu](mailto:pmaroney@cob.fsu.edu) if you would like to discuss any of our work.



**Patrick F. Maroney**

Kathryn Magee Kip  
Professor and Director

## 2010 Research

### **A Marginal Cost Model of Reinsurance Attachment Points, Catastrophe Risk, and Government Intervention ([Executive Summary](#), [Working Paper](#)) December 2010**

This paper presents a theoretical model of the minimum cost of providing catastrophic insurance coverage. It proposes an insurance market model that explains the cost and benefits of reinsurance for catastrophic risk, including the implicit (or explicit) presence of government entities acting as (re)insurers of last resort.

**Investigators:** *M. Martin Boyer, Ph.D., CEFA Professor of Finance and Insurance, Department of Finance, HEC Montréal, Université de Montréal; Charles Nyce, Ph.D., Associate Director, Florida Catastrophic Storm Risk Management Center, The Florida State University.*

### **Demographic Factors and the Mispricing of Insurance ([Executive Summary](#), [Working Paper](#)) October 2010**

This study analyzes the potential linkages between mispricing in the Florida property insurance marketplace and specific demographic factors including age, income, and race in an effort to determine if any of the subgroups of the population are adversely impacted by the mispricing of property insurance. The results suggest that Hispanics and lower-income households are paying relatively more for insurance coverage than the comparison groups. The results also indicate that younger and older populations pay higher relative prices than do middle age individuals.

**Investigators:** *Ron Cheung, Ph.D., Assistant Professor of Economics, Oberlin College; Cassandra R. Cole, Ph.D., Associate Professor and Waters Fellow in Risk Management and Insurance, The Florida State University; David Macpherson, E.M. Stevens*



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*Professor of Economics, Trinity University; Kathleen A. McCullough, Ph.D., Associate Professor and State Farm Professor of Risk Management/Insurance, The Florida State University; Charles Nyce, Ph.D., Associate Director, Florida Catastrophic Storm Risk Management Center, The Florida State University.*

### **Hurricane Mitigation Inspection System Study. Funding provided by the Florida Department of Financial Services. ([Final Report](#); **Appendices available upon request.**) September 2010**

The goal of the study was to research, review and recommend an infrastructure for the performance of hurricane mitigation inspections, including who should perform such inspections, how such inspections should be conducted, what processes, policies and procedures should be in place to optimize the effectiveness and efficiency of the hurricane mitigation system while preventing fraudulent activity. This report includes a detailed analysis of the study results and a summary of findings and recommendations on the eight technical specifications. It also includes the research, data and documentation collected during the study period.

**Investigators:** *Patrick Maroney, Kathryn Magee Kip Professor and Director, Florida Catastrophic Storm Risk Management Center; The Florida State University; Lori Medders, Ph.D., Associate Director, Florida Catastrophic Storm Risk Management Center, The Florida State University; Charles Nyce, Ph.D., Associate Director, Florida Catastrophic Storm Risk Management Center, The Florida State University.*

(more)

**Investigating the Issue of Rain Penetration Through the Building Envelope ([Final Report](#)) September 2010**

Water intrusion into buildings remains a critical, recurring issue during hurricane impacts. Although most homes and businesses survived the 2004 and 2005 storms structurally, a significant number experienced enough rain penetration to require extensive interior restoration, resulting in occupant displacement and business interruption until the completion of repairs. This project investigated water penetration issues for existing and new infrastructure.

*Investigators:* Forrest Masters, PhD, Assistant Professor, Department of Civil and Coastal Engineering, University of Florida; David Prevatt, PhD, P.E., Assistant Professor, Department of Civil and Coastal Engineering, University of Florida; Kurt Gurley, PhD, Associate Professor, Department of Civil and Coastal Engineering, University of Florida.

**Developing an Innovative, Computer-based Approach to Testing the Effectiveness of Alternative Approaches to Encouraging Mitigation ([Final Report](#)) September 2010**

It is increasingly recognized that the most cost-effective approach to manage losses from natural hazards is to mitigate them before they are incurred. Yet, it is also widely recognized that residents and communities are often loathe to undertake such investments voluntarily. The purpose of this research was to develop an innovative, computer-based approach to testing the effectiveness of alternative approaches to encouraging mitigation *before they are launched*.

*Investigator:* Robert J. Meyer, Ph.D., Center for Risk Management and Decision Processes, University of Pennsylvania

**Insurance Residual Markets: Historical and Public Policy Perspectives ([Final Report](#)) July 2010**

This paper describes the essential features of the private sector solutions, the shared market solutions and the public solutions for providing insurance coverage that the admitted market cannot or will not provide. In addition, the report identifies and addresses a number of relevant public policy issues associated with residual market solutions that may assist legislators, regulators and others in understanding the special nature and various components of the residual market.

*Investigator:* James W. Newman, Jr.

**Home Hardening Incentives Programs: Innovative Finance Concepts for Wind Mitigation and Home**

**Hardening.** Matching grant from Florida's Residential

Construction Mitigation Program. ([Final Report](#)) June 2010

Because of the upfront costs associated with the implementation of mitigation techniques as well as other barriers, consideration of financing programs that can help curb the personal costs of mitigation and home hardening is critical. This study evaluates *local* financing programs that may be useful within the State of Florida to compel residential property owners and developers to make voluntary windstorm mitigation expenditures.

*Investigators:* Lori Medders, Ph.D., Associate Director, Florida Catastrophic Storm Risk Management Center, The Florida State University; Patrick Maroney, Kathryn Magee Kip Professor and Director, Florida Catastrophic Storm Risk Management Center; The Florida State University; Charles Nyce, Ph.D., Associate Director, Florida Catastrophic Storm Risk Management Center, The Florida State University; Sue Ellen Smith, Program Manager, Florida Catastrophic Storm Risk Management Center, The Florida State University.

**Mitigation Credit Study ([Final Report](#)) April 2010**

Florida's mandated windstorm mitigation premium credits and their effects on insurer solvency and the residual market are important public policy considerations that warrant examination. This report reviews recent Florida studies related to the issue of premium credits for windstorm mitigation features and analyzes the engineering and actuarial dimensions of the issue.

***Investigators:** Patrick Maroney, Kathryn Magee Kip Professor and Director, Florida Catastrophic Storm Risk Management Center, The Florida State University; Lori Medders, Ph.D., Associate Director, Florida Catastrophic Storm Risk Management Center, The Florida State University; Charles Nyce, Ph.D., Associate Director, Florida Catastrophic Storm Risk Management Center, The Florida State University; John W. Rollins, FCAS, MAAA, Rollins Analytics, Inc.*

**A Comparison of Hurricane Loss Models ([Final Report](#)) Spring 2010**

Hurricane models are a significant tool used in estimating loss costs in catastrophe-prone areas. While the major hurricane models consider a consistent set of factors, there are variations in how the factors are treated in the models. This can lead to consideration variation in the modeled average annual losses (AALs), even at the exposure level, based on the catastrophe model used. This paper uses a large dataset of wind-only policies in order to analyze the impact of housing, insurance, and mitigation characteristics on AALs for four hurricane loss models.

***Investigators:** Cassandra R. Cole, Ph.D., Associate Professor and Waters Fellow in Risk Management and Insurance, The Florida State University; David Macpherson, E.M. Stevens Professor of Economics, Trinity University; Kathleen A. McCullough, Ph.D., Associate Professor and State Farm Professor of Risk Management/Insurance, The Florida State University.*

**Improved Analysis and Understanding of the Meteorology Underlying the Various Components of the Hurricane Risk Problem ([Final Report](#)) January 2010**

Given the growth of the coastal population, an ever increasing number of citizens who have never experienced hurricane force winds, and a growing uncertainty about the future and role of climate change, there is a greater need for breakthroughs in hurricane observations, analysis, understanding, forecasting, and risk mitigation. This project examines the role that wind shear plays in the genesis stage of a hurricane; seeks breakthroughs in improved understanding and forecasting of short-term hurricane intensity change; and, addresses the question of how to extrapolate the Doppler-radar winds, which are hundreds to thousands of feet above the ground, to the surface where we live.

***Investigators:** Robert E. Hart, Ph.D., Department of Meteorology, The Florida State University; Henry Fuelberg, Ph.D., Department of Meteorology, The Florida State University; Paul Reasor, Ph.D., Department of Meteorology, The Florida State University.*

[See All Center Research \(2008-2010\)](#)

# 2010 Outreach & Education

## **Dec. 10 - Catastrophic Risk Management Symposium (hosted by The Griffith Insurance Education Foundation)**

*Presentation:*

**Ways to Incentivize Disaster Mitigation Measures** – Lori Medders, Ph.D., Associate Director, The Florida Catastrophic Storm Risk Management Center

## **Nov. 22 - Southern Risk and Insurance Association 43rd Annual Meeting**

*Presentations:*

**Windstorm Mitigation: Home Hardening vs. Premium Reduction, Are the Goals Compatible?** – Patrick Maroney, Director, The Florida Catastrophic Storm Risk Management Center, Lori Medders, Ph.D., Associate Director, The Florida Catastrophic Storm Risk Management Center, Charles Nyce, Ph.D., Associate Director, The Florida Catastrophic Storm Risk Management Center

**A Cost Approach to Reinsurance Attachment Points: Underwriting and Insurer Cost of Capital** - M. Martin Boyer, Ph.D., University of Montreal, and Charles Nyce, Ph.D., Associate Director, The Florida Catastrophic Storm Risk Management Center

## **Oct. 21 - Moving the Market Forward: Florida Office of Insurance Regulation Property Insurance Public Symposium**

*Presentations:*

**Reinsurance Capacity, Stability and Alternative Risk Transfer Techniques** – Lori Medders, Ph.D., Associate Director, The Florida Catastrophic Storm Risk Management Center



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**[The State of and Outlook for Residential and Commercial Property Insurance Markets](#)** – Charles Nyce, Ph.D., Associate Director, The Florida Catastrophic Storm Risk Management Center

## **Sept. 28 - CPCU Annual Meeting**

*Presentations:*

**[Lessons Learned from Catastrophic Events](#)** – Charles Nyce, Ph.D., Associate Director, The Florida Catastrophic Storm Risk Management Center

**June 23 - Property Insurance Trends, Capacity and Regulatory Developments** (presented with The National Alliance for Insurance Education & Research)

*Presentations:*

**[Industry Performance Trends](#)** – Charles Nyce, Ph.D., Associate Director, and Lori Schneider, Ph.D., Associate Director, The Florida Catastrophic Storm Risk Management Center

**[Explaining Florida's Mitigation Credits](#)** – Patrick Maroney, Director, The Florida Catastrophic Storm Risk Management Center

**[2010 Florida Property Insurance Legislative Report](#)** – Fred Karlinsky, Esq. Colodny, Fass, Talenfeld, Karlinsky, Abate. P.A.

**Decision Support Services** – Mike Mintor, Insight Catastrophe Group

*(more)*

[Coastal Construction: Issues, Codes, Compliance, Costs](#) – John Minor, President, Complete General Contractors, Inc., and William Bracken, Bracken Engineering

**April 1 - Presentation for the National Hurricane Conference**  
Charles Nyce, Ph.D., Associate Director, The Florida Catastrophic Storm Risk Management Center, discussed [The Capacity of Insurers to Pay Catastrophe Claims](#) at the National Hurricane Conference in Orlando, Fla.

**Jan. 14 - Presentation to the Government Operations Appropriations Committee of the Florida House of Representatives**  
Patrick Maroney, Director, The Florida Catastrophic Storm Risk Management Center, discussed home mitigation credits and gave an update on the Center's activities.

**Jan. 5 - Presentation for the Western Risk and Insurance Association**  
Patrick Maroney, Director, The Florida Catastrophic Storm Risk Management Center, discussed relativity studies related to home hardening at the Western Risk and Insurance Association annual meeting.

[See All Center Outreach and Education](#) (2008-2010)

## 2010-11 Advisory Council



**Greg Baker** received a B.S. in Risk Management/Insurance from The Florida State University and holds a Master's degree from Boston University in Insurance Management. [Read More...](#)



**David Brooks, CPCU, ARM** is the SVP and Chief Risk Officer for XL Insurance, and is responsible for the identification and management of all material underwriting and enterprise risks throughout the organization. [Read More...](#)



**Allen Durham** is President and CEO of Star & Shield Risk Management LLC, the attorney-in-fact for Star & Shield Insurance Exchange, a home and auto reciprocal insurer for members of the law enforcement, corrections, fire rescue communities and their families. [Read More...](#)



**Dr. Jack M. Nelson, CFA**, is Senior Vice President and Chief Investment Officer for Everest Reinsurance Group, where he is responsible for overseeing the company's invested assets along with the assets of the employee pension plan. [Read More...](#)



**Dr. Jack Nicholson** is the Chief Operating Officer of the Florida Hurricane Catastrophe Fund (FHCF) for the State Board of Administration of Florida. [Read More...](#)



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**Franklin W. Nutter** is President of the Reinsurance Association of America (RAA), a position he has held since 1991, and from 1981-1984. In the interim, he was president of the Alliance of American Insurers and the Property Loss Research Bureau. [Read More...](#)



**Steve Wilder** is the Vice President of Risk Management for The Walt Disney Company, where he is responsible for directing Disney's worldwide corporate Risk Management program. [Read More...](#)



**Dr. Hugh Edward Willoughby** is a Research Professor of Meteorology in the Department of Earth and Environment at Florida International University. His hurricane-research interests include analysis of aircraft observations, formulation of theoretical models of motion and intensification, and analysis of economic and human impacts. [Read More...](#)

# Staff



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**Patrick F. Maroney,  
Director**

Patrick F. Maroney, Florida State's Kathryn Magee Kip Professor and former associate dean for graduate programs within the College of Business, directs the Florida Catastrophic Storm Risk Management Center. [Read More...](#)



**Lorilee A. Medders,  
Associate Director**

Prior to joining the Center, Dr. Medders was an Assistant Professor of Risk Management and Insurance in the J. Mack Robinson College of Business at Georgia State University. [Read More...](#)



**Charles M. Nyce,  
Associate Director**

Before joining the Center, Dr. Nyce served as Senior Director of Knowledge Re-sources at the American Institute for CPCU and the Insurance Institute of America. [Read More...](#)



**Sue Ellen Smith,  
Program Manager**

Sue Ellen Smith has more than 20 years of experience managing communications, special projects, and fundraising for nonprofit and academic organizations. [Read More...](#)



**Brad Karl,  
Graduate Assistant**  
[Read More...](#)



**David Pooser,  
Graduate Assistant**  
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**Ashley McCreadie,  
Assistant**  
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# Faculty

## **FSU College of Business Research Associates working with the Center** ([see all COB faculty bios](#))

Professor **Patricia "Patty" Born**. [Read More...](#)

Payne & Charlotte Hodges Midyette Eminent Scholar of Risk and Insurance **James M. Carson**. [Read More...](#)

Waters Fellow in Risk Management and Insurance and Associate Professor **Cassandra Cole**. [Read More...](#)

Peoples First Insurance Fellow and Associate Professor **Randy E. Dumm**. [Read More...](#)

State Farm Professor of Risk Management/Insurance and Associate Professor **Kathleen A. McCullough**. [Read More...](#)

## **Other Research Associates working with the Center** ([see all other researcher bios](#))

**Earl J. "Jay" Baker**. Since 1971, Dr. Baker has conducted studies to document how and why the public responds to hurricane threats. [Read More...](#)

**Martin Boyer**. Dr. Boyer is the CEFA Professor of Finance & Insurance and the former chairman of the Finance Department at HEC Montréal. [Read More...](#)



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**Dimitry Dukhovskoy**. Dr. Dukhovskoy's research interests are focused on numerical modeling of physical processes in the ocean. [Read More...](#)

**James Elsner**. Dr. Elsner is the Shaw Professor of Geography at Florida State University where he teaches applied statistics to graduate students. [Read More...](#)

**Henry Fuelberg**. Dr. Henry Fuelberg is the David W. Stuart Professor of Meteorology. [Read More...](#)

**Robert Hart**. Dr. Hart has been an Assistant Professor in the Department of Meteorology at Florida State University since 2003. [Read More...](#)

**Sungmoon Jung**. Dr. Jung is an Assistant Professor in the Department of Civil and Environmental Engineering at the joint College of Engineering by Florida A&M University - Florida State University. [Read More...](#)

**Forrest Masters**. Dr. Masters joined the University of Florida as an Assistant Professor of Civil and Coastal Engineering in 2006. [Read More...](#)

**Charles R. McClure**. Dr. McClure is the Francis Eppes Professor of Information Studies at the College of Information, Florida State University. [Read More...](#)

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**Steve Morey.** Dr. Morey's research focuses on studying physical processes and circulation within the Gulf of Mexico. [Read More...](#)

**Mark Powell.** Dr. Powell's research focuses on the hurricane, an episodic extreme event that is of utmost importance to the people of Florida. [Read More...](#)

**Philip Sura.** Dr. Sura joined the Department of Meteorology at Florida State University as an Assistant Professor in early 2008. [Read More...](#)