

ARINDAM GAN CHOWDHURY

Florida International University, College of Engineering,
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Arindam.Chowdhury@fiu.edu

EDUCATION

Iowa State University, Ames, IA 50011, USA

Doctor of Philosophy, Engineering Mechanics, Graduated in May 2004, GPA: 3.87/4.00

Indian Institute of Technology (IIT), Mumbai 400076, India

Master of Technology, Structural Engineering, Graduated in July 1995, GPA: 8.26/10

Jadavpur University, Kolkata 70019, India

Bachelor of Civil Engineering, Graduated in December 1992, Equivalent GPA: 7.3/10

RECEIPT OF MAJOR PRIZES OR AWARDS FOR OUTSTANDING ACHIEVEMENT

Received ***Iowa State University Research Excellence Award*** for Spring 2004 in recognition of outstanding research accomplishments in the field of ***Wind Structure Interaction***. His research accomplishments comprise a significant addition to the knowledge base in the discipline.

CURRENT JOB POSITION

Florida International University (Miami's Public Research University), Miami, Florida, USA

Assistant Professor, Tenure-Track Position, Department of Civil and Environmental Engineering (CEE)

Director, Laboratory for Wind Engineering Research, International Hurricane Research Center (IHRC)

ORIGINAL SCIENTIFIC OR SCHOLARLY RESEARCH CONTRIBUTIONS IN THE FIELD

- Dr. Chowdhury's prior research at Iowa State University (ISU) focused on flutter instability, an aeroelastic self-excited oscillation that can occur mainly in suspension or cable-stayed long-span bridges. His research has important potential applications in the development of future elements of the national transportation infrastructure.
- Dr. Chowdhury's current research at Florida International University (FIU) is enabling, for the *first-time ever*, innovative testing of full-scale structures fully engulfed in properly simulated hurricane flows, leading to performance-based design for hurricanes through direct correlation of wind speed with performance and damage levels. Dr. Chowdhury's current projects, funded by federal and state agencies and by private industry, will create a sound scientific basis for developing risk-based and performance-based design criteria, and contribute to the attainment of a national objective: *achieving more sustainable coastal communities*.

RESEARCH FUNDING ACQUIRED

A. Funding from Federal and State Agencies:

Funding Acquired as Principal Investigator (PI)-

- **National Science Foundation (NSF) Award** (NSF Award No. 0727871; FIU Account No. 212201502) was made on 08/16/07 with an effective date of 09/01/07.

PI: Arindam Gan Chowdhury; Co-PI: Amir Mirmiran; Faculty Associate: Emil Simiu

Project Title: Hurricane Wind Simulation and Testing to Develop Damage Mitigation Techniques

Award Amount: \$ 149,997.00

Award Duration: 09/01/2007 to 08/31/2009

• **Gulf of Mexico Regional Sea Grant Program Award**

PI: Arindam Gan Chowdhury (FIU); Co-PIs: Amir Mirmiran (FIU), Emil Simiu (FIU), Steve Cai (LSU)

Title: Development of Innovative Load Transfer Mechanism to Reduce Hurricane-Induced Failures in New and Existing Residential Construction

Award Amount: \$ 300,000.00

Award Duration: 02/01/2008 to 01/31/2010

• **Florida Sea Grant College Program Award**

PI: Arindam Gan Chowdhury, Co-PIs: Amir Mirmiran, Emil Simiu

Title: Full-Scale Simulation of Hurricane Effects on Residential Building Envelopes to Reduce Hurricane-Induced Losses

Award Amount: \$ 240,000.00

Award Duration: 02/01/2008 to 01/31/2010

• **Renaissance Reinsurance Holdings Ltd. (RenaissanceRe) Award** (FIU Account No: 120000589)

PI: Arindam Gan Chowdhury

Title: Full-Scale Wind Load Testing Using the Wall of Wind

Award Amount: \$ 377,485.00

Award Duration: Completed in May 2007

• **Florida Department of Community Affairs Award** (FIU Account No: 120001507)

PI: Arindam Gan Chowdhury

Title: Hurricane Loss Reduction for Housing in Florida 06-07

Award Amount: \$ 213,942.00

Award Duration: Completed in June 2007

• **Department of Commerce / National Oceanic & Atmospheric Administration (NOAA) Award** (FIU Account No: 120000594)

PI: Arindam Gan Chowdhury

Title: Florida Hurricane Alliance - Round 2

Award Amount: \$ 142,333.00

Award Duration: 01/01/2007 – 01/05/2009

• **Department of Commerce / National Oceanic & Atmospheric Administration (NOAA) Award** (FIU Account No: 120001506)

PI: Arindam Gan Chowdhury

Title: Florida Hurricane Alliance Round 3 - Surface Wind

Award Amount: \$ 76,969.00

Award Duration: Completed in Jan 2008

• **Florida Division of Emergency Management** (FIU Account No: 212201516)

PI: Arindam Gan Chowdhury

Title: Hurricane Loss Reduction (RCMP)

Award Amount: \$ 150,736.00

Award Duration: 02/15/2008 to 08/01/2008

Funding Acquired as Co-Principal Investigator (Co-PI)-

• **Florida Department of Community Affairs Award** (FIU Account No: 212201514)

PI: Amir Mirmiran, Co-PIs: Nakin Suksawang, Arrindam Gan Chowdhury, Ton-Lo Wang, Caesar Abi

Title: Performance of Gable End Wall Bracing Retrofit for Hurricane Protection

Award Amount: \$ 55,000.00

Award Duration: 01/02/2008 to 06/30/2008

Total: \$1,651,462 (as PI) \$55,000 (as Co-PI)

B. Funding from Industry:

	<u>Donation</u>	<u>State Match</u>
• Applied Insurance Research (AIR) Worldwide	\$50,000	\$50,000
• Florida Power & Light (FPL)	\$10,000	\$10,000
• Arch Aluminum and Glass	\$10,000	\$10,000
• Concrecel USA	\$7,500	\$7,500
• The Roofing Industry Alliance for Progress	\$100,000	\$100,000
• WeatherPredict Consulting Inc.	\$3,750	--
• WeatherPredict Consulting Inc.	\$5,000	--
• WeatherPredict Consulting Inc.	\$7,200	--
• TriCord Hurricane Products	\$7,500	--
Total:	\$200,950	\$177,500

AUTHORSHIP OF SCHOLARLY ARTICLES IN THE FIELD

Refereed Journal Publications

- **Gan Chowdhury, A.**, Sarkar, P.P. (2003). "A New Technique for Identification of Eighteen Flutter Derivatives using Three-Degree-of-Freedom Section Model." *Engineering Structures*, 25 (14), pp. 1763-1772.
- Sarkar, P.P., **Gan Chowdhury, A.**, Gardner, T. B. (2004). "A Novel Elastic Suspension System for Wind Tunnel Section Model Studies." *J. of Wind Engineering and Industrial Aerodynamics*, 92 (1), pp. 23-40.
- **Gan Chowdhury, A.**, Sarkar, P.P. (2004). "Identification of Eighteen Flutter Derivatives of an Airfoil and a Bridge Deck." *Wind and Structures*, 7 (3), pp. 187-202.
- **Gan Chowdhury, A.**, Sarkar, P.P. (2005). "Experimental Identification of Rational Function Coefficients for Time-Domain Flutter Analysis." *Engineering Structures*, 27 (9), pp. 1349-1364.
- Leatherman, S.P., **Gan Chowdhury, A.**, Robertson, C. J. (2007). "Wall of Wind Full-Scale, Destructive Testing of Coastal Houses and Hurricane Damage Mitigation," *Journal of Coastal Research*, 23 (5), p. 1211-1217.
- **Gan Chowdhury, A.**, Simiu, E., Leatherman, S.P. "Destructive Testing under Simulated Hurricane Effects to Promote Hazard Mitigation." Accepted for Publication, *ASCE Natural Hazards Review Journal*.

Other Refereed Publication

- **Gan Chowdhury, A.**, Leatherman, S.P. (2007). "Innovative Testing Facility to Mitigate Hurricane-Induced Losses," *EOS, Transactions, American Geophysical Union*, 88 (25), pp. 262.

Conference Publications

- Ganguly, K.K., **Gan Chowdhury, A.** (1996). "Concept of Ductility in Bridge Pier Design". *Symposium of Earthquake Effects on Structures (New Delhi, India)*. pp. V3.1-V3.13.
- **Gan Chowdhury, A.**, Sarkar, P.P. (2003). "Identification of Eighteen Flutter Derivatives." *Proceedings of the 11th International Conference on Wind Engineering (Lubbock, Texas, USA)*. pp. 365-372.
- **Gan Chowdhury, A.** and Sarkar P.P. (2004). "Extraction of Rational Function Coefficients for Flutter Analysis from Wind Tunnel Model Tests." *Proceedings of the Second Indian National Conference on Wind Engineering, Nagpur, India, Feb. 12-15, 2004*.
- **Gan Chowdhury, A.**, Simiu, E., Leatherman, S.P. (2007). "Hurricane Damage Mitigation of Coastal Houses." *Proceedings of the 12th International Conference on Wind Engineering (Cairns, Australia)*, pp. 1975-1982.

Invited Research Articles

- **Gan Chowdhury, A.**, Simiu, E., Lin, J., Leatherman, S.P. "Wall of Wind FIU," *The Wind Engineer, Newsletter of American Association for Wind Engineering (AAWE)*, October 2007.

Available Online:

[http://www.aawe.org/docs/newsletters/NewsletterAAWE\(2007\)-10.pdf](http://www.aawe.org/docs/newsletters/NewsletterAAWE(2007)-10.pdf)

- **Gan Chowdhury, A.**, "Wall of Wind Hurricane Research at Florida International University," Applied Insurance Research (AIR), AIR Currents, August 2007.

Available Online:

http://www.air-worldwide.com/_public/html/air_currentsitem.asp?ID=1281

- **Gan Chowdhury, A.**, "Hurricane Risk Mitigation through Innovative RenaissanceRe Wall of Wind Research," Professional Roofing Magazine, National Roofing Contractors Association (NRCA), scheduled for June 2008.

LIST OF GRADUATE STUDENTS SUPERVISED AND UNDER SUPERVISION

Dr. Chowdhury is/was the Major Professor and Dissertation/Thesis Advisor for the students listed:

Ph.D. Students:

Bo Yu (Graduated Fall 2007), Ivan Canino (in progress), Ruilong Li (in progress)

M.S. Students:

Collette Blessing (Graduated Summer 2007), Francisco M. Gonzalez (Graduated Fall 2006), Eva Porras (Graduated Fall 2007), Roy Liu (in progress), Jimmy Erwin (in progress), Sheikh Saad Ahmed (in progress)

PARTICIPATION IN MAJOR INTERNATIONAL AND NATIONAL CONFERENCES AND FORUMS IN THE FIELD

Session Chair at Major International Conference in the Field:

Session Chair at the **4th International Conference on Advances in Wind and Structures** (AWAS'08) (May 2008, Jeju, Korea) and member of the *International Advisory Committee* for AWAS'08.

Panelist in Major National Conference or Forum in the Field:

- Panelist at the **Hurricane Risk Mitigation Leadership Forum** (Orlando, Florida, February 2008).
Panel Title: Moving the Latest Innovations from Theory to Market
Panel Theme: Understanding the physics of failure is crucial to creating economical loss mitigation techniques. This panel will include the foremost academics who are actively working to understand the forces on structures from high winds and what can be done to mitigate these forces.
- Panelist at the **12th CIGMAT Annual Conference** on "Construction, Geotechnical and Flooding Issues Related to Houston & Other Major Cities" (Houston, Texas, March 2007)
Panel Title: Hurricane and Geotechnical Issues

Presentations at Major International and National Conferences in the Field:

- **Gan Chowdhury, A.**, "Identification of Eighteen Flutter Derivatives," 11th International Conference on Wind Engineering, Lubbock, Texas, June 2003.

- **Gan Chowdhury, A.**, "Hurricane Damage Mitigation of Coastal Houses," 12th International Conference on Wind Engineering, Cairns, Australia, July 2007.
- **Gan Chowdhury, A.**, "Full-Scale Wind Testing," American Society of Civil Engineers (ASCE) National Conference, Symposium on Hurricanes and Insurance, Orlando, Florida, November 2007.

LIST OF OTHER INVITED TALKS AND PRESENTATIONS IN THE FIELD

- **Gan Chowdhury, A.**, "Wall of Wind Innovative Testing," Department of Civil and Environmental Engineering, Texas Tech University, Lubbock, Texas, November 2006.
- **Gan Chowdhury, A.**, "Lessons Learned from Hurricanes in Florida and Related Issues," Center for Innovative Grouting Materials and Technology (CIGMAT), University of Houston, Houston, Texas, March 2007.
- **Gan Chowdhury, A.**, "Wall of Wind Full-Scale Testing," Workshop on Full-Scale Wind Testing and Measurements, Attended by NSF, U.S. and Canada Universities and Industries, International Hurricane Research Center at Florida International University, Miami, Florida, March 2007.
- **Gan Chowdhury, A.**, "RenaissanceRe Wall of Wind Facility," Florida Concrete Association Meeting, Miami, Florida, April 2007.
- **Gan Chowdhury, A.**, "Wall of Wind Innovative Testing," Florida Building Commission -- Hurricane Research Advisory Committee Meeting, Tampa, Florida, August 2007.
- **Gan Chowdhury, A.**, "Wall of Wind," South Florida Structural Engineers Association (FSEA) Meeting, Miami, Florida, October 2007.
- **Gan Chowdhury, A.**, "Wall of Wind Hurricane Damage Mitigation," The Roofing Industry Alliance for Progress Meeting, Washington, D.C., October 2007.
- **Gan Chowdhury, A.**, "Building a Stronger Tomorrow," Delegation from Tsinghua University of China, International Hurricane Research Center at Florida International University, Miami, Florida, November 2007.
- **Gan Chowdhury, A.**, "Wall of Wind," Florida Coastal Ocean Observing Systems Consortium Caucus 12, Southeast Environmental Research Center and International Hurricane Research Center, Miami, Florida, November 2007.
- **Gan Chowdhury, A.**, "Wall of Wind Research -- Moving Innovations from Theory to Applications," Hurricane Risk Mitigation Leadership Forum, Orlando, Florida, February 2008.
- **Gan Chowdhury, A.**, "Wall of Wind Full Scale Testing," Building Officials Meeting, Building Code Compliance Office (BCCO), Miami-Dade County, Florida, March 2008.

ARTICLES PUBLISHED ON OTHER PROFESSIONAL ACCOMPLISHMENT

- An article named '**Meeting the Challenge**' was published in March/April 2003 issue of '**Iowa Conservationist**' Magazine. The article describes Arindam Gan Chowdhury's various accomplishment regarding product/process improvements using aerodynamic and other solutions at **Lear Corporation** during summer of 2002. Accomplishments include- a) Implemented cost reduction: \$467,000/year, b) Additional projected cost reduction: \$1.66 million/year.

RESEARCH OUTREACH THROUGH MEDIA EVENTS AND PRESS RELEASES

(Video Clips and Reports for Media Events and Press Releases can be accessed by using the links given)

A. List of Media Events on Wall of Wind Research under Dr. Chowdhury:

- Discovery Channel (Canada) – October 2007:
(video is available at <http://www.renre.com/wow-movies/WOW-video.wmv>)
- USA Today – August 2007:
http://www.usatoday.com/weather/storms/hurricanes/2007-08-14-hurricanetest_N.htm?csp=34&POE=click-refer
- Wall Street Journal – August 2007: <http://online.wsj.com/article/SB118645176721890109.html>
- ABC World News Tonight – July 2007
Link not available, ABC World News Video Clip can be provided upon request
- NBC 6 – October 2006: <http://www.nbc6.net/newsnet/10062514/detail.html>
- NBC 6 – September 2006: <http://www.nbc6.net/news/9856950/detail.html?subid=10101481>

B. List of Press/Media Releases on Hurricane Expertise and Research of Dr. Chowdhury:

- **FIU Hurricane Experts 2007** – August 2007
http://news.fiu.edu/releases/2007/08-06_hurricane_experts.htm
- **FIU's Wall of Wind to Improve Hurricane Damage Research** – September 2006
http://news.fiu.edu/releases/2006/09-13_wallofwind.htm
- **AIR Worldwide Collaborates with FIU to Enhance Understanding of Hurricane Vulnerabilities** – May 2007, <http://www.air-worldwide.com/public/html/newsitem.asp?ID=1206>

PROFESSIONAL MEMBERSHIPS

- Faculty Member of **Chi Epsilon** National Civil Engineering Honor Society
- Member of American Society of Civil Engineers (ASCE)
- Member of American Association for Wind Engineering (AAWE)
- Member of Florida Structural Engineers Association (FSEA)

PAST WORK EXPERIENCE

Thorton Tomasetti (International Engineering Company), Fort Lauderdale, Florida, USA
Project Director, November 2005 to June 2006

Lear Corporation (Multi-National Automotive Company), Iowa City, Iowa, USA

Project Engineer, November 2003 to October 2005

Iowa Department of Natural Resources, IA 50319, USA (Posted at Lear Corporation, Iowa City, IA)

Pollution Prevention Intern, Summer 2002: May 20th-August 9th

M/s. Shapers, Kolkata 700 045, India

Partner and Project Engineer, January 1998 to July 2000

Development Consultants Limited, Kolkata 700035, India

Structural Engineer, March 1995 to December 1997

Simplex Concrete Piles Limited, Kolkata 700020, India

Student Engineer, September 1992 to June 1993