**PROGRAM**

**Sunday, August 12**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>5:00 – 5:30 pm</td>
<td>Registration desk opens</td>
<td>(Second floor, Hotel Lobby)</td>
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<tr>
<td>5:30 – 7:30 pm</td>
<td>Welcome Reception</td>
<td>“Resort Barbeque” (Cabana Tent area; inclement weather: Cape Cod Room) ‡</td>
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<tr>
<td>7:30 – 9:00 pm</td>
<td>AAWE Board Meeting</td>
<td>(Barnstable 1)</td>
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All workshop sessions will be in Hyannisport Room (Hotel, 2nd floor). Every presentation other than those in the plenary sessions is scheduled for 15 minutes (12 min. for presentation, 2 min. for questions and 1 min. for transition). Breakfast, lunch and dinner will be in Cape Cod Room (Hotel, 2nd floor). Breaks will be on the 2nd-floor Lobby of the Hotel.

All posters must be set up in the designated area of Hyannisport on 8/13 during breakfast and will remain on display until 8/14. Dimensions of the poster boards are 48 inches (wide) by 36 inches (high); material for mounting posters will be provided in the poster area.

Affiliation of the main author is only shown in this program. Please refer to the electronic proceedings for the complete list of affiliations.

**Monday, August 13**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:30am</td>
<td>BREAKFAST ‡</td>
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<tr>
<td>8:30am</td>
<td>WELCOME REMARKS</td>
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<tr>
<td></td>
<td>Luca Caracoglia, Chairman - 3rd AAWE Workshop, Northeastern University</td>
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<td></td>
<td>Jerome F. Hajjar, Professor and Chair, Dept. of Civil and Envir. Engr., Northeastern University</td>
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<td>Partha P. Sarkar, AAWE President and Co-Chairman - 3rd AAWE Workshop, Iowa State Univ.</td>
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<tr>
<td>8:50am</td>
<td>PLENARY SESSION A (Moderators: Sarkar/Caracoglia)</td>
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<tr>
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<td>(A1) Wind hazard and community resiliency (ID 50)</td>
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<tr>
<td></td>
<td>Kishor C. Mehta</td>
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<td></td>
<td>National Science Foundation, Arlington, VA, USA</td>
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<td></td>
<td>(A2) Assessing climate change impact on the US east coast hurricane hazard II: Sea temperature and hurricane frequency (ID 02)</td>
</tr>
<tr>
<td></td>
<td>Lauren Mudd, Yue Wang, Chris Letchford*, David Rosowsky</td>
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<td>Rensselaer Polytechnic Institute, Troy, NY, USA</td>
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<tr>
<td>9:30am</td>
<td>SESSION 1 - Wind Hazard Modeling and Assessment (Moderators: Schroeder/Masters)</td>
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<tr>
<td></td>
<td>(1a) Cyberbased analysis, modeling and simulation of wind load effects in VORTEX-Winds (ID 08)</td>
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<tr>
<td></td>
<td>Ahsan Kareem*, Dae Kun Kwon, Yukio Tamura</td>
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<td>University of Notre Dame, Notre Dame, IN, USA</td>
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* Lead presenter, ID: Abstract ID (see Book of Abstracts), PS: Poster Session, ‡ Poster presentation
‡ Included in registration fee
(1b) Data-driven models for analysis and simulation of extreme wind events (ID 12)
   Megan McCullough*, Ahsan Kareem
   University of Notre Dame, Notre Dame, IN, USA

(1c) Human perception of surface wind, rain and water current (ID 41)
   Forrest J. Masters*, Greg A. Webster, Duzgun Agdas
   University of Florida, Gainesville, FL USA

(1d) Progress on development of an updated United States extreme wind climatology for wind load design (ID 35)
   Franklin T. Lombardo
   National Institute of Standards and Technology, Gaithersburg, MD, USA

10:30am BREAK† with POSTER SESSION

(PS1) Failure vs. Flight: An experimental study of wind speeds associated with flight of residential roof structures† (ID 20)
   Sarah Elizabeth Stenabaugh*, Gregory A. Kopp
   Western University, London, Ontario, Canada

(PS2) Load sharing of toe-nailed, roof-to-wall connections under extreme wind loads† (ID 15)
   Mohammad Abrar A. Khan*, David J. Henderson, Murray J. Morrison, Gregory A. Kopp
   Western University, London, Ontario, Canada

10:45am SESSION 2 - Fluid-structure Interaction and Wind-induced Failure
   (Moderators: Kareem/Cai)

(2a) Influence of solid area distribution on the drag of a 2-D lattice frame (ID 21)
   Thomas G. Mara
   Western University, London, Ontario, Canada

(2b) Wind-induced vibration of mast arm traffic signal support structure of various configurations (ID 17)
   Jieying Hua*, Delong Zuo
   Texas Tech University, Lubbock, TX, USA

(2c) Vortex induced vibrations of inclined flexible cylinders in flow (ID 18)
   Banafsheh S. Aghazadeh*, Yahya Modarres-Sadeghi
   University of Massachusetts, Amherst, MA, USA

(2d) Wind-tunnel testing of an inclined stay cable with a helical fillet (ID 45)
   Harold R. Bosch
   Aerodynamics Laboratory, Federal Highway Administration, McLean, VA, USA

(2e) Determining remaining fatigue life of in-situ mast-arm traffic signal supports (ID 03)
   Michelle Riedman*, Christopher Letchford, Michael O’Rourke
   Rensselaer Polytechnic Institute, Troy, NY, USA

(2f) Modelling the failure of inter-connected roof-to-wall connections in residential wood framed buildings under realistic wind loads (ID 06)
   Tushar Kanti Guha*, Gregory A. Kopp
   Western University, London, Ontario, Canada

12:15pm LUNCH‡

* Lead presenter, ID: Abstract ID (see Book of Abstracts), PS: Poster Session, † Poster presentation
‡ Included in registration fee
1:45pm  SESSION 3 - Tornado and Thunderstorm Outflow (Moderators: Letchford/Jones)

(3a) The 19 May 2012 Tornadoes (ID 47)
    Maryam Refan, Horia Hangan*
    Western University, London, Ontario, Canada

(3b) Effect of tornado size on forces on thin 2D cylinder (ID 37)
    R. Panneer Selvam, Piotr Gorecki*
    University of Arkansas, Fayetteville, Arkansas, USA

(3c) Mitigation of tornado effects-a study of the shielding effects of hills (ID 46)
    R. Panneer Selvam, Quentin S. Ragan*
    University of Arkansas, Fayetteville, Arkansas, USA

(3d) Study of microburst simulation models and wind loading effects (ID 07)
    Yan Zhang*, Partha P. Sarkar, Hui Hu
    Iowa State University, Ames, IA, USA

(3e) High-resolution full-scale observations of thunderstorm outflow winds (ID 28)
    W. Scott Gunter*, John L. Schroeder
    Texas Tech University, Lubbock, TX, USA

(3f) Near-surface turbulence characteristics of thunderstorm outflow in Texas Tech University Ka-band mobile Doppler radar observations (ID 36)
    Patrick S. Skinner*, Christopher C. Weiss, W. Scott Gunter, John L. Schroeder
    Texas Tech University, Lubbock, TX, USA

3:15pm  BREAK‡ with POSTER SESSION

(PS3) Numerical investigation of wind-induced pressure loads on low-rise residential buildings with complex roof shapes† (ID 51)
    Agerneh K. Dagnew, Girma T. Bitsuamlak*, Edward Ledesma
    Florida International University, Miami, FL, USA

(PS4) Turbulent flow mechanism for inclined and yawed stay cables† (ID 52)
    Michael S. Hoftyzer*, Elena Dragomirescu
    University of Ottawa, Ottawa, Canada

3:30pm  SESSION 4 - Low-rise Buildings (Moderators: Selvam/Bitsuamlak)

(4a) Ongoing research on the wind resistance of asphalt shingles (ID 19)
    University of Florida, Gainesville, FL

(4b) Refined modeling of a typical low-rise building under hurricane loads using finite element models (ID 24)
    Fang Pan*, C. S. Cai, Wei Zhang
    Louisiana State University, Baton Rouge, LA, USA

(4c) Wind loads on roof mounted equipment on low-rise buildings (ID 27)
    Murray J. Morrison*, Chuck Miccolis, Anne Cope
    Insurance Institute for Business & Home Safety, Richburg, SC, USA

(4d) Development of a model for predicting pressure moderation across cladding systems (ID 01)
    Randy Van Straaten*, Gregory A. Kopp
    Western University, London, Ontario, Canada

* Lead presenter, ID: Abstract ID (see Book of Abstracts), PS: Poster Session, † Poster presentation
‡ Included in registration fee
(4e) A stochastic approach to assess the progression of failures leading to total collapse in wood frame residential structures (ID 40)
Joseph B. Dannemiller*, Douglas A. Smith, Stephen M. Morse
Texas Tech University, Lubbock, TX, USA

(4f) Gutter aerodynamics and their effect on near eave roof pressure (ID 32)
Workamaw P. Warsido*, Girma T. Bitsuamlak
Florida International University, Miami, FL, USA

(4g) Hurricane-induced interior damage to low-rise buildings: a status report of ongoing research at Florida International University (ID 34)
Thomas Baheru*, Arindam Gan Chowdhury, Jean-Paul Pinelli
Florida International University, Miami, FL, USA

(4h) Large-scale measurements of the wind induced external convective heat transfer coefficient for building envelope (ID 39)
Thomas Baheru, Ramtin Kargarmoakhar*, Arindam Gan Chowdhury, ChengXian Lin
Florida International University, Miami, FL, USA

**Tuesday, August 14**

7:30am  **BREAKFAST**‡

8:30am  **PLENARY SESSION B** (Moderator: Mehta)

(B1) Measurements of utility-scale turbine wakes using the Texas Tech University Ka-band mobile research radars (ID 14)
Brian D. Hirth, John L. Schroeder*
Texas Tech University, Lubbock, TX, USA

(B2) Wind tunnel input for performance based design (ID 25)
Bhami Ilyas, Jason Garber, Jon Galsworthy*
RWDI Inc., Guelph, Ontario, Canada

9:10am  **SESSION 5 - Tall Buildings**  (Moderators: Reed/Butler)

(5a) A cohesive performance-based optimization framework for the design of tall buildings subject to wind loads (ID 13)
Sarah Bobby*, Seymour M.J. Spence, Daniel Wei, Enrica Bernardini, Ahsan Kareem
University of Notre Dame, Notre Dame, IN, USA

(5b) Synthesis of wind tunnel and climatological data in wind-induced response estimation of tall buildings (ID 31)
Workamaw P. Warsido*, Girma T. Bitsuamlak
Florida International University, Miami, FL, USA

(5c) Estimating extremes of combined Gaussian and non-Gaussian response processes (ID 05)
Kuangmin Gong*, Xinzhong Chen
Texas Tech University, Lubbock, TX, USA

* Lead presenter, ID: Abstract ID (see Book of Abstracts), PS: Poster Session, ‡ Poster presentation
‡ Included in registration fee
(5d) Wind borne debris impact generated damage to cladding of high rise building (ID 48)
   Anurag Jain
   Weidlinger Associates, Inc., Marina del Rey, CA, USA

10:10am BREAK† with POSTER SESSION

(PS5) Wind-borne debris trajectory estimation using computer generated turbulent wind field† (ID 04)
   Farid Moghim*, Luca Caracoglia
   Northeastern University, Boston, MA, USA
(PS6) Wind effect on photovoltaic solar systems in single and cluster arrangements† (ID 53)
   Sathya Baskaran*, Elena Dragomirescu, Paul Wilson
   University of Ottawa, Ottawa, Canada

10:25am SESSION 6 - Renewable Energy Systems (Moderators: Jain/Hangan)

(6a) A wind-tunnel investigation of the wake behind a wind-turbine in a turbulent boundary-layer flow (ID 22)
   Steve Cochard, Daniel Lander*
   The University of Sydney, Sydney, NSW, Australia
(6b) Lidar-enhanced pitch control for optimized wind turbine performance (ID 23)
   Rachit R. Mathur*, Jennifer Rice, Andrew Swift, Jamie Chapman
   Texas Tech University, Lubbock, TX, USA
(6c) Wind Loadings on Solar Panels (ID 33)
   Dorothy A. Reed
   University of Washington, Seattle, WA, USA
(6d) Wind load on solar panel experiment (ID 49)
   Erin K. Dowds, Jennifer S. Harris*, Frederick R. Rutz
   University of Colorado-Denver, Denver, Colorado
(6e) Numerical and experimental study of wind effects on photovoltaic (PV) panels (ID 29)
   Chowdhury Jubayer, Ayodeji Abiola-Ogedengbe, Kamran Siddiqui, Horia Hangan*
   Western University, London, Ontario, Canada
(6f) Pressure equalization and analytical solution for pressures underneath the outer layer in double skin envelopes (ID 16)
   Jeong Hee Oh*, Gregory A. Kopp
   Western University, London, Ontario, Canada
(6g) Design wind loads for photovoltaic systems mounted on sloped roofs of low-rise residential buildings (ID 26)
   Yumi Iida, Sarah Elizabeth Stenabaugh, Gregory A. Kopp*, Panagiota Karava
   Western University, London, Ontario, Canada

12:10pm LUNCH‡

1:40pm SESSION 7 – Slender Bridges and Cables (Moderators: Galsworthy/Lombardo)

(7a) Nonlinear aerodynamic and aeroelastic analysis framework for cable-supported bridges (ID 11)
   Teng Wu*, Ahsan Kareem
   University of Notre Dame, Notre Dame, IN, USA
(7b) A numerical algorithm for predicting life-cycle maintenance costs for slender bridges under wind hazards (ID 10)

*Dong-Woo Seo*, Luca Caracoglia
Northeastern University, Boston, MA, USA

(7c) A stochastic approximation algorithm for simulating wind-induced nonlinear dynamics of cable networks (ID 09)

**Gian Felice Giaccu***, Bernardo Barbiellini-Amidei, Luca Caracoglia
University of Cagliari, Cagliari, Italy

(7d) Study on a recently-developed impact damper for reducing wind-induced cable-stay vibration (ID 38)

**Philipp Egger***, Luca Caracoglia, Johann Kollegger
Vienna University of Technology, Vienna, Austria

2:40pm BREAK

2:50pm SESSION 8 - Full-scale Measurements (Moderators: Bosch/Morrison)

(8a) Remote sensing in wind damage analysis (ID 42)

**Lin Cong***, Daan Liang, Brian Nutter
Texas Tech University, Lubbock, TX, USA

(8b) Characteristics of wind in an atmospherically stable boundary layer (ID 43)

**Delong Zuo**, Jingting Xiao*
Texas Tech University, Lubbock, TX, USA

(8c) An analysis of the kinematic variability within the hurricane boundary layer using the coastal WSR-88D radar network (ID 30)

**Richard J. Krupar III***, John L. Schroeder
Texas Tech University, Lubbock, TX, USA

3:35pm CLOSING REMARKS

3:45pm ADJOURN