



# TEXAS TECH UNIVERSITY National Wind Institute™

December 2015—Issue 77

## NWI hosts External Advisory Board annual meeting

The National Wind Institute welcomed its External Advisory Board (EAB) to their annual meeting held on Thursday, November 5, 2015 at TTU's newly commissioned Research Park.

The meeting started with the State of the Institute delivered by NWI's Interim Director - Daan Liang. Three NWI faculty affiliates - Eric Bruning, Miao He, and John Schroeder - had the opportunity to present their latest projects to the board.

Dr. Robert V. Duncan, Senior Vice President for Research, introduced TTU's vision on research and commercialization and provided an update on its progress towards becoming a Tier One University.

In the afternoon, participants attended two concurrent breakout sessions: one focused on wind-related research and the other on education.

After that, the board members reconvened in closed-door session, drafting a summary report on NWI's strengths, weaknesses, and recommendations for improvement.

Attending EAB members at this meeting were David Minster (Sandia National Labs), Brian Smith, M.S. (National Renewable Energy Laboratory), Tim Reinhold (Institute for Business and Home Safety), Kevin Van Leer (in substitution for Michael Young, RMS), Gregg Kopp (University of Western Ontario) and Billy Cavender (Nextera).



*(Above) - Members of the NWI External Advisory Board, NWI faculty and staff take a photo break during the day-long annual meeting. L-R back row: Dr. Daan Liang, NWI Interim Director, Dave Minster (Sandia National Laboratories), Billy Cavender (Nextera), Brian Smith (NREL), Kevin van Leer (in substitution for Michael Young, both at RMS), Dr. John Schroeder (NWI faculty affiliate), Dr. Doug A. Smith (NWI faculty affiliate), Dr. Gregg Kopp (University of Western Ontario), Dr. Delong Zuo (NWI faculty affiliate) and Dr. Andy Swift (NWI Associate Director of Education). L-R front row: Dr. Eric Bruning (NWI faculty affiliate), Dr. Anna Young (NWI Associate Director), Dr. Robert V. Duncan (TTU Vice President of Research), Dr. Tim Reinhold (Institute for Business and Home Safety), Kacey Young (NWI Lead Advisor), and Dr. Kishor Mehta (NWI faculty affiliate and co-founder). (Photo: Liz Inskip-Paulk, TTU-NWI.)*



*(Left) - Members of the NWI External Advisory Board (EAB) attend to a discussion at the meeting. Many thanks to all the members who participated in this year's 2015 meeting.*

## McDonald-Mehta Lecture Series welcomes Dr. Julie Lundquist and Dr. John van de Lindt

The McDonald-Mehta Lecture Series recently hosted two lectures led by innovative researchers in the wind field: Dr. Julie Lundquist (University of Colorado at Boulder) and Dr. John van de Lindt from Colorado State University.

Dr. Lundquist lectured on “Downwind Impacts of Wind Energy: Measurements and Simulations of Wakes” whilst Dr. van de Lindt lectured on “Wood Building Design for Performance and Resilience to Natural Hazards.”

Dr. Lundquist is an Assistant Professor in the Department of Atmospheric and Oceanic Sciences and a Fellow at the Renewable and Sustainable Energy Institute at the University of Colorado at Boulder. Additionally, Dr. Lundquist works as a scientist in the National Wind Technology Center at the National Renewable Energy Laboratory (NREL).

Dr. van de Lindt is the George T. Abell Distinguished Professor in Infrastructure in the Department of Civil Engineering at Colorado State University.

The McDonald-Mehta Lecture Series is named after and funded with the endowment of Dr. Kishor C. Mehta and Dr. James R. MacDonald, co-founding faculty members of the National Wind Institute at Texas Tech. The lecture series invites nationally-known scientists and experts in wind-related industries to speak about ongoing research around the world.

Thanks to all who were involved in making the Fall 2015 lecture series run smoothly.

Keep a look out for the Spring 2016 schedule of the McDonald-Mehta Lecture Series — coming soon.



(Above L-R) - Dr. Julie Lundquist stands with Dr. Kishor Mehta, one of the NWI co-founders and a name-sake of the McDonald-Mehta Lecture Series.



(Above)- Dr. John van de Lindt from Colorado State University and a speaker in the McDonald-Mehta Lecture Series.

## NWI GRANTS AND CONTRACTS — NOVEMBER 2015

Investigator	Unit	Credit	Award Amount Credited	Title	Agency	Project Period
Boal, Clint	Coop. Fish and Wildlife Research Unit, CASNR	100%	\$50,000	(NWI) SNL/TTU Bird and Bat Environmental Study for the Experimental Wind Farm	DOE Sandia National Laboratories	09/01/2013-09/30/2016



## West Texas Mesonet Network opens station in Snyder



NWI and the West Texas Mesonet (WTM) Network recently hosted a ribbon cutting for the 93rd station in collaboration with Western Texas College (WTC) in Snyder.

This WTM station is the first project that TTU-NWI and WTC have built together and will allow WTC students hands-on experience in the field while also providing meteorological data for the area.

Faculty and staff from NWI along with Dr. Barbara Beebe, West Texas College President (second from left), and NWI's Wes Burgett (center right and WTM Manager), Andrew Burchock (second from right) and Dr. Chris Pattison (far right) were in attendance along with other representatives.

## EPRI and Wu Tan Clan lead singer visits NWI



The National Wind Institute is committed to reaching younger people far and wide to provide a stepping stone to potential STEM-related careers for each of them. As part of this strategy, we are always open to working with numerous types of media to reach those students who may be touch to reach otherwise.

And so it was that the lead singer from Wu Tan Clan, one of hip-hop's most innovative bands, arrived at the NWI research facility one chilly morning in November.

GZA (or the Genius) proved to be a quick study in learning about wind-related topics during the visit, and Professor Larry Tanner and Dr. Darryl James (ME) were both generous with their time and knowledge during the morning.

The show, to be aired on Red Bull Media, an app-based outlet, is planned to be released in 2016.

Stay tuned for more!

*(Left) - Hip-hop group Wu Tan Clan's lead singer, GZA, recently visited the NWI research facilities to film footage for inclusion in a new series promoting STEM topics to be featured on the Red Bull Media outlet. Research Professor Larry Tanner (red shirt) stands ready to lead GZA through the whole process.*

*(Right) - NWI faculty affiliate Dr. Darryl James (Mechanical Engineering) (left) explains some details for Stephen Hess and the group from Electric Power Research Institute (EPRI) who also visited the NWI.*

*As always, thank you to all who helped with these visits.*



## NWI SCHOLARLY UPDATE: NOVEMBER 2015



(Above) Venkatesh Yadav Singarao, doctoral candidate in NWI.

- NWI doctoral student Venkatesh Yadav Singarao recently defended his dissertation titled “Improving Grid Frequency Response using Wind Generation Resources.” Venkatesh’s committee members included Drs. Vittal S. Rao (ECE) (Advisor), Stephen Bayne (ECE), Andrew P. Swift (NWI), and Arquimedes Ruiz (NWI).
- NWI doctoral student Hoonill Won was recently published (along with lead author NWI faculty affiliate Song Lak Kang) in the *Journal of Wind Engineering and Industrial Aerodynamics*. (See below for more details.)

### OTHER SCHOLARSHIP ACHIEVEMENTS:

Kang, S.-L., and H. Won (2015). “Intra-Farm Wind Speed Variability Observed by Nacelle Anemometers in a Large Onshore Wind Farm.” *Journal of Wind Engineering and Industrial Aerodynamics*. Accepted.

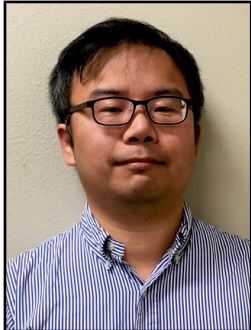
### CONFERENCES/WORKSHOPS ATTENDED:

- Dr. Daan Liang was invited to present at the Linking Workshop organized by the Centre for Innovation in Wind Energy of Mexico (CEMIE-Eolico) held on November 26 -27 in Mexico City.

### PROFESSIONAL EMPLOYMENT OPPORTUNITY:

Sandia National Laboratories is seeking a BS or MS level candidate interested in test, control, instrumentation and/or electro-mechanical engineering. The successful individual must be highly motivated, quick to learn, and eager to work in an outdoor setting. The position will mainly supporting the Scaled Wind Farm Testing (SWiFT) facility.

To access SNL postings, go to [www.sandia.gov/careers](http://www.sandia.gov/careers), select “View All Jobs” and enter **651821** in the Keywords search box.



(Above) Hoonill Won, doctoral candidate in NWI.

## Bruning research is focus on AGU website



NWI faculty affiliate Dr. Eric Bruning (ATMO) (see image on left) and his research project on lightning was recently featured on the Association of Geophysical Union’s JGR-Atmosphere’s EOS.org website.

The AGU’s Research Spotlight summarizes the research and findings of the best accepted articles for the broad Earth and space science community.

Dr. Bruning’s research project is titled “Lightning Channel length and flash energy determined from the moments of the flash area distribution” and can be seen at this link: <https://eos.org/research-spotlights/how-long-is-a-bolt-of-lightning>.

NWI is proud of our innovative faculty affiliates!

*If you are interested in having your latest scholarly endeavors featured in the next NWI newsletter, please forward your information (publications, proceedings, conference/workshop attendance, or other news etc.) to Liz Inskip-Paulk (email: [Elizabeth.paulk@ttu.edu](mailto:Elizabeth.paulk@ttu.edu)). Go Red Raiders!*