The National Wind Resource Center (NWRC)-
A Model for Sustainability and Human Potential

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ABSTRACT
As the world faces high prices and political tensions for finite fossil fuel supply and growing concerns about climate change, alternate sources of energy are becoming more attractive. The development of renewable energy technologies is threatened by an insufficient number of students seeking graduate studies in multidisciplinary science and engineering fields, and completing their studies with the knowledge and leadership skills needed in today’s global economy. The traditional passive approach towards education coupled with the high cost of education hinders our ability to attract & retain US students into STEM fields. Consequently, student enrollment and retention in graduate programs continue to decrease at an alarming rate. Therefore, we need new strategies that engage the Y-Generation in and outside the classroom. Energy, Environment, & Education synergize solutions that will enhance our national security. In this seminar, I will present an overview of the National Wind Resource Center its vision toward making Texas the Wind Tech Corridor of the World and its possible implications for other centers specifically as it relates to sustainability and human potential. Start-ups will be created within the center by means of an incubator (including a virtual component) geared toward engaging not only multi-disciplinary teams focus on entrepreneurship, but also will spark transformation within the local community and international society at large. Finally, the center will play a key role in increasing the number of graduate students and their retention rate as well as enhance the diversity and quality of instruction at partner institutions.

BIOGRAPHY
Luciano Castillo is the Don-Kay-Clay Cash Distinguished Engineering Chair in Wind Energy and the Executive Director/President of the National Wind Resource Center (NWRC) at Texas Tech University. After spending 12 years at Rensselaer Polytechnic Institute he joined the ME department at TTU in 2011. His research in turbulence using experimental techniques, direct numerical simulations and multi-scale asymptotic analysis has injected new ideas in turbulent boundary layers and improved our understanding drag reduction and wind energy performance. Some of his awards include: the NASA Faculty Fellowship, the Martin Luther King Faculty Award, and the Robert T. Knapp Award on complex flows from the ASME among others. He published over 100 articles including a seminal paper on turbulent boundary layers and scaling laws.