

SMART Wind Consortium

Electrical Subgroup





Electrical Subgroup Lead
Ruth Douglas Miller, Ph.D.

Associate Professor, Electrical and Computer Engineering
Kansas State University, Manhattan, KS
rdmiller@ksu.edu



Distributed Wind Activities

- High Plains Small Wind Test Center
 - DOE/NREL Small Wind Test Center grant
 - collaboration with Colby Community College and Midwest Energy
 - Currently testing two small turbines to AWEA Standard



Distributed Wind Activities

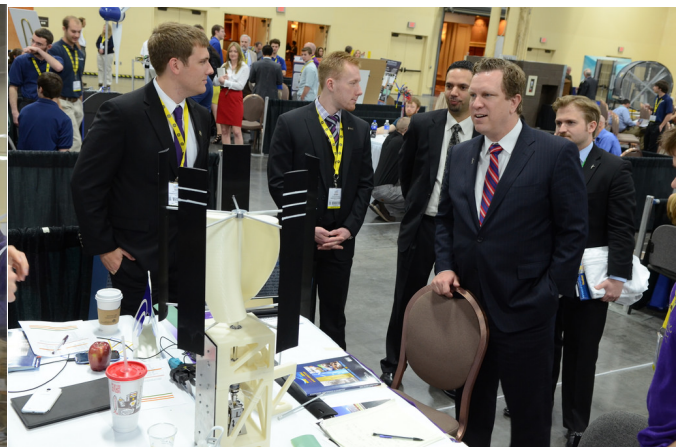
- Novel inverter design:
 - 7- and 11-level modular multilevel converter topology
 - Power factor compensation included in control system
- Modeling renewables on microgrids
 - Maximize energy from renewables
 - Minimize grid losses
 - Maximize power reliability



Distributed Wind Activities

COLLEGIATE
WIND COMPETITION
U.S. DEPARTMENT OF ENERGY

- DOE Collegiate Wind Competition
 - 10 teams in initial 2014 competition
 - Continuing design work in 2015
 - Second funded Competition planned for 2016



Distributed Wind Activities

- Wind for Schools Communications
 - Support 11 states operating Wind for Schools wind turbines
 - OpenEI database for energy production and education:
http://en.openei.org/wiki/Wind_for_Schools_Portal

