

## **Agustín A. Irizarry-Rivera, Ph.D., P.E.**

Dr. Agustín A. Irizarry-Rivera obtained his B.S. from the University of Puerto Rico Mayagüez in 1988, his M.S. from the University of Michigan, Ann Arbor in 1990 and his Ph.D. from Iowa State University, Ames in 1996, all degrees in electrical engineering.

Dr. Irizarry-Rivera is Associate Professor of Electrical Engineering and has been a faculty member at UPRM since 1997. During this time he has taught undergraduate and graduate electric power engineering courses such as: Introduction to Electric Power Systems, Electric Machines, Electric Power System Analysis, Advanced Energy Conversion, Electric Power Systems Dynamics and Control, Optimization and Operation of Electric Power Systems, Special Topics in Electrical Engineering: Reactive Power Design Projects in Power Electronics: Design, Simulation, Fabrication and Test of Brushless Commutator for Permanent Magnets DC Motors and Overvoltage Phenomena in Electric Power Systems.

His research interests are electric power systems dynamics, renewable energy resources and electric energy storage. Dr. Irizarry Rivera is Principal Investigator for the following projects:

**Intelligent Power Routers for Distributed Coordination in Electric Energy Processing Networks** (2002) A \$499,849 project sponsored by the National Science Foundation (NSF) and the Office for Naval Research (ONR) to develop a model for the next generation power network using a distributed concept based on scalable coordination by an *Intelligent Power Router* (IPR). Our goal is to show that by distributing network intelligence and control functions using the IPR, we will be capable of achieving improved survivability, security, reliability, and re-configurability. Our approach builds on our knowledge from power engineering, systems, control, distributed computing, and computer networks.

**Puerto Rico Wind Resource Assessment - Phase I: Partnership formation and prospective site identification** (2002) A \$32,465 project sponsored by the Puerto Rico Energy Affairs Administration to increase the knowledge of wind resources in Puerto Rico. We will assess wind velocity probabilities at sites that may be used to install wind farms. The criteria to select the prospective sites shall not be convenience of data gathering, such as existing towers or existing wind recording stations, but land availability for establishment of a wind farm, road access, available electric grid connections, zoning regulations and indicators of potential wind resource such as existing wind data, topography, wind-deformed vegetation or eolian landforms.

**Puerto Rico SMES Project Phase I - Evaluation Study** (1997-99) A \$579,188 project sponsored by FOMENTO's Science and Technology Board to determine the energy requirements (size) of an energy storage unit that will provide Puerto Rico's electrical system with rapid response spinning reserve to prevent blackouts under generation deficiency conditions.

Dr. Irizarry-Rivera serves as Expert Witness in civil court cases involving electric hazard, shock and/or electrocution. He has also served as a Consultant to the Puerto Rico Energy Affairs Administration on eolic generation projects and is the author of 14 peer-reviewed publications. He is a member of IEEE and ASEE as well as Principal Advisor for the Tau Beta Pi Puerto Rico Alpha Chapter and active Facilitator of TBP's Engineering Futures program. Dr. Irizarry-Rivera is a registered Professional Engineer in Puerto Rico since 1991.