



## Weathering the Storm

The Joint ECS-ECSJ 2012 PRIME meeting held in Honolulu was our largest conference to date. We had over 4,000 presentations and approximately 3,800 attendees despite new U.S. government travel restrictions limiting the number of participants from federal laboratories to about 1/3 of their usual participation. Before the meeting, ECS in alliance with the AAAS, articulated the importance of federal scientific involvement in conferences to the U.S. government and will continue to do so in the future. The State of Hawaii, represented by Lt. Gov. Brian Schatz, and the Hawaii Natural Energy Institute's participation, helped to make it the most successful PRIME to date, and one of ECS's most successful meetings.

As most of you know, Hurricane Sandy devastated the Caribbean and portions of the Northern Eastern seaboard. The hurricane made landfall about 50 miles from the ECS headquarters and destroyed whole towns on the New Jersey coast. Hundreds of lives were lost and over 65 billion dollars in damage occurred. The extreme storm caused major disruptions to the Society. Wind, falling trees, and rain significantly damaged many members of the staff's homes and property. Falling tree limbs damaged one of the ECS buildings in Howe Commons. Electric power and other utilities were disrupted for many New Jersey residents for over a week and a powerful winter snowstorm followed the hurricane. Fortunately, none of our staff were injured by these events. They conducted themselves in an exemplary manner, shutting down the ECS servers in an orderly fashion before the power outage and they secured the Headquarters building before taking care of their own homes. Our dedicated staff returned to work as quickly as possible despite having to deal with the damages to their properties. We were operational as soon as power was restored because of their diligence.

Sandy is, to date, the largest Atlantic hurricane ever recorded with winds spanning over 1,000 miles. Hurricanes are heat engines converting ocean thermal energy to wind kinetic energy via water evaporation much like a steam power

plant. The Atlantic Ocean was unseasonably warm this year thus energizing the super storm. Other extreme weather events are significantly impacting the United States. The Southwest, where I reside, is in a 14-year period of low precipitation. My landscape has been irrevocably altered by fire and drought, bearing little resemblance to the South Rocky Mountain climate zone of 20 years ago.

The societal impact of extreme weather and climate change is enormous, for developed countries it generally means economic losses of many billions of dollars due to lost productivity, property, infrastructure, and agricultural damages. The effects are far worse for less-developed nations with large numbers of casualties, disease, famine, and displacement of large populations leading to civil conflicts and war.

Our Society can do many things to help humanity cope with climate change and resulting extreme weather. Improving energy efficiency and the development of renewable energy technology reduces greenhouse gas emissions. Advances in electronics, sensors, and battery-powered portable communications have already saved many lives during natural disasters. Mobile phone technology, incorporating technological advances by ECS members, has enabled communication to first responders during crisis; and advanced battery technology enables some infrastructure and medical devices to continue working until power is restored. Fuel cells are beginning to deliver reliable uninterrupted power to critical sectors of civilization. Sensor technology is widely used to monitor ambient conditions and discern subtle changes in the ecosystem and atmosphere. We will need to do more to face the challenges of environmental change. In the future ECS will sponsor more symposia like our successful Energy Summit series and assist in the dissemination of new knowledge in the areas of water and energy, efficient distributed power and storage, and environmental surveillance.

A handwritten signature in black ink that reads "Fernando".

**Fernando Garzon**  
ECS President