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FSU researchers working to improve hurricane forecasts

Grant money will used to increase accuracy in hurricane predictions

By Jeff Burlew
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Florida State University has received \$935,000 in federal grant money to improve hurricane forecasts using sophisticated numerical models and supercomputers.

Researchers at FSU's Center for Ocean-Atmospheric Prediction Studies say their forecasts will improve upon forecasts issued each year by Professor Bill Gray at Colorado State University. The research is led by Tim LaRow, associate scholar scientist in meteorology.

FSU's forecasts rely on data on ocean conditions, while Colorado State's forecasts are based on statistics from past hurricane activity, said Jim O'Brien, professor of meteorology and oceanography at FSU. The forecasts predict how many storms will form in the season and their intensity.

"The end goal, besides the scientific curiosity of can we do it, would be to say how many storms, how many hurricanes and then try to quantify landfall probabilities," LaRow said.

To test the accuracy of their forecasts, LaRow and colleagues Lydia Stefanova and Dong-Wook Shin programmed the model with sea-surface temperature forecasts from 1986 to 2005 to "re-forecast" those hurricane seasons, FSU officials said. The model was only one or two storms off each season, LaRow said.

"The correlation between the number of storms that the model generated and the observed number of storms over those 20 years was very good," LaRow said.

O'Brien said the secret to forecasting the hurricane season is correctly forecasting ocean conditions.

"If you get the ocean right, you can tell where the hurricanes are going to go," he said. "The ocean changes its temperature structure just like the atmosphere. (It) can have hot spots and cold spots, too, which move around. At FSU and COAPS, there are scientists that believe they will be able to forecast the number of hurricanes that occur in the Atlantic with more accuracy than previous forecasters."

Recently, COAPS issued its first-ever hurricane forecast, which calls for an average of eight

named storms and four hurricanes this season in the Atlantic. The numbers are lower than the historical average and could be related to the possible re-emergence of El Nino in the tropical east Pacific Ocean and relatively cool tropical Atlantic conditions. Colorado State's latest forecast calls for 11 named storms and five hurricanes.

COAPS also is using the grant money to provide climate forecasts for Florida farmers and quality control on weather and ocean measurements from National Oceanic and Atmospheric Administration ships at sea, O'Brien said.
