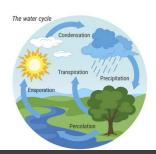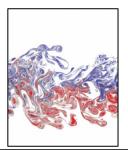# Boase Seminar Series in Hydrology and Water Resources Engineering

Department of Civil, Environmental and Architectural Engineering

Operational Flood Forecasting

Dr. Taiye Sangoyomi
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NOAA/National Weather Service
Peachtree City, GA

Wednesday, March 30, 2022 | 11:15 AM | ECCE 1B41 &
Zoom: https://cuboulder.zoom.us/j/95668504496
(passcode: water)

Abstract:

Damage from flooding in the United States cost billions of dollars each year with impacts including loss of human life, damage to property, destruction of crops and loss of livestock. These impacts can be mitigated with the provision of timely and accurate flood forecasts. The mission of the Southeast River Forecast Center (SERFC) is to provide such information for the southeastern United States covering seven states including Puerto Rico.

Two types of flood forecasts are provided by the SERFC: ensemble and deterministic forecasts. The ensemble forecast provides probabilistic flood guidance up to ten days, and tries to account for the uncertainties in future precipitation. The deterministic flood forecast uses a single deterministic 48-hour precipitation forecast and extends over a five-day period.

The modeling system used for flood forecasts is the Community Hydrologic Prediction System (CHPS), which provides a framework for coupling different models. The coupled models in CHPS include a hydrology model (Sacramento Soil Accounting Model), hydraulics model (HEC-RAS), snow model (Snow-17), reservoir model (RES-J), routing model (LAG-K) and unit hydrograph model.

The operational flood forecasting process includes quality assurance/quality control of precipitation estimates, review of precipitation forecasts and adjusting them as necessary, running CHPS and making real-time modifications to model parameters to get observed and simulated flows in line over the warm-up period, coordination with reservoir operators on their proposed releases, and coordination with the Weather Forecast Offices on flood warning issuances.

Speaker Bio: Taiye Sangoyomi is a Senior Hydrologist at the Southeast River Forecast Center, and has over 33 years work experience in water resources engineering where he has worked in research, consulting, state and federal government. He holds a PhD in Civil and Environmental Engineering from Utah State University, and MS and BS degrees in Civil Engineering from the University of Lagos, Nigeria. In addition, he has an MBA and MS in Information Systems from the University of Colorado at Denver. He is also a registered professional engineer in the states of Colorado and Florida.

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