

# Statistical Learning for Climate Predictions and Projections: A Research to Operations to Research (R2O2R) approach

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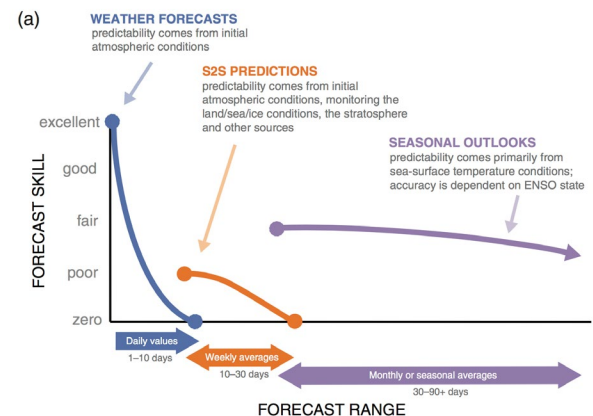
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**Zoom: <https://cuboulder.zoom.us/j/95668504496>**

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### Abstract:

In this talk, I will share my R2O2R experience in developing statistical learning modeling for climate predictions and projections. First, I will discuss my research work on developing several post-processing approaches for climate predictions starting from traditional statistical models to machine learning models, and how these models are operationalized to generate real-time S2S forecasts on a global to regional (country level) scale. I will then discuss my research to generate a wider range of plausible climate change scenarios for New York City's drinking water supply system using a "bottom-up" approach. I will present how I developed various "Stochastic Weather Generators", a tool for the "bottom-up" approach, based on statistical and deep learning modelings focused on future extreme precipitation scenarios. I will end this talk by briefly sharing my ongoing R&D work at NOAA-PSL.



**Speaker Bios:** Nachiketa Acharya is an expert in statistical and machine learning modeling in climate sciences, especially sub-seasonal to seasonal forecasting. He is a CIRES/University of Colorado Research Scientist III working with the NOAA Earth System Research Laboratories's Physical Sciences Laboratory. Previously, he has held influential positions at the Department of Meteorology and Atmospheric Sciences at the Pennsylvania State University, the International Research Institute for Climate and Society at Columbia University, the Institute for Sustainable Cities at the City University of New York, the National Centre for Medium-Range Weather Forecasting in India, the Indian Institute of Technology Delhi, and Bhubaneswar. He is actively engaged in several Regional Climate Outlook Forums by WMO as an expert and trainer of S2S forecast and verification. For more information, <https://psl.noaa.gov/people/nachiketa.acharya/>