

**Environmental Engineering**

**and Earth Sciences**

**EEES Department Seminar**

**Increase in Risk of Extreme Events under Climate Change**

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Climate change has increased extreme events (e.g., drought, heatwave, and heat stress) in a warming world. For example, Heat stress has led to massive human morbidity and mortality in recent years. Severe heat stress (HS) events in the Midwest and the Gulf of Mexico coastal plains during the summers of 2019 and 2020, as well as many others during the 2010–2019 decade, are representative of the types of extreme hot and humid events expected to become more common in the contiguous United States (CONUS) in future. The increase in global temperature has further altered the spatio-temporal pattern of compound extreme events (e.g., drought and heatwave). However, a limited number of studies investigated their compound characteristics in terms of duration, frequency, severity, and spatial extent. By providing an overview of hydroclimatic extremes, I will discuss the potential impact of climate change on the individual extreme event (e.g., HS) and compound extreme events (e.g., a combination of drought and heatwaves). Specifically, the presentation will discuss climate change risk assessment on the extreme heat events in the CONUS by focusing on the potential impact of the summer (JJA) annual most severe HS in the present and several future climate scenarios. The second part of the presentation will discuss the spatio-temporal changes in compound events that significantly impact health, agriculture, economy, and the environment around the globe.

**2:30 PM**

**Friday, December 3, 2021**

**This will be an online-only seminar via Zoom:**

<https://clemson.zoom.us/j/5783910968>

***Attendance is mandatory for graduate students enrolled in EES 8610, EES 9610, and GEOL 8510.***