1157-65-462 **Xueyu Zhu*** (xueyu-zhu@uiowa.edu), Department of Mathematics, University of Iowa, Iowa City, IA 52242, and **Chuan Lu** (chuan-lu@uiowa.edu), Department of Mathematics, University of Iowa, Iowa city, IA 52242. *Bifidelity data-assisted Neural Network Approximation in Reduced Order Modeling for time-dependent PDEs.* Preliminary report.

In this talk, we will discuss a neural network-based reduced basis method with bifidelity models to accurately approximate the reduced solutions, particularly for time-dependent PDEs. We show that augmenting the bi-fidelity feature can help improve the accuracy of the neural networks as the approximator, and this method demonstrates its ability to produce accurate results with a limited number of high-fidelity simulations with an affordable computational cost. We also provide several numerical examples to illustrate the effectiveness of this method. (Received February 03, 2020)