



THE UNIVERSITY  
of  
**WISCONSIN**  
MADISON

# Phenomenology Seminar

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## Precise Predictions for Higgs Production at Hadron Colliders within the SM and Beyond



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The search for the Higgs boson is a primary goal of the LHC and a top priority at the Tevatron. The Tevatron experiment has reported limits for the Higgs boson cross-section. After eight years of collecting data of proton-antiproton collisions at 2 TeV, these experiments are becoming increasingly sensitive to a potential Higgs boson signal. After a short review of the theoretical and experimental motivations for studying specific Higgs production mechanisms, we describe the theoretical framework in which predictions are calculated. We then discuss new results for Higgs boson signals at hadron colliders, taking into account contributions from Standard Model particles as well as possible new physics effects.