

Joint Physical Chemistry & Biochemistry Seminar

Friday,
August 24, 2018

11:00 am

Room 1315
Chemistry Building

Mechanisms of Branch Site Selection by the Spliceosome



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Host: Professor Jim Weisshaar

Eukaryotic transcripts are processed by large macromolecular machines before being exported from the nucleus. The spliceosome is responsible for removing introns while ligating exons together to make mature mRNAs. A key regulatory and ATP-dependent step in splicing is recruitment of the ~1 MDa U2 snRNP to the branch site region, which ultimately identifies the nucleophile needed for the first splicing reaction. Over the past several years, we have used a variety of chemical, single-molecule, biochemical, and genetic tools to study this process in yeast. Our resulting model suggests that the reaction is driven forward by coupled conformational changes between the SF3b1 protein and Prp5 ATPase. In this seminar, I will discuss our evidence for this model and highlight the insights we have obtained from developing chemical inhibitors of yeast splicing and by using single molecule FRET to study protein conformation.