Doctoral College
Metabolic & Cardiovascular Disease

PROMETHEUS *REVISITED*: UNEXPECTED ROLES FOR ALTERNATIVE SPLICING IN LIVER REGENERATION

GUEST LECTURE by

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Thursday, 07.04.2022, 16:00

via Zoom:
https://illinois.zoom.us/j/84230107396?pwd=bzBDMHl6VUxPUUt3ZFl3ekdFdGVtQT09 (Meeting ID: 842 3010 7396 / Password: 737377)

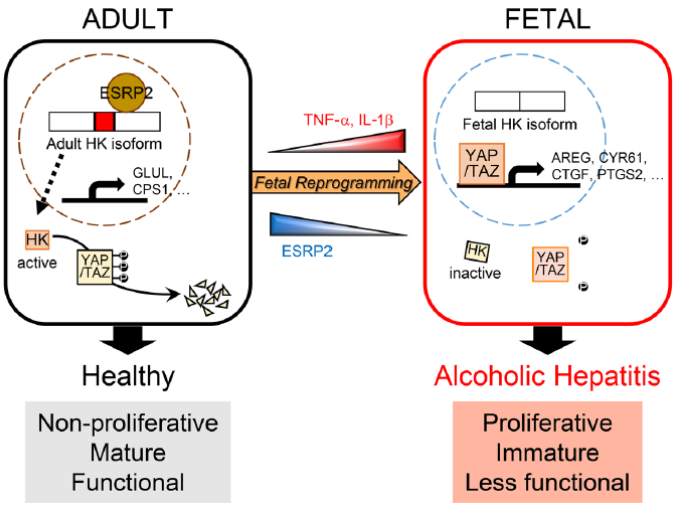
Abstract

This seminar will focus on post-transcriptional mechanisms that affect the “quality” and “quantity” of RNAs produced in a cell-type- and context-dependent manner.

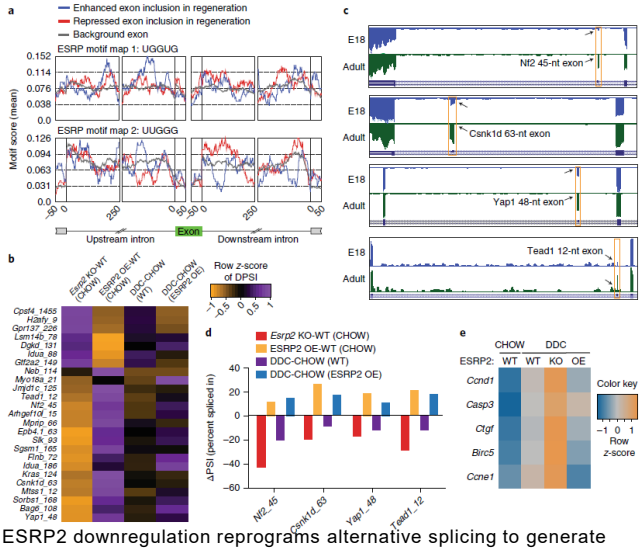
First, I will describe the identification of a conserved developmentally regulated alternative splicing program that supports terminal differentiation, functional competence, and postnatal maturation of hepatocytes.

Second, I will show evidence that following liver injury, this developmental splicing program is *transiently* redeployed to rewire a critical signaling pathway that enables proper liver regeneration.

Third, I will demonstrate that in severe alcoholic hepatitis, the *sustained* re-activation of this developmental program causes hepatocytes to shed adult functions and become more regenerative but threatens overall survival by populating the liver with functionally-immature cells.



Model for liver failure in severe acute alcoholic hepatitis (SAH).
Hyun *et al.* (2020) J Clin Invest. 130(4):2129-45



ESRP2 downregulation reprograms alternative splicing to generate neonatal isoforms of Hippo pathway proteins.
Bangru *et al.* (2018) Nat Struct Mol Biol. 25:928-39