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From SNPs and Stress to SUDs: *Genetics and Epigenetic mediators of Social Determinants of Health, PTSD, and Substance Use Disorders*

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Dr. Ressler will provide an introduction to this session focused on the Social Determinants of Health as mediators of phenotypes relevant to substance use disorders (SUD). Specifically, he will provide background for our understanding of the interactions between social stress, neurobiological and genetic factors mediating vulnerability for post-traumatic stress disorder (PTSD). A large body of evidence now demonstrates that significant stress and trauma exposure, particularly during childhood, leads to long-term brain changes that increase risk for PTSD, depression, and SUD. Increasingly, new data are identifying genetic factors that mediate the interaction between social stress and later risk for PTSD and SUD. Furthermore, epigenetic markers that are altered during development and mediate transcriptomic changes are also revealing mechanisms by which long-term social stress is 'imprinted' upon the brain, increasing SUD risk and related phenotypes. The integration of genetic, epigenetic, neural system, and environmental risk data are now possible, and promise to reveal new understanding and potentially novel therapeutic approaches for intervention in Substance Use Disorders.