Presentation Title: Why Is It More Difficult for Women to Quit Smoking? Translating Knowledge Into Practice Sherry A. McKee, PhD, Yale University School of Medicine, symposium session 3214, Friday, Aug. 2, 12 to 12:50 p.m. HST, Hilton Hawaiian Village Beach Resort, Lehua Suite, 2nd floor, Kalia Executive Conference Center

Abstract: Tobacco use is the leading cause of morbidity and mortality in the U.S. We will present evidence documenting that women smokers experience exacerbated tobacco-related health risks and have less success quitting smoking with currently available treatments, which are critical health disparities. Much clinical research has focused on identifying factors that underlie the poorer cessation outcomes that female smokers experience, including: medication response, increased negative affect and stress, reproductive status and ovarian hormones, psychiatric co-morbidities, and smoking for weight management. However, there has been relatively little work translating these findings to gender-informed approaches to smoking cessation. We will focus on the current state of the science, identifying key knowledge gaps, and how best to translate this knowledge to optimize treatment outcomes for women smokers. Specifically, we will focus stress and negative affect which recognized as primary mechanisms involved in the maintenance of, and relapse to smoking. Emerging evidence identifies that affect regulation plays an especially critical role in the ability of women to initiate abstinence and avoid relapse. However, factors that underlie the impact of stress and negative affect on smoking are varied and complex, and the biology has yet to be fully elucidated. Targeting stress-related relapse for medications development is a critical, yet relatively unexplored strategy. There is substantial preclinical evidence demonstrating that noradrenergic transmission is involved in stress-induced relapse, yet there is a surprising lack of clinical investigations translating these findings to humans. We will present results from a hybrid human laboratory and clinical outcome study demonstrating that an alpha2a noradrenergic agent improved clinical outcomes for both women and men smokers, but preferentially improved stress-reactivity in women. Our results provide direct evidence that targeting affect and stress regulation is an effective medication development strategy to promote smoking cessation in women.