

## **Yale Center for the Study of Tobacco Product Use and Addiction: Flavors, Nicotine and Other Constituents (YCSTP)**

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### **Overall Center Abstract:**

Tobacco use and addiction remain among the top 10 public health problems in the USA<sup>19</sup> To protect the public health, regulatory measures that lessen the appeal and abuse liability of tobacco products are critically needed (WHO-FCTC, 2012). The Family Smoking Prevention and Tobacco Control Act (FSPTCA) prohibits the addition of characterizing artificial or natural flavors to tobacco cigarettes. However, menthol is exempt and other tobacco products include a wide variety of flavors. Further regulations of flavors depend on research addressing the significant gap in our understanding of the influence of flavors on the appeal of tobacco/nicotine and the initiation, progression and maintenance of tobacco use<sup>18</sup>. To address this knowledge gap, the YCSTP uses a multidisciplinary approach to generate essential TRS evidence in the FDA priority domains, Behavior and Addiction. Toward this end, we will examine the role of different classes of flavors (sweet and cool) including sweeteners and novel cool flavors, on initiation, continued use and addiction to nicotine/tobacco, and their relevance to harm reduction. We will build on the methods and findings generated in Yale TCORS-1, and integrate biological and behavioral testing in animal models with behavioral and pharmacological testing in humans to generate a firm scientific foundation for regulation of flavors and nicotine in tobacco products. Project 1 (Jordt/Addy) will use novel and established pre-clinical paradigms to paradigms to examine if preconditioning to flavors and sweeteners influences emergence of nicotine use behaviors and addiction, and the influence of novel cooling agents that may ultimately replace menthol in tobacco products. Project 2 (Krishnan-Sarin/Green) will examine the influence of sweet and cool flavors on initiation behaviors among human youth who are relatively early on the tobacco initiation spectrum and are susceptible to future use. This project will also examine if sweet and cool flavors are differentially important for altering nicotine reward, and facilitating switching behaviors, in younger and older combustible tobacco users. Project 3 (Sofuoglu) will determine the optimal delivery rates that are needed by combustible tobacco users to relieve nicotine withdrawal while producing minimal positive effects, and whether the influence of this delivery rate is altered if combustible tobacco users switch from using mentholated to non-mentholated products. YCSTP goals will be supported by 1) an administrative core that will facilitate and ensure successful completion of all proposed and new research and support collaborations within and across YCSTP, other TCORS, NIH and FDA-CTP, 2) a laboratory core that will provide critical analyses of tobacco products, vapor as well as markers of biological exposure to nicotine and flavors, and 3) by a career enhancement core that will promote the development of fellows and junior faculty as independent TRS investigators. The YCSTP will also use multidisciplinary core expertise to respond to "Rapid Response Project" announcements focused on FDA-CTP needs and the goals of the YCSTP.