Pre-ARC in Tobacco Product Sciences

The rising popularity of new and emerging tobacco products has raised critical public health and regulatory dilemmas. In 2009, Congress passed the Family Smoking Prevention and Tobacco Control Act which gave the Food and Drug Administration (FDA) the authority to regulate tobacco product (traditional cigarettes, smokeless and roll-your-own tobacco) manufacturing, distribution, and marketing in order to protect human health. In 2016, the FDA regulatory authority over tobacco products was extended to new and emerging tobacco products including electronic(e)-cigarettes, little cigars, cigarillos, premium cigars, hookah/waterpipes, dissolvable tobacco products, and pipe tobacco. While the health and behavioral effects of traditional cigarettes are well described, the safety and use of newer tobacco products are largely unknown. Further, marketing of new tobacco products as an alternative to traditional cigarettes has created confusion and misperceptions around the safety of these products especially among vulnerable populations. Scientific research is needed to inform policy makers of the health and behavioral effects of new and emerging tobacco products in order to develop the appropriate policies to protect human health. In order to facilitate research studies on the safety of these new tobacco products, the FDA has created new funding opportunities through the NIH. Because new tobacco products are so diverse in their product design (available in a wide array of flavors, utilize different combustion and heating methods, etc.), new approaches to understanding their toxicity are needed. The goal of our pre-ARC in Tobacco Product Sciences is to assemble a multi-disciplinary team to tackle questions related to the safety of new and emerging tobacco products. This pre-ARC is currently developing studies through the use of acute studies and development of a longitudinal cohort to determine the cardiovascular and pulmonary health effects of e-cigarettes in human participants and how product characteristics such as flavors and voltage impact the toxicity. In order to track how participants are utilizing tobacco products and collect information on the products being used, the pre-ARC is working with the Mobile and Electronic ARC to develop a mobile application for participants to record their tobacco product use patterns. Boston Medical Center has a higher prevalence of tobacco use compared to the national average. The pre-ARC is working with the BMC Cessation Clinic to establish and implement a list of tobacco product questions to be addressed in EPIC during patient-physician interactions that can later be queried to characterize tobacco product use patterns and evaluate the relations of cardiovascular and pulmonary diagnoses and outcomes with tobacco product use and characteristics. Further, as new regulatory policies are implemented at the local, state, and federal levels, we will be able to track how these policies impact tobacco product use patterns and cardiovascular and pulmonary outcomes.