Update from the FDA Center for Tobacco Products

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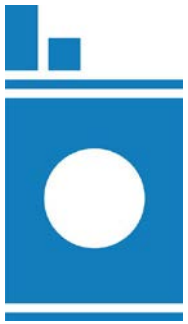
Implementing the Tobacco Control Act

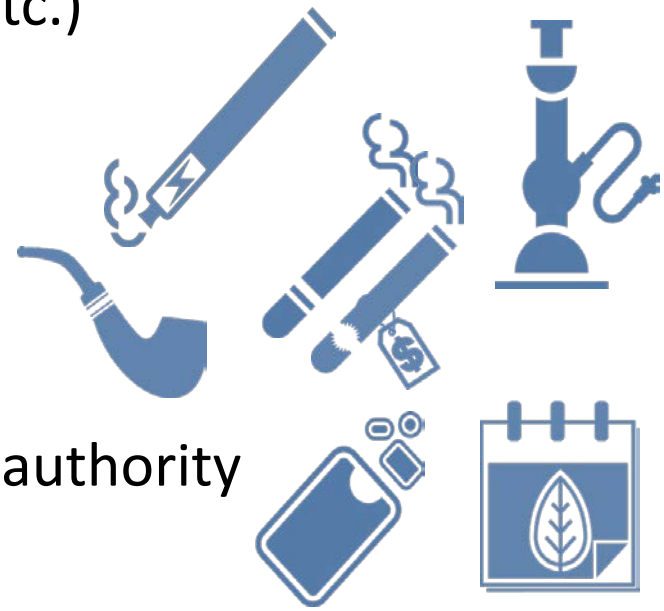
- Since 2009, CTP had authority to regulate tobacco products intended for human consumption to reduce harm across the population
  - Reducing the number of people who start to use tobacco products
  - Encouraging more people to stop using these products
  - Reducing the adverse health impact for those who continue to use these products
- Initially regulated the manufacture, marketing, and distribution of cigarettes, cigarette tobacco, roll-your-own, and smokeless



New Regulation

FDA finalized a rule effective August 8, 2016 to regulate all tobacco products, including components or parts (but excluding accessories), subject to FDA's tobacco product authorities, including:

- ENDS (e-cigarettes, e-cigars, vape pens, etc.)
- All cigars
- Pipe tobacco
- Nicotine gels
- Waterpipe (hookah)
- Dissolvables not already under the FDA's authority
- Future tobacco products



Population Health Standard

- FDA/CTP regulates tobacco based on a population health model
  - Tobacco cannot be regulated using FDA's traditional "safe and effective" standard
- Regulatory actions are based on the risks and benefits to the population as a whole, including both users and nonusers of the product

THE TOBACCO CONTROL ACT'S AUTHORITIES

The Tobacco Control Act amended the Food, Drug, and Cosmetic Act to provide FDA authority for:

- Premarket review of new and modified risk tobacco products
- Post-market surveillance
- Product standards
- Reporting of ingredients
- Reporting of harmful and potentially harmful constituents
- Adverse event reporting
- Health warnings
- Advertising and promotion restrictions
- User fees

THE TOBACCO CONTROL ACT'S AUTHORITIES

In general, CTP's regulatory authorities do **not** extend to:

- Setting tax rates for tobacco products
- Regulating therapeutic products, such as those marketed to treat tobacco dependence (regulated by other parts of FDA)
- Setting clean indoor air policies
- Regulating tobacco growing
- Requiring the reduction of nicotine yields to zero
- Providing cessation services
- Banning all cigarettes, smokeless tobacco products, little cigars, other cigars, pipe tobacco, or roll-your-own tobacco products
- Changing the minimum age to purchase tobacco products

COMPREHENSIVE PLAN FOR TOBACCO AND NICOTINE REGULATION

How Can We Make The Greatest Impact?

"We truly find ourselves at a crossroads when it comes to efforts to reduce tobacco use. But if we're going to meaningfully improve the public health, we need to be willing to take a hard look at our entire approach."

Dr. Scott Gottlieb
Commissioner of Food and Drugs
July 28, 2017

FDA's Comprehensive Plan for Tobacco and Nicotine Regulation

FDA envisions a world where cigarettes would no longer create or sustain addiction, and where adults who still want nicotine could get it from alternative and potentially less harmful sources

- Decrease the likelihood that future generations will become addicted to cigarettes
- Allow more addicted smokers to quit
- Encourage innovation of less harmful products for adults who want them
- Support innovations to medicinal nicotine and other therapeutic cessation products

Milestones of FDA's Comprehensive Plan for Tobacco and Nicotine Regulation

- September 2017 – Expanded "The Real Cost" campaign to include e-cigarettes.
- December 2017 – Launched "Every Try Counts" public education campaign to encourage adult smokers trying to quit cigarettes.
- March 2018 – Published three ANPRMs for public comment:
  - Tobacco Product Standards for Nicotine Level of Combusted Cigarettes
  - Regulation of Flavors in Tobacco Products
  - Regulation of Premium Cigars
- April 2018 – Unveiled Youth Tobacco Prevention Plan. Requested information from JUUL Labs on research related to youth initiation and use.
- May 2018 – Requested critical product information from companies about the youth-appeal of the their e-cigarettes. Sent warning letters to companies misleading youth with e-liquids that resemble children's food products.
- November 2018 – Published DRAFT Guidance on Modifications to Compliance Policy for Certain Deemed Tobacco Products.
  - Flavored ENDS, flavored cigars, and flavored little cigars may only be sold at age restricted locations.
  - Announced intention to advance a Notice of Proposed Rulemaking that would seek to ban menthol in combustible tobacco products, including cigarettes and cigars

SEEKING PUBLIC COMMENT AND ENGAGING IN A NATIONAL DIALOGUE

Advance Notice of Proposed Rule Making

- Tobacco Product Standards for Nicotine Level of Combusted Cigarettes
  - To obtain information for consideration in developing a tobacco product standard to set the maximum nicotine level for cigarettes.

- Regulation of Flavors in Tobacco Products
  - To obtain information related to the role that flavors play in tobacco products.

- Regulation of Premium Cigars
  - To obtain scientific data related to the patterns of use and resulting public health impacts from premium cigars.

Tobacco Product Standards for Nicotine Level of Combusted Cigarettes

FDA was seeking comment on whether the product standard should cover any or all of the following:

- Combusted cigarettes
- RYO tobacco
- Some or all cigars
- Pipe tobacco
- Waterpipe tobacco

The scope of this request included information on available data on the toxicity, addictiveness, and appeal of tobacco products

Regulation of Flavors in Tobacco Products

Toxicity may result from chemicals formed when flavors are heated or burned

Provide studies or information regarding:

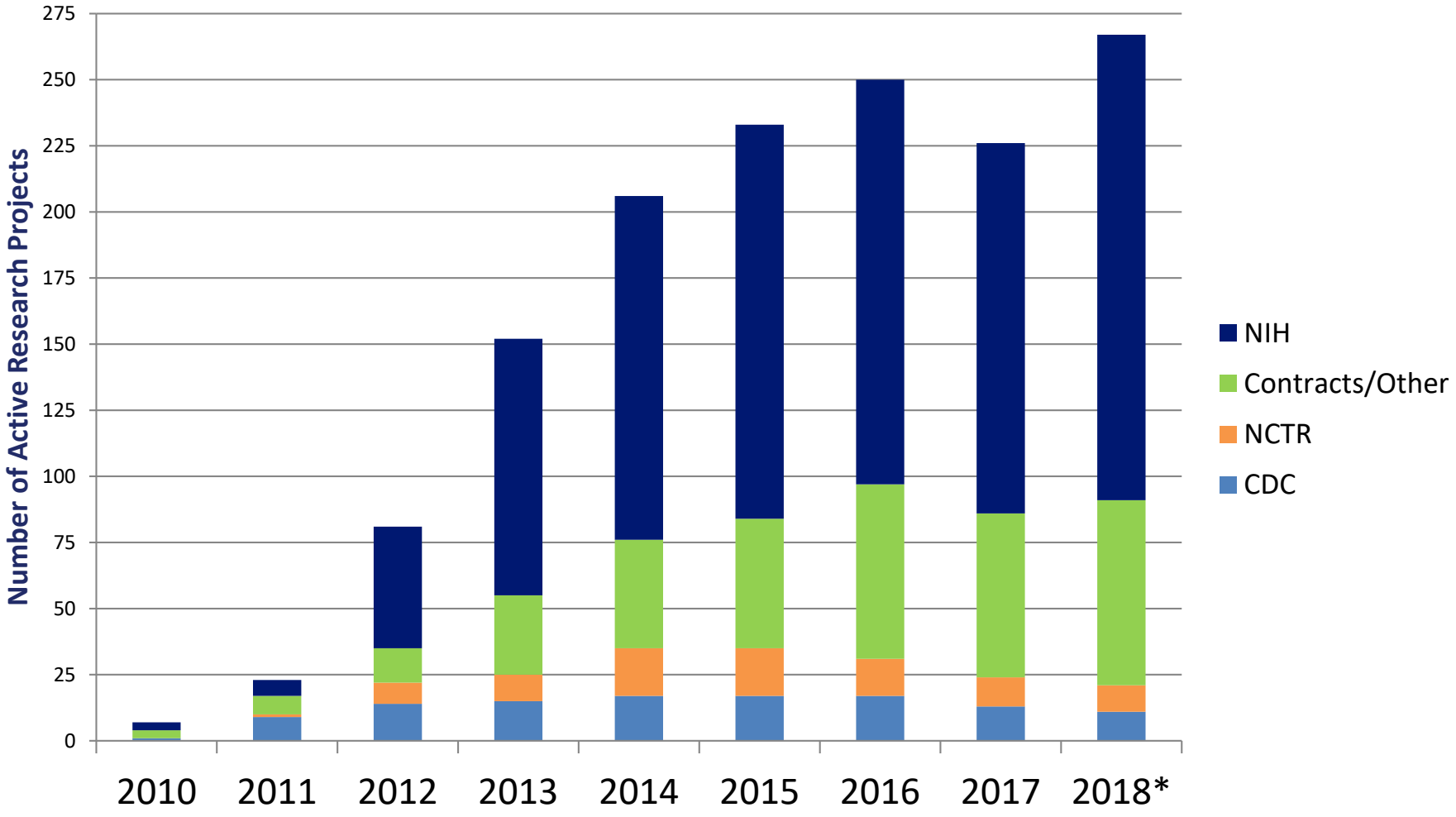
- Toxicity or adverse health effects from use of any tobacco product
- What toxic chemicals might be formed from heating or burning of tobacco products
  - Potential toxicity or health risks

Roadmap for a Healthier Future

- Publish product standards that reduce addictiveness, toxicity and appeal to prevent addiction, avert initiation and encourage cessation among teens and adults
- Issue foundational rules to increase efficiency and transparency of product review process for industry
- Encourage innovative, less harmful, and satisfying non-combustibles for adults who still want nicotine
- Address the role of all therapeutic products, including the performance of medicinal nicotine products, in order to help more smokers quit with help

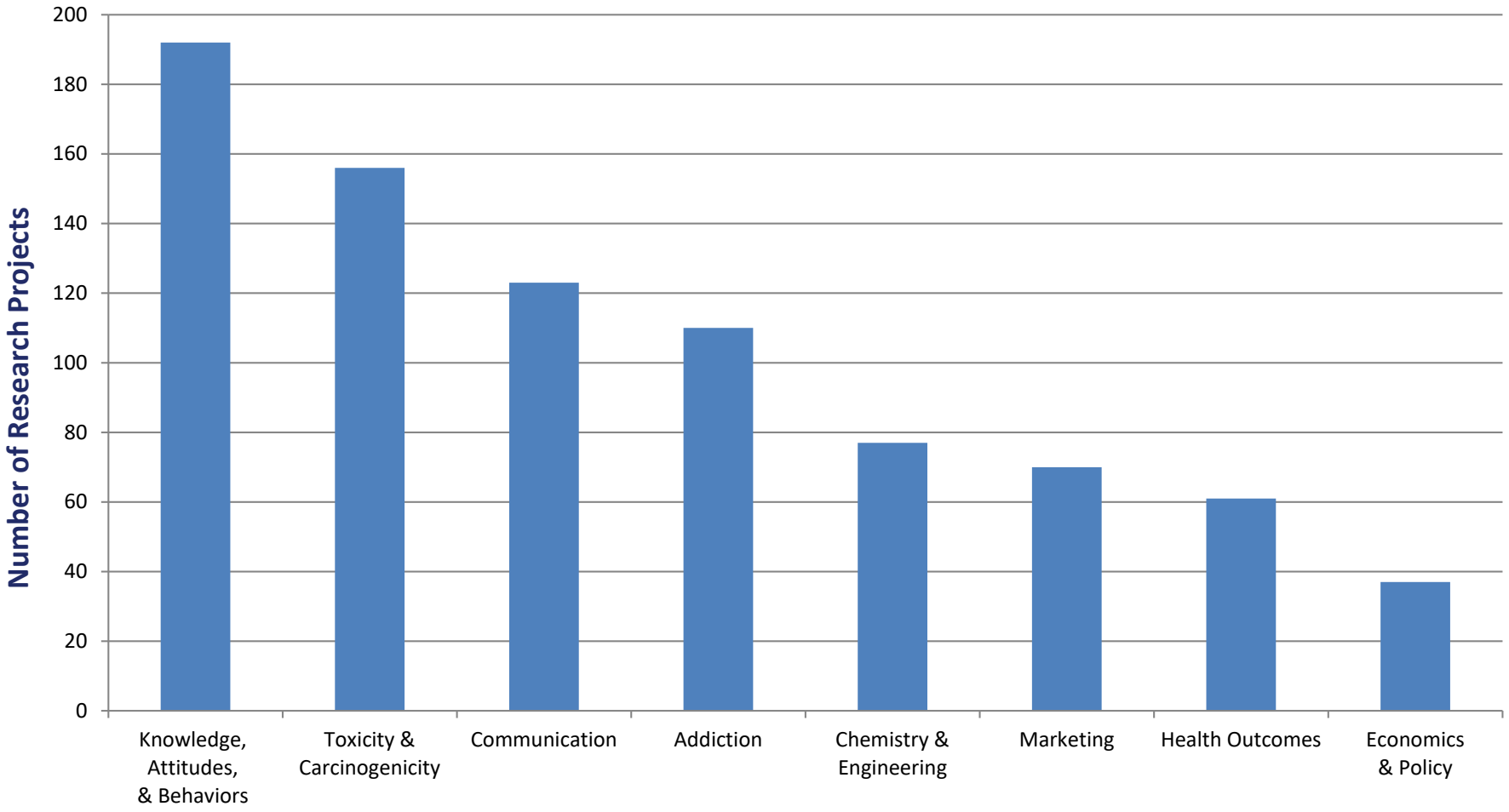
U.S. TOBACCO REGULATORY SCIENCE

Research: Active CTP projects By Fiscal Year



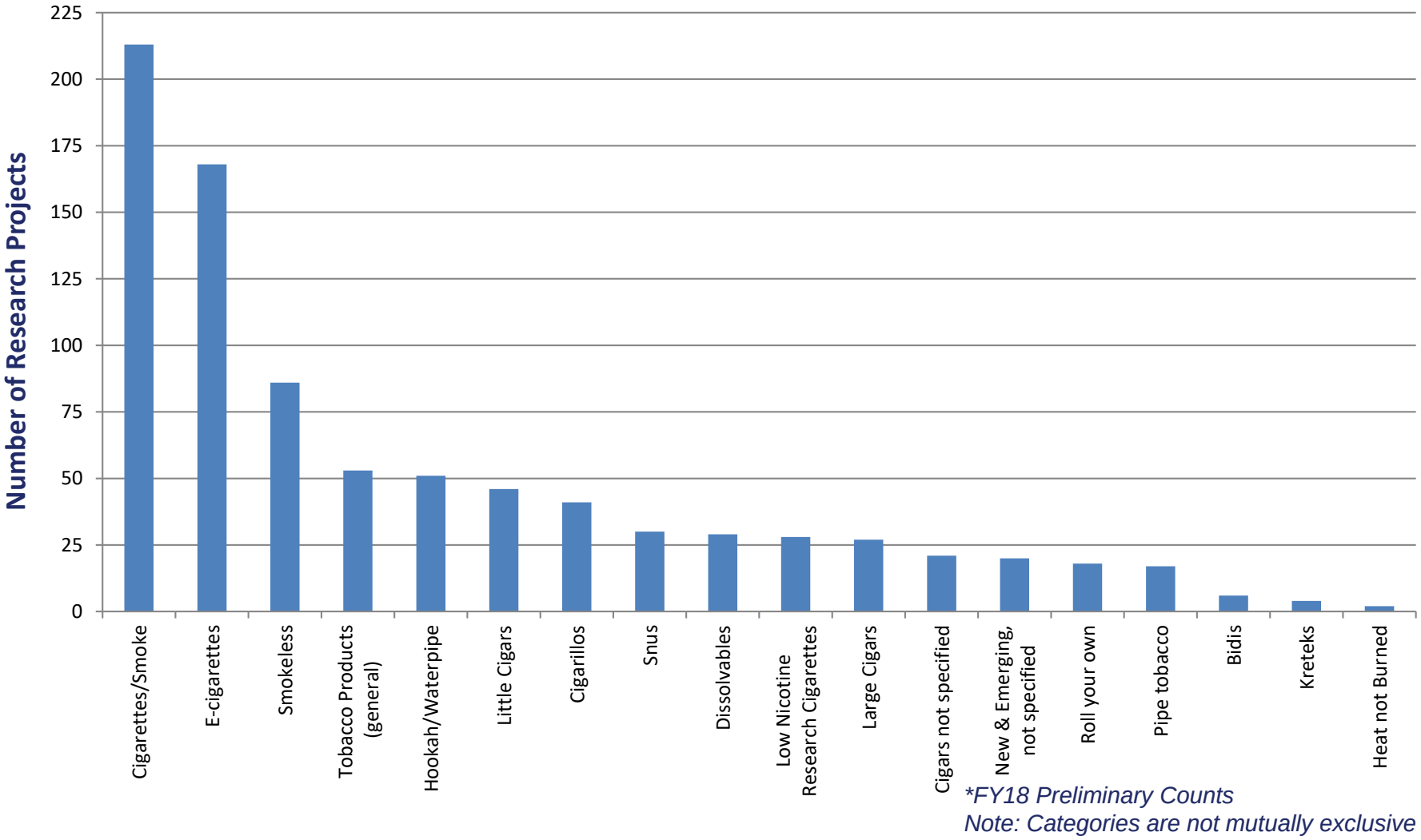
**FY18 Preliminary Counts*
Note: Some projects captured in multiple years.

Research: Projects by Category, FY10-FY18*



**FY18 Preliminary Counts*
Note: Categories are not mutually exclusive

Research: Projects by Product type, FY10-18*



**FY18 Preliminary Counts*

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Central CTP Research Initiatives

Population Assessment of Tobacco and Health Study

- Longitudinal cohort study of ~46, 000 U.S. adults and youth
- Research on tobacco product-related harm, evaluating patterns of tobacco use such as switching products and using multiple products
- An understanding of perceptions, knowledge, attitudes, and use of various tobacco products

Tobacco Centers of Regulatory Science (TCORS)

- Include 3 or more theoretically-grounded research projects with an integrated theme
- Ability to respond quickly to emerging research questions through pilot and & rapid response projects
- program for career development to train future generations of researchers in tobacco regulatory science

CTP-NCTR Collaborations

- Evaluating the Toxicity and Inflammation Produced by Cigarette Smoke Using Human In Vitro Airway Models E07549.01 (Cao X, Healy S)
- 90-Day Nose-Only Inhalation Toxicity Study of NNK in Rats E07531.01 (Yi J, Chemerynski S, Yee S, Coraggio M)
- Pharmacokinetic Analysis of Nicotine in Sprague Dawley Rats E07607.01 (Yi J, Chemerynski S, Yee S, Coraggio M)
- Development of a Multi-Pathway Physiologically Based Pharmacokinetic (PBPK) Model for Nicotine in Humans C17068 (Yang X, Fisher J, Ying B, Chemerynski S, Jackson K)
- Aerosol Inhalation Exposure Chamber Development by Simulation C17070 (Min S, Yee S, Chemerynski S, Coraggio M)

Research Areas of Interest

- Toxicity – Understanding how tobacco products and changes to tobacco product characteristics affect their potential to cause morbidity and mortality, including animal and cell culture models as well as novel alternative toxicology approaches that test the toxicity of tobacco smoke, aerosols, or specific constituents in tobacco
- Areas of interest include
  - Toxicological assays (in vivo and in vitro) to compare toxicity across different types of tobacco products within the same class including electronic nicotine delivery systems (ENDS), cigars, waterpipes and smokeless tobacco
  - How product design characteristics (and changes in those characteristics) impact constituent exposure and toxicity from tobacco products; biomarkers to assess exposure, as well as biomarkers to assess harm or toxicity of non-cigarette tobacco products, including ENDS

Thank You

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