ADVANCING THE FIELD OF TOBACCO SCIENCE AND PREVENTION
For more than 50 years, public health agencies have counted on Battelle for objective, science-based answers to complex questions surrounding tobacco and nicotine use and exposure.

BringiNG NEW UNDERSTANDING THROUGH WORLD-CLASS SCIENCE

The Battelle Public Health Center for Tobacco Research brings together the world’s best researchers, facilities and methods to help the public health community understand the range of tobacco and nicotine products available, how consumers use those products, and the risks associated with their use.

Our research focuses on today’s most critical and complicated public health questions, such as:

- What relative exposure risks are associated with e-cigarettes, heat not burn, and other alternative nicotine delivery devices compared to conventional tobacco products?
- How do emerging products (e.g., cigars, little cigars, and waterpipes) impact consumer behavior?
- How do changes in tobacco use behaviors influence exposure to nicotine, particles, and other harmful and potentially harmful constituents (HPHCs)?
- How does flavor and other tobacco product additives affect users’ perceptions and product use?
- What is the chemical composition and particle size distribution of e-cigarette aerosol, and what toxicological implications are associated with inhalation of that aerosol?
- How can the abuse liability of e-cigarettes be measured precisely and accurately?
- What messages, materials or programs can change people’s perceptions and use of tobacco products?
- How do new tobacco products appeal to pregnant women, and how does their use affect pregnancy and birth outcomes?
- What is the relationship between tobacco and cannabis use?

Our People

Our team includes nationally and internationally recognized experts in clinical, analytical, behavioral and health communication in tobacco and nicotine research. Our long-standing track record of successfully implementing studies and disseminating results critical to public health enables us to attract the world’s leading researchers and scientists. Chemists, physicists, toxicologists, psychologists, epidemiologists, pharmacists, statisticians, physicians, and health communications specialists serve our broad mission of improving public health.

Our Facilities

We conduct our research in state-of-the-art laboratories in Baltimore, MD, and Columbus, OH. We have unique experimental chambers designed to safely test combustible and non-combustible aerosol/vapor/smoke generating products and rigorously assess environmental exposure, as well as experimental rooms to conduct data collection for both clinical research studies and clinical trials. We offer a full suite of regulatory capabilities to support our studies in laboratories designed to uniquely offer DEA Schedule I licensure to conduct dual use studies with tobacco and marijuana administration. Our facilities house sophisticated and precise analytical equipment, including puff topography devices, smoking machines capable of mimicking smoking and e-cigarette vaping behavior, and continuously sampling spectrometers that can measure compounds in exhaled smoke and aerosol in real-time.

Our Methods

We are advancing tobacco and nicotine science with cutting-edge methods. Our researchers are credited with the identification of new biomarkers of tobacco exposure, development of new product characterization methodologies, aerosol measurement technologies, and behavioral methodologies and instruments for a wide range of tobacco and nicotine products.
We have expertise in a vast range of scientific areas, including the chemical characterization of tobacco products; knowledge, attitudes, beliefs, and perceptions associated with tobacco use, addiction and pharmacology of nicotine; use and effects of novel tobacco products; tobacco markers and the validation and evaluation of exposure biomarkers; and health education, interventions and communications to prevent tobacco uptake and facilitate cessation for the general public and for vulnerable populations.

The Battelle team is comprised of expert scientists experienced in investigating different tobacco products (e.g., loose vs. pouch smokeless tobacco, factory made vs. roll-your-own cigarettes; different states of use (e.g., tobacco abstinence and withdrawal); subpopulations of smokers (e.g., occasional smokers; heavy smokers; e-cigarettes, dual and exclusive users; cigar users); and vulnerable populations (e.g., pregnant and postpartum women, racial minorities). The Battelle team’s breadth and depth of experience ensures a high level of scientific and regulatory competency in the contributions they make to study design and development discussions, reducing study start-up time and assuring that our clients are supported by a vested group of collaborators with a similar mission—advancing tobacco science.

PRODUCT CHARACTERIZATION
We offer decades of experience in the tobacco science and chemistry fields using highly specialized equipment necessary for tobacco product characterization, including characterizing the chemical composition and physical properties of unused and spent tobacco products, and analyzing mainstream, sidestream and environmental smoke and aerosol for HPHCs.

ENVIRONMENTAL IMPACT
We apply our expertise in trace analysis of toxic chemicals and environmental pollutants to various types of matrices to help protect public health. Staff examine specific chemical and harmful constituents that may enter the environment because of widespread tobacco product use (e.g., waterpipe wastes, cigarette filters).

CLINICAL PHARMACOLOGY
Analyzing both pharmacokinetic and pharmacodynamic interactions, our researchers contribute to the knowledge gap surrounding how humans respond to nicotine, and how that response is influenced by product characteristics, user behavior and acute and chronic exposure to toxicants. Pre-Phase I and Phase I clinical studies are conducted in a strict, Good Clinical Practice (GCP)-compliant environment, following all applicable state and federal regulations, to ensure high quality science and participant safety.

USE BEHAVIOR STUDIES
We conduct human tobacco studies using sophisticated topography analyzers to precisely record use or “puff” behavior in state-of-the-art smoking chambers that allow for unobtrusive observation of tobacco use in a comfortable and controlled environment that adheres to GCP and other regulatory guidelines.

BIOMARKERS
We offer a broad capability to comprehensively characterize tobacco exposure and to assess biospecimens for tobacco derived biomarkers. Compounds of interest such as nicotine, tobacco-specific nitrosamines (TSNAs), polycyclic aromatic hydrocarbons (PAHs), and heavy metals among others are typically assayed in the blood and urinary matrix and reflect chronic toxicant exposure from long-term use of a given tobacco product.
SUPPORTING AND EDUCATING USERS AND THE PUBLIC

USER KNOWLEDGE AND PERCEPTIONS
We use cutting edge survey and observational methods to measure user knowledge, attitudes, beliefs and perceptions surrounding a variety of tobacco products and evaluate how they may influence user behavior. We conduct focus groups, in-depth interviews, and surveys to understand what drives users’ behavior, perceptions and their tobacco product choices.

DEPENDENCE AND WITHDRAWAL
We study dependence, craving, and withdrawal behaviors and symptoms from a wide variety of tobacco products to better understand how product characteristics, use behavior, and the subjective user experience may influence the abuse liability associated with tobacco products.

PREVENTION AND INTERVENTION
We develop individualized prevention and intervention approaches that foremost encourage abstinence but also stress the importance of harm reduction for people who find it difficult to quit tobacco use. For example, since tobacco use among pregnant and postpartum women is the leading preventable cause of poor pregnancy outcomes, infant morbidity and mortality, and a major public health issue, our team is particularly invested in helping this vulnerable population.

HEALTH COMMUNICATION AND SOCIAL MARKETING
We bring together a depth of experience and expertise in tobacco communication science, program evaluation, data analytics, and social marketing to solve complex public health challenges. We help our clients reduce preventable death and illness by bridging science and creativity to inform the development and implementation of evidence-based health communication messages and campaigns. We offer comprehensive services for every stage of a campaign lifecycle, from planning and message development to outcome evaluation.
Who is Battelle?

We are the world’s largest independent research and development organization, operating at the forefront of scientific discovery. We apply cutting-edge research methods to some of today’s most pressing health and environmental concerns, including tobacco and nicotine exposure.

Experience: We have led tobacco and nicotine research for decades, as a trusted research provider for the NIH, CDC, FDA, EPA and other public and private entities.

Expertise: We bring together leading experts in behavioral and social sciences, analytical and physical chemistry, pharmacology, psychology, toxicology and related disciplines to answer complex health questions.

Objectivity: Our research is grounded in solid, objective science and proven methods to deliver trusted data for industry, regulation and public policy.

What can we answer for you today?

Contact us to see how we can help you with your tobacco research needs.