Brief Biography of Robert K. Jackler, MD:

Dr. Jackler is a professor at the Stanford University School of Medicine and is a practicing surgeon. He is the founder and principal investigator of an interdisciplinary research group (Stanford Research Into The Impact of Tobacco Advertising or SRITA) which conducts research into the promotional activities of the tobacco industry. SRITA collected 56,600 original tobacco advertisements which were donated to the National Museum of American History of the Smithsonian Institution. A public exhibit at NMAH drawn from this collection opened in April 2019. SRITA maintains an extensive online tobacco advertising research database (tobacco.stanford.edu) which has over 813,000 unique users.

As an academic research program, SRITA scholars conduct a wide spectrum of research into the promotional behaviors of the tobacco industry. SRITA focuses upon original scholarship utilizing the unique resource of our advertising collection. Our early academic focus was primarily an historical study of advertisements from the 20th century. In recent years, our research has focused upon the design and marketing of emerging tobacco products such as e-cigarettes (e.g. JUUL), heated tobacco (e.g. IQOS), and novel nicotine delivery systems. Our research is primarily designed to provide scientific data and analysis to inform regulators and legislators.

SYNOPSIS OF OPINIONS:

Today's Tobacco Advertising Conveys the Same Messages as it Did in the 1950s:

I suspect that most Americans think that the worst excesses of tobacco marketing lay in the 20th century when countless ads glorified smoking as glamorous and sexy and a worried public was reassured that "More Doctors Smoke Camels." While the tobacco industry loudly claims they advertise ethically today, my in-depth study of tobacco advertising makes it clear that they still convey the same messages as during the earlier era. Most importantly, knowing that almost all nicotine addiction begins during teen years, tobacco advertisers use every trick in the book to lure young people to become their lifelong customers.





Contemporary Youth Targeted Advertisements: JUUL and Marlboro

Tobacco Advertisers Associate Their brands with Whatever is Popular in Culture:

Ever since the tobacco industry started advertising, it has linked its products to whatever is popular in culture. During wartime cigarettes were associated with bravery and victory, during women's liberation you got "you've come a long way, baby", and today, tobacco products are marketed as "natural and organic" even though they are equally deadly. As soon as COVID-19 arrived, tobacco marketeers recognized the opportunity: Offering free hand sanitizer with purchase, giving out branded facemasks, and ads sporting slogans such as "stay home and vape" and "work from home with the calming effect of sweet caramel tobacco."

British America Tobacco Heated Tobacco Product Glo





The Tobacco Industry is Introducing a Wide Assortment of New Products:

By now, most of us are familiar with the story of how JUUL drove an epidemic of nicotine addiction among American youth. Clearly the lessons learned from the Juul fiasco are important – but the issue is much broader than this one brand. Faced with declining sales of traditional cigarettes, major tobacco companies are introducing non-combustible nicotine delivery products including ecigarettes, heated tobacco, and a variety of recreational oral nicotine products (pouches, lozenges, & gums). While the accomplishments of North Carolina in its JUUL settlement is a good start, their settlement covers only a single brand in a single state. A comprehensive nationwide regulatory framework spanning both traditional and emerging tobacco products is needed.



Tobacco Advertising Has Been Regulated by the Federal Government for a Century:

Promotion of tobacco products has been regulated by the Federal government since the 1920s with a series of actions adopted by Congress, the FTC, and FDA. In each and every case, the industry has effectively circumvented governmental regulation designed to protect the public from their predations. For example, in 1970 Congress banned tobacco advertising from broadcast mass media, which at the time was limited to television and radio. Half a century ago Congress could not have conceived the revolution in mass media today. Social media is a powerful form of mass media, especially among its heaviest users – teenagers. Facebook and Instagram are widely exploited by tobacco marketers. In former days, the tobacco ads featured movie stars and sports heroes - today they make extensive use of influencers – social media stars with vast online followings. There is strong justification to eliminate all tobacco marketing from social media. There is a clear analogy to the precedent set by the 1970 Federal ban TV/Radio ban.



Selected Highlights of Tobacco Advertising Regulation

1929	Weight Loss Claims	Federal Trade Commission
1955	Unsubstantiated health claims	Federal Trade Commission
1964	Celebrities + Athletes	Cigarette Advertising Code
1965	Warning Labels	Congress (Federal Cigarette Labeling and Advertising Act)
1971	TV and Radio ads (FTC)	Congress (Public Health Cigarette Smoking Act)
1998	Sponsorships Cartoon characters Outdoor advertising Movie product placement Sampling except where underage Brand on merchandise (e.g. tee sh	
2009	Flavored Cigarettes (except for ment Mild, light, low descriptors Claims of harm reduction	thol) Congress (Family Smoking Prevention Act)

Flavored Tobacco is a Major Attractant to Youth:

Flavored tobacco is a major draw for underage youth. For centuries tobacco came in only one flavor- plain tobacco. In the mid-20th century menthol cigarettes were introduced and became popular among youthful starter smokers and especially African Americans. None of this was accidental - to drive demand these groups were comprehensively targeted by the makers of Kool, Newport, and Salem via intensive advertising bombardment. Today tobacco comes in thousands of flavor varieties, especially e-cigarettes and mini-cigars, in sweet treat flavors such as cotton candy, gummy bear, and mango. In an attempt to hide their youth-oriented flavors brands adopt "concept" flavor names hence Fruity mango becomes "gold," berry blast – "solar," and other sweet, fruity and creamy flavors carry names like "Unicorn puke."

In 2009, Congress banned all flavors from cigarettes except for tobacco and menthol. In 2020, the favor ban was extended, but narrowly focused on pod-type e-cigarettes. Such narrowly focused bans are doomed to fail as the industry simply innovates around them – in this case by offering disposable e-cigarettes in every conceivable sweet and fruity flavor. To protect American youth, flavors including menthol should be banned from all tobacco products.



RUIT (69, 50%)				FRUIT & MENTHOL/MINT (ICE) (33, 23.6%)	Passion Fruit Ice	Chocolate Milk
Apple (Green)	Grapefruit Guava	Orange Peach	Strawberry Peach	Apple Ice	Peach Ice	Cola
Apple (Red)	Guava	O.M.G (Orange, Mango & Guava)	Strawberry Wafer	Apple Kiwi Ice	Pear Ice	My Bull/No Bull
Apple Watermelon Guava	Honeydew	Peach	Strawberry Watermelon	Banana Ice	Pineapple Ice	Cinnablaze
Banana	Kick Start (Blueberry & Pomegranate)	P.O.G. (Passion, Orange & Guava)	Strawberry Watermelon Blueberry	Banana Taffy Ice	Pomegranate Ice	Vanilla Custard
Berries	Kiwi	Pineapple	Strawberry Yogurt	Blueberry Raspberry Ice	Raspberry Ice	ALCOHOL (3, 2.1%)
Berry Gelato	Lemon	Pineapple Mango	Watermelon	Blueberry Raspberry Strawberry Ice	Sour Apple Ice	Adios M@#%+&! (Brazilian Curaçao & Citrus Mix)
Blazing Vibe (Mango, Apple & Orange)	Lemon Cracker	Pineapple Orange	4Play (Mixed Melons)	Blush Slushie (Raspberry Strawberry Ice)	Strawberry Ice	
Blood Orange	Lemon Tart	Pineapple Strawberry Coconut	FRUITY DRINKS (12, 8.6%)	Bubblegum Ice	Strawberry Guava Ice	Piña Colada
Blueberry	Lychee	Pomegranate	Blueberry Lemonade	Cola Ice	Strawberry Lemonade Ice	Russian Cream (Vanilla Smooth Cream
Blueberry Cheesecake	Mango	Red Raspberry	Cherry Lemonade	Grape Ice	Strawberry Kiwi Ice	MENTHOL/MINT (3, 2.1
Blueberry & Raspberry & Pomegranate	Mango Guava	Sour Apple	Grape Soda	Guava Ice	Strawberry Watermelon Ice	Cool Mint (Mint & Menthol)
Blueberry Guava	Mango Lychee		Lemonade	Honeydew Ice	CANDY (5, 3.6%)	Menthol
Blue Razz (Blueberry & Raspberry)	Mango Peach	Strawberry	Lychee Soda	Kiwi Mango Ice	Grape Purple Haze (Grape Bubblegum)	Mint
Cactus Jackfruit Mandarin	Mango Peach Guava	Strawberry Banana	Orange Soda	Lemon Ice	Chocolate	TOBACCO (5, 3.6%)
Cherry	Mango Peach Pineapple	Strawberry Dragonfruit	Peach Lemonade	Lush Ice (Watermelon)	Gummy Bear	Butterscotch Tobacco
Cosmic Banana (Banana & Lemon)	Melon	Strawberry Graham Cracker	Peach Soda	Lychee Ice	Rainbow Burst (Skittles)	Cuban Cigar
Cucumber	Melon Ice Cream	Strawberry Ice Cream	Pineapple Lemonade	Magic Dragon (Blueberry Ice)	Watermelon Bubblegum	Havana Cream
Cucumber Lime	Mixed Fruit (Banana, Grape, Peach, Strawberry, Kiwi, Orange)	Strawberry Kiwi	Pink Lemonade	Mango Ice	OTHER (8, 5.7%)	Tobacco
Dragon Venom Dragonfruit & Strawberry)	Orange	Strawberry, Kiwi & Pomegranate	Pomegranate Lemonade Punch	Melon Ice	Black Coffee	Tobacco & Nuts
Frozen Mango	Orange Cream	Strawberry Mango	Watermelon	Menthol Lemon	Boba (Bubble Tea)	UNFLAVORED (1, 0.7%)
Grape	Orange Kiwi	Strawberry Passion Fruit	Lemonade	Orange/Tangerine Ice	Café Latte	Clear



The "Tobacco-Free" and Synthetic Nicotine" Legal Loophole Urgently Needs to be Closed

More than a decade after the FDA was given authority over tobacco products it is invoking its regulatory authority over newly emerging products via the PMTA (Premarket Tobacco Application) process. Numerous small companies lack the resources to fulfill the rigorous application requirements, which necessitates numerous costly clinical and toxicological investigations, have no choice other than abandoning their business or finding a means of being exempted from the PMTA process. As the deadline for the PMTA approached, a surge of nicotine containing brands emerged on the US market sporting claims such as "tobacco-free nicotine" and/or "synthetic nicotine."

The 2009 Federal law defined a tobacco product as derived from any part of the tobacco plant. In a cynical attempt to exempt their products from regulation, many companies introduced brands they claim are "tobacco-free," mostly based upon the use non- tobacco derived "synthetic nicotine." Advertisements for products emphasize their supposed "cleanliness and purity" implying that they are more healthful. The inclusion of the word "free" suggests freedom from harm.

These "tobacco-free" nicotine brands are widely sold on major online stores (e.g., Amazon, eBay, Target) which have policies prohibiting tobacco sales, and are easily purchased by underage individuals. Some of these brands claim exemption from tobacco taxation and ignore provisions of the PACT Act (which specifically references synthetic nicotine).

The case of Puff Bar disposable e-cigarettes is illustrative. Following the January 2020 ban on flavored pod e-cigarettes, Puff Bar flourished due to its close resemblance to JUUL and its innumerable sweet and fruity flavors. In July 2020, the FDA ordered Puff Bar to cease its sales as it had not been authorized to be on the market. Shortly thereafter, Puff Bar resumed sales and claimed that

it was now formulated with synthetic nicotine and thus exempt from regulation. This highlights the urgent need for Congress to close the 2009 loophole by designating all forms of nicotine to be either a drug or tobacco product.





Smoking Cessation Claims:

While quitting is a more desirable outcome, it is a worthwhile goal to help adult smokers to transition to a less harmful means of satisfying their nicotine addiction. While it will not be known for certain until decades have passed, non-combustible products such as e-cigarettes are likely safer than cigarettes. So far, while e-cigarettes are a bit more effective than traditional nicotine replacement therapies (e.g. patches, gums), durable smoking cessation still only succeeds in a small minority of cases. This is offset by smokers using cigarettes (where allowed) and e-cigarettes (where smoking is banned). This so-called dual use deepens nicotine addiction. The lack of cessation efficacy has not prevented advertisers from messaging potential customers that their brands is good "switching" or an "alternative" and other clever but easily understood slogans such as "it worked for me."



The Nicotine Arms Race and the Need for a Cap on Nicotine Concentration:

One legacy of JUUL is that it triggered a "nicotine arms race" tripling the average concentration of nicotine in e-liquids from 1-2% to 5-6% - a potently addictive level for nicotine naïve youth. Initiating nicotine addiction via conventional cigarettes takes considerable effort on the part of a teenager. Upon initial experience the smoke triggers coughing fits due to its harshness. Also, tobacco smoke is an acquired taste and is notably unpleasant to most non-smokers. If a beginner pushes beyond a limited number of puffs, the youth typically get sick, with nausea and even vomiting.

The experience of being introduced to nicotine via a high nicotine e-cigarette is markedly different. Because the vapor is much less noxious than cigarette smoke and tastes sweet or fruity, teens can take in large quantities of nicotine rapidly. Many teens report a nicotine "head buzz" with JUUL – a pharmacologic effect of high levels of nicotine on the brain seldom seen with smoking. The social nature of vaping, and the urge of teens to join the crowd and to eagerly do what is popular among their peers, leads to excessive use with rapid induction of nicotine tolerance and deepening addiction. Some teens have gone so far as to trigger seizures due to nicotine overdose using high nicotine e-cigarettes.

Most teens do not understand addiction and believe they can quit anytime, even though they wake up at night with chills and cravings and reach for their e-cigarette. Many teens suck on their device first thing in the morning (a clear indicator of addiction) and periodically throughout the day. Nicotine addiction is notoriously hard to break. The consequences of withdrawal are intensely unpleasant, which becomes a major deterrent to quitting. Once hooked on nicotine, many teens graduate to other tobacco products, including cigarettes.

Europe, the United Kingdom, and Israel all limit the amount of nicotine in e-cigarettes to under 2%. In the US there is no cap enabling the market to be flooded with super high nicotine products. A disturbing new trend is large volume disposable e-cigarettes. A JUUL pod delivered approximately the same number of puffs (200) at similar nicotine delivery to a pack of 20 cigarettes. Regulation is needed which caps the concentration of nicotine (e.g. to 2% as in Europe, UK, and Israel).

Large Volume e-Cigarettes and the Need for a Cap on Nicotine Volume

Some disposable e-cigarettes deliver thousands of puffs of highly concentrated nicotine initially 1000-2000 puffs and 5000-6000 puff monsters with the nicotine equivalent of some 3 cartons full of cigarettes (i.e. @ 600 cigarettes worth of nicotine) at a very modest price. Regulation is needed which caps the volume of nicotine per product (e.g. to no more than equivalent to single pack of cigarettes).





Disingenuous Public Relations Example: Philip Morris "Foundation for a Smoke Free World"

In September 2017, Philip Morris International (PMI) launched what it dubbed a "Foundation for a Smoke-Free World." The company pledged to spend \$1 billion over a 12-year period, \$80 million per year, purportedly to support tobacco harm reduction by accelerating research into alternatives to cigarettes. While the company claims that the Foundation is free from PMI's control, critics have pointed out that the corporation maintains substantial control. Incongruous slogans such as "A tobacco company that actually cares about health," which headlined a full-page Wall Street Journal advertisement in January 2019, are revealing. They also featured advertisements with the slogan: "Our New Year's resolution – We're trying to give up cigarettes." It seems clear that PMI's "unsmoke campaign" is not focused upon smoking cessation, but rather legitimizing and promoting alternative nicotine delivery – i.e. its IQOS product. As PMI remains active in undermining policies intended to reduce cigarette use, many public health advocates believe that the company created the Foundation as a public relations measure to burnish its image while promoting its IQOS brand. While it should be obvious, it should be emphasized that if PMI were serious about achieving a "smoke free world," it would halt its aggressive worldwide marketing of Marlboro and its other heavily promoted cigarette brands.



Plummeting Price of Nicotine Addiction:

An observation about predatory pricing strategies in 2021. JUUL started out with a price of \$50, a challenge for teens with limited discretionary income. This month I bought a JUUL in a California gas station at the nationally advertised price of only \$4.99 – 10% of JUUL's original price. For a mere \$1.49 I bought a VUSE e-cigarette, an RJ Reynold's product, a price far no doubt well below the cost of its manufacture.

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The Need for Comprehensive Regulation

As a matter of public health policy, protecting teens from nicotine addiction is of utmost importance. After all, the single most effective means of stemming smoking among the adult population is to keep kids from becoming addicted in the first place. Comprehensive Federal regulation is needed to encompass advertising (content and delivery channels), flavors, and nicotine (Limit on both concentration and volume).

Selected SRITA Academic Papers

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- Ramamurthi D, Fadadu RP, Jackler RK. Electronic cigarette marketers manipulate anti-tobacco advertisements to promote vaping. Tob Control 2015 (e-ahead of print). (doi: 10:1136/tobaccocontrol-2015-052661.)

Manuscripts undergoing peer review:

Tobacco or Not Tobacco: Ambiguities in Marketing "Tobacco-Free" and "Synthetic Nicotine" Products

Flavor Spectrum of the Puff Family of Disposable e-Cigarettes