

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
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NAME: Caputi, Theodore

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Graduate Student

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	END DATE MM/YYYY	FIELD OF STUDY
University of Pennsylvania, Philadelphia, PA	BS	08/2017	Economics
University College Cork, Cork	MPH	02/2019	Advanced Epidemiology
University of York, York	PHD	06/2022	Health Sciences
Massachusetts Institute of Technology, Cambridge, MA	PHD	06/2026	Economics

A. Personal Statement

I am a University of Pennsylvania and Harvard trained data scientist who studies the epidemiology of mental and behavioral health conditions. I have led several studies using traditional survey data and novel “big data” to track some of the most important trends in modern public health practice. For example, I led a study, published in the Journal of the American Medical Association, that used data from the Center for Disease Control’s Youth Behavioral Risk Surveillance System to track the increased risk of suicide behaviors among Lesbian, Gay, Bisexual and Questioning adolescents. I have also led three major studies using Google Search data to study increased interest in heated tobacco products (published in PLOS One), increased interest in purchasing marijuana products online (published in American Journal of Preventive Medicine), and increased interest in sexual harassment prevention and reporting following Alyssa Milano’s #MeToo tweet (published in JAMA Internal Medicine). My studies consistently appear in top medical and public health journals and attract substantial responses by academics and the public, evidenced through academic citations and Altmetric scores.

1. Caputi T. Medical marijuana, not miracle marijuana: some well-publicized studies about medical marijuana do not pass a reality check. *Addiction*. 2019 March 12; :-.
2. Caputi T, Sabet K. Population-Level Analyses Cannot Tell Us Anything About Individual-Level Marijuana-Opioid Substitution. *American Journal of Public Health*. 2018 March; 108(3):e12-e12.
3. Caputi T, Humphreys K. Medical Marijuana Users are More Likely to Use Prescription Drugs Medically and Nonmedically. *Journal of Addiction Medicine*. 2018; 12(4):295-299.
4. Caputi T, Humphreys K. Medicare Recipients’ Use Of Medical Marijuana. *Health Affairs*. 2016 October; 35(10):1936-1936.

B. Positions and Honors**Positions and Employment**

2018 - 2019	Pre-Doctoral Research Fellow, Harvard University Department of Economics, Cambridge, MA
2019 -	Graduate Student, University of York, York
2019 -	Graduate Student, Massachusetts Institute of Technology, Cambridge, MA
2019 -	President and CEO, Data Science Solutions, LLC, New Hope, PA

Other Experience and Professional Memberships

2012 - 2017 Institutional Review Board Member, Treatment Research Institute
2016 - National Advisory Board Member, Drug Free America Foundation
2018 - Member, American Society for Addiction Medicine

Honors

2017 - 2019 George Mitchell Scholarship, US-Ireland Alliance
2019 - 2021 British Marshall Scholarship, Marshall Commission

C. Contribution to Science

1. I have led several important studies on the mental health and substance use risk of sexual minority (Lesbian, Gay, Bisexual, and Questioning) adolescents. Specifically, I reported on the increased suicide risk behaviors of sexual minority adolescents, the increased substance use risk of sexual minority adolescents, and the role of gender and sexual orientation on substance use risk among sexual minority adolescents.
 - a. Caputi T, Smith L, Strathdee S, Ayers J. Substance Use Among Lesbian, Gay, Bisexual, and Questioning Adolescents in the United States, 2015. *American Journal of Public Health*. 2018 August; 108(8):1031-1034.
 - b. Caputi T. Sex and orientation identity matter in the substance use behaviors of sexual minority adolescents in the United States. *Drug and Alcohol Dependence*. 2018 June; 187:142-148.
 - c. Caputi T, Smith D, Ayers J. Suicide Risk Behaviors Among Sexual Minority Adolescents in the United States, 2015. *JAMA*. 2017 December 19; 318(23):2349-.
2. I have fostered a better understanding of the "ecological fallacy" in the marijuana-opioid substitution discourse. Specifically, I have described how several studies have conflated population-level trends with individual-level substitution, provided evidence that medical marijuana use is a risk factor for non-medical prescription pain use at the individual level, and demonstrated how the results of many ecological studies do not pass a basic reality check.
 - a. Caputi T. Medical marijuana, not miracle marijuana: some well-publicized studies about medical marijuana do not pass a reality check. *Addiction*. 2019 March 12; :-.
 - b. Caputi T, Sabet K. Population-Level Analyses Cannot Tell Us Anything About Individual-Level Marijuana-Opioid Substitution. *American Journal of Public Health*. 2018 March; 108(3):e12-e12.
 - c. Caputi T, Humphreys K. Medical Marijuana Users are More Likely to Use Prescription Drugs Medically and Nonmedically. *Journal of Addiction Medicine*. 2018; 12(4):295-299.
 - d. Caputi T, Humphreys K. Medicare Recipients' Use Of Medical Marijuana. *Health Affairs*. 2016 October; 35(10):1936-1936.
3. I was among the first researchers to highlight the emerging popularity of heated tobacco products (HTPs), also known as heat-not-burn tobacco products. Specifically, I raised awareness of tobacco corporations' hopes for HTPs and used Google search data to demonstrate explosive interest in HTPs among Japanese residents, rivaling US levels of interest in electronic cigarettes.
 - a. Caputi TL, Leas E, Dredze M, Cohen JE, Ayers JW. They're heating up: Internet search query trends reveal significant public interest in heat-not-burn tobacco products. *PLoS One*. 2017;12(10):e0185735. PubMed PMID: [29020019](#); PubMed Central PMCID: [PMC5636077](#).
 - b. Caputi TL. Industry watch: heat-not-burn tobacco products are about to reach their boiling point. *Tob Control*. 2016 Sep;26(5):609-610. PubMed PMID: [27558827](#).
4. I have helped introduce the use of novel data to public health, including the use of methods from computer science. Specifically, I have led a study that used a time series algorithm and Google

Searches to demonstrate interest in tax evasion following the implementation of cigarette excise tax increases and contributed to a study using machine learning algorithms to characterize hundreds of thousands of news stories related to electronic cigarettes. I am currently leading a study focused on exploring which news stories focused on tobacco receive the highest number of shares on social media.

- a. Ayers JW, Dredze M, Leas EC, Caputi TL, Allem JP, Cohen JE. Next generation media monitoring: Global coverage of electronic nicotine delivery systems (electronic cigarettes) on Bing, Google and Twitter, 2013-2018. PLoS One. 2018;13(11):e0205822. PubMed PMID: [30388126](#); PubMed Central PMCID: [PMC6214510](#).
- b. Caputi TL. Google Searches for "Cheap Cigarettes" Spike at Tax Increases: Evidence from an Algorithm to Detect Spikes in Time Series Data. Nicotine Tob Res. 2018 May 3;20(6):779-783. PubMed PMID: [28645212](#).

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

1000289389, National Science Foundation Caputi, Theodore (PI) 09/01/19-09/01/24
Graduate Research Fellowship
Role: PI