

October 27, 2020

Dear Members of the California Cannabis Advisory Committee,

I am writing this letter to address an item on your October 30, 2020 agenda (Item #6) related to possible action on recommendations related to impacts of high-THC consumption research. As many in the scientific community, like myself, may be unable to participate in your virtual meeting, and because decisions such as state regulation of high THC cannabis products must be made with the best scientific evidence, I believe it is necessary for you to hear directly from a large group of scientists.

I am a tenured, full professor at the University of Southern California's Sol Price School of Public Policy and Senior Fellow in the USC Schaeffer Center for Health Policy & Economics. I have conducted NIH sponsored research on cannabis markets and their public health impacts for more than two decades, provided consultation to U.S. states and Canada regarding their cannabis liberalization policies, and currently serve on the World Health Organization's Technical Expert Committee on Public Health Risks Association with Cannabis Use and Cannabis Use Disorders. Through my research and experiences, I have nurtured a broad network of scientific scholars who are top experts in their fields, ranging from pharmacology, neuroscience, neuropsychology, chemistry, public health, medicine, toxicology, criminal justice and epidemiology, to ensure that I stay abreast of the science in each of these areas as it pertains to my own research. I drew on that network to generate the list of signatories you will find here. While we come from different fields of study, have different scientific approaches, and even different beliefs concerning the benefits and harms of a legal cannabis market, there is genuine agreement regarding the strength of the emerging evidence with respect to high THC products and their association with adverse health outcomes for specific populations.

That is not to say that there are not positive medical benefits associated with consumption of high-THC products for some individuals. However, a public health and public safety approach would require the adoption of regulations to address the unique risks, harms, and public health costs associated with consumption of high THC products, which differ from consumption of low THC products. While there is currently no clear definition of "high-THC", the current science focuses on dosage of use. There is increasing evidence of a "dose-response" relationship exists with the following negative health events, particularly identified in targeted age groups, demographic groups, and/or at -risk populations:

- Cannabis hyperemesis syndrome \* psychosis and psychotic disorders, \* depression, \* respiratory symptoms and illnesses, \* cardiovascular symptoms \* gastrointestinal symptoms, \* psychomotor performance (leading to increased motor vehicle injuries), \* acute nonfatal cannabis poisonings \* cannabis use disorder.

The science continues to grow its level of understanding regarding these relationships as well as others, so this should not be viewed as a comprehensive list. Nonetheless, there is indeed a growing consensus of the unique risks of high-THC products for particular subpopulations.

Two independent scientific workgroups, convened at the request of the states of Washington and Colorado, reviewed the most recent evidence on the topic and formulated similar consensus statements in their final reports. Both concluded that consumption of higher potency cannabis products contributes in a dose-response manner to adverse health, with an increased risk for young users and those with pre-existing mental health conditions. Similarly, just last week the American Society of Addiction Medicine (ASAM) released a public commentary on cannabis, acknowledging the therapeutic benefit of medical cannabis, the harm of prohibition, but the need to limit potency in a recreational market in light of known adverse health events. The signatories to this letter agree with the assessment that high THC products should be regulated differently from low THC products, particularly in the recreational market.

We appreciate the Committee's careful consideration of how to regulate high THC cannabis products in California, using the best available science on which to base your decision.

Sincerely,



Rosalie Liccardo Pacula, Ph.D.

Elizabeth Garrett Chair in Health Policy, Economics & Law and Professor of Health Policy and Management

Sol Price School of Public Policy

Schaeffer Center for Health Policy & Economics


University of Southern California

Enclosure

The following scientists (name, title, institution and signature) support the statement of this letter that there is adequate scientific research to support differential regulation of high-THC products for recreational use by adults.

**Name:** Dr. George Sam Wang

**Position/Institution:** Associate Professor of Pediatrics, University of Colorado Anschutz Medical Campus, Children's Hospital Colorado

**Signature:**  \_\_\_\_\_

**Name:** Dr. Wayne Hall

**Position/Institution:** Professor, National Centre for Youth Substance Use Research, Faculty of Health and Behavioural Sciences, University of Queensland, Australia

**Signature:**  \_\_\_\_\_

**Name:** Jane Steinberg, Ph.D., MPH

**Position/Institution:** Assistant Professor, Department of Preventive Medicine, Keck School of Medicine at USC

**Signature:**  \_\_\_\_\_

**Name:** Dr. Janni Leung

**Position/Institution:** Research Fellow, School of Psychology & National Centre for Youth Substance Use Research, Faculty of Health and Behavioural Sciences, University of Queensland, Australia.

**Signature:**  \_\_\_\_\_

**Name:** Dr. Gary Chan

**Position/Institution:** Research Fellow, National Centre for Youth Substance Use Research, Faculty of Health and Behavioural Sciences, University of Queensland, Australia.

**Signature:**  \_\_\_\_\_

**Name:** Katherine Keyes

**Position/Institution:** Columbia University Mailman School of Public Health

**Signature:**  \_\_\_\_\_

**Name:** Robin Room

**Position/Institution:** Distinguished Professor, La Trobe University, Melbourne, Australia

**Signature:** 

**Name:** Keith Humphreys

**Position/Institution:** Professor, Department of Psychiatry & Behavioral Sciences, Stanford University, School of Medicine

**Signature:** 

**Name:** Dr. Eva Hoch

**Position/Institution:** Head of Cannabinoid Research Group, Department of Psychiatry & Psychotherapy, Department of Psychology, Ludwig-Maximilian University, Munich Germany

**Signature:** 

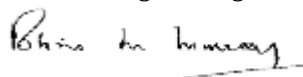
**Name:** Dr Nadia Solowij

**Position/Institution:** Professor, School of Psychology, University of Wollongong, NSW and Co-Director The Australian Centre for Cannabinoid Clinical and Research Excellence (ACRE), Australia

**Signature:** 

**Name:** Sir Robin Murray

**Position/Institution:** King's College, London, UK

**Signature:** 

**Name:** Dr. David Hammond

**Position/Institution:** Professor, School of Public Health, University of Waterloo, Canada

**Signature:** 

**Name:** Timothy Naimi

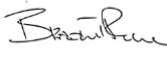
**Position/Institution:** Director, Canadian Institute for Substance Use Research

**Signature:** 


**Name:** Martin Y. Iguchi  
**Position/Institution:** Senior Behavioral Scientist, RAND Corporation

**Signature:** 

**Name:** Brad Rowe  
**Position/Institution:** Lecturer Cannabis Policy and Society at UCLA Luskin School of Public Affairs

**Signature:** 


**Name:** Anne Boustead, J.D., Ph.D.  
**Position/Institution:** Assistant Professor, University of Arizona

**Signature:** 


**Name:** David Kerr, Ph.D.  
**Position/Institution:** Professor, School of Psychological Science, Oregon State University

**Signature:** 

**Name:** Ziva D Cooper, PhD  
**Position/Institution:** Director, UCLA Cannabis Research Institute, Associate Professor, Jane and Terry Semel Institute for Neuroscience and Behavior, Department of Psychiatry and Biobehavioral Sciences, UCLA DGSOM

**Signature:** 

**Name:** Yuyan Shi, Ph.D.  
**Position/Institution:** Associate Professor, Herbert Wertheim, School of Public Health and Human Longevity Science, University of California San Diego

**Signature:** 

**Name:** Meenakshi S. Subbaraman, PhD  
**Position/Institution:** Biostatistician, Director of Statistical & Data Services, Alcohol Research Group, Public Health Institute

**Signature:** 


**Name:** Alan J. Budney, Ph.D.  
**Position/Institution:** Dartmouth College, Geisel School of Medicine  
**Signature:** *AlanJBudney*

**Name:** Deborah Hasin, Ph.D.  
**Position/Institution:** Professor, Columbia University Dept of Psychiatry  
**Signature:** *Deborah Hasin*

**Name:** Jacob T. Borodovsky  
**Position/Institution:** Washington University School of Medicine in St. Louis

**Signature:** 

**Name:** Benedikt Fischer, PhD  
**Position/Institution:** Hugh Green Foundation Chair in Addiction Research and Professor; Schools of Population Health & Pharmacy; Faculty of Medical and Health Sciences, University of Auckland, New Zealand

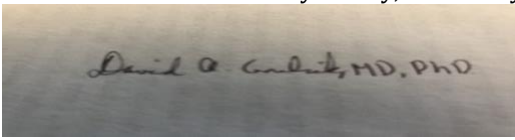
**Signature:** 

**Name:** William C. Kerr, Ph.D.  
**Position/Institution:** Senior Scientist and Center Director, Alcohol Research Group, Public Health Institute  
**Signature:** *WC Kerr*

**Name:** Chinazo Cunningham, MD, MS  
**Position/Institution:** Professor of Medicine, Family & Social Medicine, Psychiatry & Behavioral Sciences at the Albert Einstein College of Medicine

**Signature:** 

**Name:** David A. Gorelick, MD, PhD  
**Position/Institution:** Professor of Psychiatry, University of Maryland

**Signature:** 

**Name:** Steven Davenport, PhD  
**Position/Institution:** RAND Corporation, Adjunct Researcher; Center for New Data, Co-Executive Director

**Signature:** 

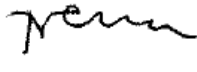
**Name:** Beatriz H. Carlini, PhD, MPH

**Position/Institution:** Research Scientist, Cannabis Research and Education. Alcohol and Drug Abuse Institute-ADAI. Affiliate Associate Professor and Director, Tobacco Studies Program. School of Public Health, Health Services, University of Washington

**Signature:** 


**Name:** Tom Freeman, PhD

**Position/Institution:** Senior Lecturer and Director, Addiction and Mental Health Group, University of Bath

**Signature:** 

**Name:** Brian J. Sherman, Ph.D.

**Position/Institution:** Assistant Professor, Medical University of South Carolina

**Signature:** 

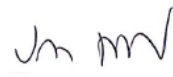
**Name:** John T. Carnevale, PhD

**Position/Institution:** President/ CEO of Carnevale Associates

**Signature:** 


**Name:** Valentina Lorenzetti

**Position/Institution:** Australian Catholic University

**Signature:** 

**Name:** Gregory J Tung, PhD

**Position/Institution:** Associate Professor, Department of Health Systems, Management & Policy, Colorado School of Public Health

**Signature:** 

**Name:** Kevin P. Haggerty

**Position/Institution:** Social Development Research Group, University of Washington

**Signature:** 


**Name:** Julia Dilley

**Position/Institution:** Epidemiologist; Affiliate Instructor, School of Public Health and Community Medicine, University of Washington

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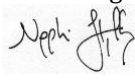
**Name:** Caislin Firth

**Position/Institution:** Research Scientist, Alcohol & Drug Abuse Institute, University of Washington

**Signature:** 

**Name:** Nephi Stella

**Position/Institution:** Professor, Department of Pharmacology and of Psychiatry and Behavioral Sciences, University of Washington

**Signature:** 

**Name:** Jennifer A. Bailey

**Position/Institution:** Principal Research Scientist, Social Development Research Group, University of Washington

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