



State Lists Cannabis Smoke and THC under Prop. 65

DARTIC, PROPOSITION 65, OEHHA

By FIONA SMITH, February 4, 2020

The Developmental and Reproductive Toxicant Identification Committee (DARTIC) within the Office of Environmental Health Hazard Assessment (OEHHA) has **voted to list cannabis smoke and Delta-9-tetrahydrocannabinol (THC)¹** as reproductive toxicants under Proposition 65.

Members of DARTIC met December 11 and voted unanimously to list cannabis smoke—and voted 8-1 to list THC—as reproductive toxicants on the developmental toxicity endpoint. The listing became effective on January 3 of this year and the warning requirement kicks in on January 3, 2021.

In voting yes to list cannabis smoke, DARTIC member Tracey Woodruff pointed to the biological mechanistic data and noted that while the human studies show variability in the effects of cannabis smoke, "it is consistent with the animal evidence that was presented, particularly for the neurodevelopmental effects," Woodruff said. The evidence of its effects on bone growth were "particularly compelling," she said.

Other DARTIC members cited evidence of cannabis use affecting a child's birth weight, attention and cognition.

The main psychoactive substance in cannabis—THC—appears to have similar effects to cannabis smoke, the committee concluded in its vote on listing THC. Member Aydin Nazmi voted against listing THC, citing a lack of specific evidence related to THC.

DARTIC members Isaac Pessah and Charles Plopper were not present at the meeting.

Two representatives from the pro-cannabis group California NORML were the only ones to make public comment. They argued that the existing evidence is insufficient to warrant a Prop. 65 listing.

"To date, the only human studies that have been conducted involve women who have smoked cannabis during pregnancy, meaning we have data on cannabis smoke but not on THC or any other cannabinoid ... nor do we have studies on cannabis that is vaporized, taken orally or topically etcetera during pregnancy in women," said Ellen Komp, deputy director of California NORML.

Recreational use of cannabis was legalized in California in 2018, and due to concern over its use by pregnant women, OEHHA's director and the DARTIC chair determined to consider listing cannabis smoke and THC as a reproductive toxicants, according to **OEHHA's hazard identification materials²**.

The Developmental and Reproductive Toxicant Identification Committee (DARTIC) Members Are:

- Patrick Allard has been an assistant professor at the University of California, Los Angeles School of Public Health since 2012. He was a post-doctoral fellow at Harvard Medical School from 2005 to 2012. Allard earned a Doctor of Philosophy degree in biology from McGill University and a Master of Science in the biology of aging from the Paris Descartes University.
- Diana Auyeung-Kim has been director of development sciences management at Genentech since 2017. Previously, at Allergan plc, she was director in toxicology and nonclinical and translational sciences study support from 2015 to 2017 and principal scientist/senior manager in toxicology from 2010 to 2014. She held several positions at Charles River Laboratories Inc. from 2002 to 2010, including program associate for developmental and reproductive toxicology, associate director of research, senior research scientist, and research scientist. Auyeung-Kim was a human health risk assessor and assistant project manager at TetraTech EM Inc. from 1993 to 2000 and a certified pharmacy technician at Sutter and Mercy General Hospitals from 1989 to 1992. She is a member of The Teratology Society, the Society of Toxicology, American College of Toxicology and is a Diplomate of the American Board of Toxicology. She earned a Doctor of Philosophy degree in pharmacology and toxicology from the Virginia Commonwealth University and a Master of Business Administration degree from the University of Nevada, Reno.
- Laurence Baskin has worked at the University of California as professor of urology and pediatrics since 2004 and been a surgeon scientist since 1993. In 1997, he was appointed chief of pediatric urology. He is primary author on over 200 peer-reviewed articles, editor of the Handbook of Pediatric Urology, Hinman's atlas of Pediatric Urologic Surgery and Assistant editor of the pediatric section, Journal Urology. He is Principal Investigator on basic urologic research, clinical and mentoring grants funded by the National Institutes of Health (NIH) and National Science Foundation. He is presently head of the NIH study section on urologic disease. He is president of the Society for Pediatric Urology and was previously president of the Society for Fetal Urology, the Asia-Pacific Association of Pediatric Urology, the Society of Genitourinary Reconstructive Surgeons and the American Association of Pediatric Urology. He is a member of the American Urological Association and the Society of Pediatric Urologic Surgeons and a fellow at the American College of Surgeons and American Academy of Pediatrics. He earned a doctorate degree in medicine at the University of California, Los Angeles.
- Carrie Breton has been an associate professor at the University of Southern California since 2017 and director of the Maternal and Developmental Risks from Environmental and Social Stressors Center for Environmental Health Disparities since 2015. At USC she has held several positions, including assistant professor from 2009 to 2017, post-doctoral fellow from 2007 to 2009 and project assistant from 1999 to 2000. Breton earned a Doctor of Science degree in epidemiology from the Harvard School of Public Health and a Master of Public Health degree in epidemiology from the University of California, Los Angeles School of Public Health.
- Suzan Carmichael has been associate professor at the Stanford University School of Medicine Division of Neonatal and Developmental Medicine since 2010. She held several positions at the March of Dimes Foundation from 1998 to 2010, including division director and epidemiologist in the California Research Division and epidemiologist in the California Birth Defects Monitoring Program. She was an epidemic intelligence service officer in the Centers for Disease Control and Prevention Division of Reproductive Health from 1996 to 1998 and a research assistant at the University of California, Berkeley School of Public Health from 1993 to 1996 and at the Kaiser Permanente Medical Care Program, Division of Research in 1993. Carmichael was a child

survival specialist and health educator for the U.S. Peace Corps in 1992, a research assistant at the University of California, Davis Department of Human Development and Pediatrics from 1989 to 1992 and a laboratory assistant at the Texas A&M University Department of Animal Science in 1989. She earned a Doctor of Philosophy degree in epidemiology from the University of California, Berkeley and a Master of Science degree in international agricultural development from the University of California, Davis.

- Irva Hertz-Picciotto has been a professor at the University of California, Davis since 2002. She was a professor at the University of North Carolina, Chapel Hill from 1990 to 2003 and visiting scholar at the National Institute of Environmental Health Sciences from 1989 to 1990. Hertz-Picciotto is a member of the Society for Epidemiologic Research, International Society for Environmental Epidemiology and the International Society for Autism Research. She has served as Chair for four committees of the National Academy of Sciences, Engineering, and Medicine since 2000. She earned a Doctor of Philosophy degree in epidemiology, Master of Arts degree in biostatistics and Master of Public Health degree in epidemiology from the University of California, Berkeley.
- Ulrike Luderer became chair of the Developmental and Reproductive Toxicant Identification Committee in 2019. She has been a professor in the Department of Medicine, Division of Occupational and Environmental Medicine at the University of California, Irvine since 2013 and was associate professor from 2006 to 2013 and assistant professor from 1999 to 2006. She was a senior postdoctoral fellow at the University of Washington Department of Environmental and Occupational Health Sciences from 1998 to 1999 and completed her fellowship in occupational and environmental medicine there in 1998. She is a member of the Society for the Study of Reproduction, the Endocrine Society, the Society of Toxicology and the American College of Occupational and Environmental Medicine. She is chair of the California Environmental Contaminant Biomonitoring Program scientific guidance panel and served on the U.S. Environmental Protection Agency Science Advisory Board, Environmental Health Committee, among other service on national and international advisory panels. She earned a Master of Public Health degree from the University of Washington and doctorate degrees in neurobiology and physiology and in medicine from Northwestern University. She is board-certified in occupational medicine and internal medicine.
- Aydin Nazmi has been assistant professor at California Polytechnic State University, San Luis Obispo since 2009. He was a postdoctoral research fellow at the University of Michigan School of Public Health from 2008 to 2009 and served as a U.S. Peace Corps volunteer from 1999 to 2001. He is a member of the American Public Health Association, the Society for Epidemiologic Research, the International Epidemiological Association and the International Society for Developmental Origins of Health and Disease. He earned a Master of Science degree in public health nutrition from the London School of Hygiene and Tropical Medicine and a doctorate degree in epidemiology from the Federal University of Pelotas.
- Isaac Pessah has been a professor at the University of California, Davis since 1996 and has served as Chair of the Department of Molecular Biosciences since 2006. He was associate professor at the University of California, Davis from 1994 to 1998, assistant professor from 1987 to 1994 and a research specialist at the University of California, Berkeley from 1984 to 1987. He is a member of the American Chemical Society, the Society of Toxicology, the Biophysical Society and the American Society for Pharmacology and Experimental Therapeutics. He earned a Master of Science degree and a doctorate degree in toxicology from the University of Maryland.
- Charles Plopper has been professor emeritus at the University of California, Davis School of Veterinary Medicine's Department of Anatomy, Physiology and Cell Biology since 2005, where he

has served in several positions since 1979, including chairperson, acting chairperson, professor, associate professor and assistant professor. He was a senior staff fellow at the National Institute of Environmental Health Sciences Laboratory of Pulmonary Function and Toxicology from 1978 to 1979, associate professor at the University of Kuwait Department of Human Morphology and Experimental Pathology from 1977 to 1978, assistant professor at the University of Hawaii John A. Burns School of Medicine's Department of Anatomy and Reproductive Biology from 1975 to 1977 and a visiting research morphologist at the University of California, Davis California National Primate Research Center from 1974 to 1975. Plopper was chief of the Electron Microscopy Division at the Letterman Army Institute of Research, Presidio of San Francisco from 1974 to 1975 and chief of the U.S. Army Medical Research and Nutrition Laboratory's Electron Microscopy Branch, Pathology Division from 1972 to 1973. He earned a Doctor of Philosophy degree in anatomy from the University of California, Davis.

- Tracey Woodruff has been a professor in the Department of Obstetricians, Gynecology and Reproductive Sciences at the University of California, San Francisco since 2007. She was a scientist for the U.S. Environmental Protection Agency from 1994 to 2007. She is a member of the Society of Toxicology and the International Society of Environmental Epidemiology. She earned a Master of Public Health degree and a doctorate degree in bioengineering from the University of California, Berkeley.

Resources for this article

1. voted to list cannabis smoke and Delta-9-tetrahydrocannabinol (THC)

<https://oehha.ca.gov/proposition-65/crn/chemicals-listed-effective-january-3-2020-known-state-california-cause>

2. OEHHA's hazard identification materials

<https://prop65clearinghouse.com/documents/60432>