

July 19, 2024

The Honorable Anne Milgram
Administrator
U.S. Drug Enforcement Administration
8701 Morrisette Drive
Springfield, Virginia 22152

**Re: Schedules of Controlled Substances: Rescheduling of Marijuana,
Docket. No. DEA-1362**

Dear Administrator Milgram,

As a federally funded researcher in cannabis and cannabinoid psychopharmacology, I participated in a survey to acquire my opinion on the reclassification of cannabis from Schedule I to Schedule II or III under the Controlled Substances Act (CSA). The collective opinion is detailed in the following report.

Together we (me, and my colleagues) represent over 400 years of combined research experience and have received over \$78 million in federal grant funding for our cannabinoid research. As our funding on cannabis research has come from federal sources, our research is far less prone to bias and undue influence than research funded by private entities that may have a vested interest in a particular outcome. As researchers, we have expressed no opinions in the report on the legalization or commercialization of cannabis, but collectively believe that the classification of cannabis is more aligned with Schedule III.

The researchers in this survey indicated that their efforts in cannabis involved a broad range of different areas, which specifically included the harms associated with cannabis. In fact, more than 77 percent of survey responders indicated that their research involved investigation of cannabis-related harms stemming from acute intoxication, long-term use of cannabis, and its harms to public health and safety. Therefore, these researchers are well aware of the negative consequences related to cannabis use, yet they see it as a being appropriately classified as a Schedule III substance.

Enclosed with this letter is the survey that I participated in that details conclusions relating to the Eight Factor Analysis (8FA) conducted by the U.S. Food and Drug Administration (FDA), and the appropriateness of a Schedule III classification for cannabis. If you have any questions about this letter or the survey methodology, please do not hesitate to contact the survey study leads, Dr. Michael Sofis (sofismichael2@gmail.com) and Dr. Ari Kirshenbaum (arikirshenbaum@icloud.com).

Respectfully submitted,

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Matthew W. Johnson

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Objective

A survey study was performed to acquire the opinions of the top scientists working in the field of cannabis and cannabinoid psychopharmacology to inform the deliberations regarding the rescheduling of the substance.

Summary of Main Findings and Conclusions

The scientists who participated in this study reported having received a combined total of \$78 million in federal funding for their research on cannabis and a collective of 415 years of research knowledge in cannabis science. **The collective opinion of these well-informed scientists is that cannabis is most accurately characterized as a Schedule III substance.** Among these federally funded researchers, 86 percent agreed that categorizing cannabis as Schedule III would not harm public health. The identities of the scientists were confirmed in the data collection process, and many agreed to include their names and academic affiliations in this public comment.

The details of study methodology and results are delineated below.

I. Recruitment, Data Collection, and Timeline

Michael Sofis, PhD, and Ari Kirshenbaum, PhD, designed the survey questionnaire in the software platform Qualtrics™ in June of 2024. This study was approved on July 3, 2024, by an Institutional Review Board (IRB, Federalwide Assurance #6316) to ensure ethical research practices of the protection of human subjects.

Starting on Friday July 5, 2024, emails advertising the current survey study were sent out to individual academic researchers and to listservs containing the members of the American Psychological Association (specifically, Divisions 28 and 50 for psychopharmacology and addictions) and the Research Society on Marijuana. An additional 82 researchers were contacted directly via personal email. Overall, the best estimate based on the number of emails included on the listservs in addition to the individual outreach conducted suggests that at least 1,500 substance-use researchers were contacted via emails that included a brief description of the survey and a hyperlink to the Qualtrics™ website.

Survey data collection was closed on Wednesday July 10, 2024, to provide sufficient time for Drs. Sofis and Kirshenbaum to analyze data and write the underlying public comment. The results of the report were then shared with the signatories to gain their approval to be identified.

II. Survey Questions

After the scientists clicked on the hyperlink noted above, this information statement (verbatim) appeared:

The US Federal Government is now considering rescheduling cannabis (botanical cannabis sativa with more than 0.3% Delta-9-THC). The scientific community has an opportunity to influence this official rescheduling process via public comment which will be reviewed by administrative law judges: <https://www.federalregister.gov/documents/2024/05/21/2024-11137/schedules-of-controlled-substances-rescheduling-of-marijuana>.

The following survey will take about 5-minutes to complete. This project is led by Dr. Michael Sofis, and Dr. Ari Kirshenbaum and aims to assess the scientific community's viewpoints on rescheduling of cannabis from Schedule 1 to either a Schedule 2 or a Schedule 3 substance. Our hope is to provide the judges with effectual information gathered from the top scientists in the field at this critical moment in the rescheduling process.

We will ask if you wish to provide identifying information so that our team can ensure valid responses. Separately, we will also ask if you would be interested in listing your name as a contributor to the public comment, but not associated with the answers you provide.

We attest that we do not have any financial conflicts of interest which impact this study, nor it's intended purpose to provide objective information to the judges. This study has received IRB approval, and as part of the public discourse on the rescheduling process, we plan to pursue publication of the data obtained. You can exit out of the survey at any time without consequence, and you can contact the survey investigators if you have questions at (sofismichael2@gmail.com and arikirshenbaum@icloud.com).

Participants were asked whether they were a PhD, MD, or MPH who had published peer-reviewed scientific manuscripts on cannabis as a topic. Then a brief background on the *Controlled Substances Act* and key differences between Schedule II and Schedule III were listed as they are described on the DEA.gov website. These descriptions of the Schedule II and III categories included examples of substances contained within those classifications.

There were eight survey questions which corresponded directly to the Eight Factor Analysis (8FA) conducted by the U.S. Food and Drug Administration (FDA), which appears in their recommendation of cannabis as a Schedule III substance. For each of the eight factors, participants in the survey could indicate how strongly they felt cannabis aligned with each of the two categories (Schedule II or III) by using horizontal sliding scales. Manipulating the slider all the way left indicated a strong opinion that cannabis should be categorized as Schedule II; positioning the slider to the right was a strong opinion for Schedule III. Also, participants could select "No opinion" for each survey item and then elect not to provide any information on the sliding scales.

In a similar fashion to what is described for the 8FA we included survey items so that the participants could categorize cannabis as Schedule II or III on a variety of psychopharmacological features that render a drug dependence-producing substances. These features included the development of drug tolerance, withdrawal severity, acute toxicity, ability to treat cannabis use disorder (CUD), and whether the mental and physical-health risks associated with cannabis were more like Schedule II or Schedule III substances.

We asked participants to answer: "Overall public health will benefit, or be worsened, if cannabis is listed as a Schedule 3 versus Schedule 2." Participants rated this along a continuum from "Strongly worsened" to "Strongly Benefit."

The survey contained a total of 14 questions, and among these, there were questions which asked participants to identify themselves by their name and affiliation and provide their email address. Participants were told that these were to be kept confidential and only used by the study leads to verify identities. This was important to ensure that the public comment was informed

by legitimate scientists, and not by people who have not been actively and principally involved in cannabinoid science. Also contained in the survey was a question asking if we could use the participant's name in the public comment.

The survey, in its entirety, can be accessed at:

https://advocatesforhuman.qualtrics.com/jfe/form/SV_8v3Mxzpn6o1WW58

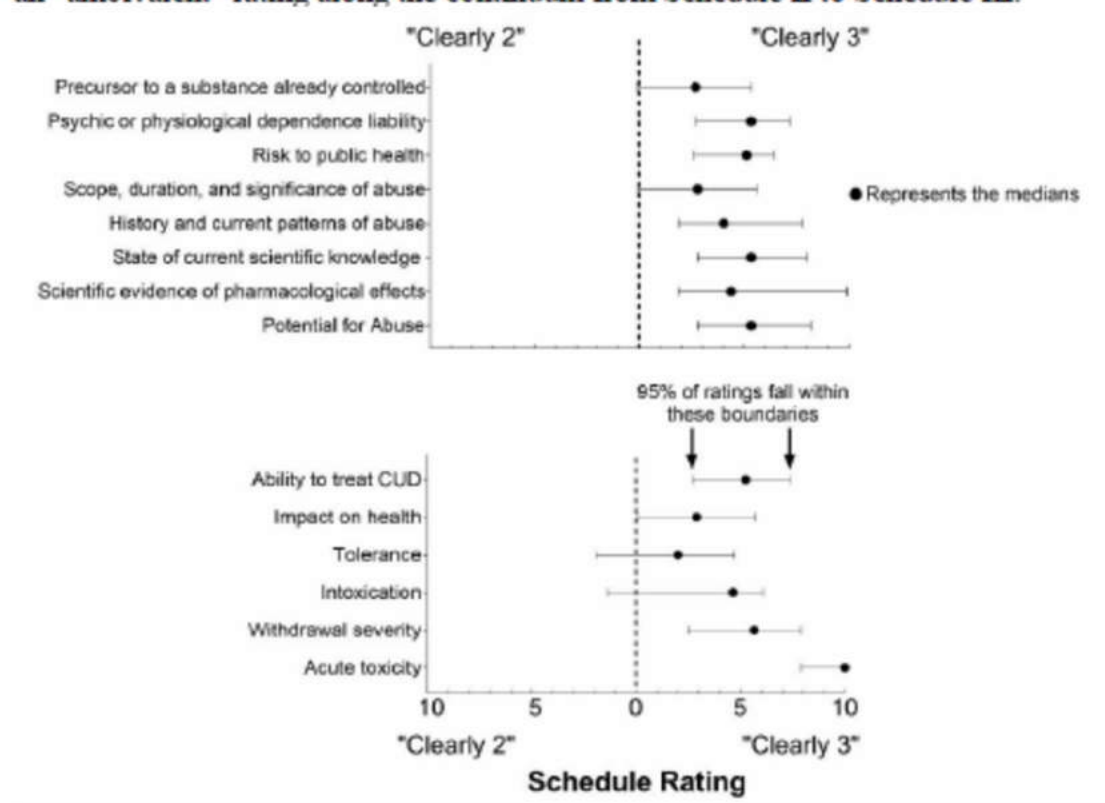
III. Results

Overall, 51 people responded to the survey, and 12 refused to indicate their name, email or affiliation. Therefore, without the ability to verify identities, our results were limited to 39 respondents. The following results only include those respondents who could be verified. These survey responders reported:

- An accumulated 415 years of combined research experience in cannabinoids.
- Having received \$78 million in combined federal funding for their cannabinoid research.
- Publishing peer-reviewed articles in scientific journals on the topic of cannabis or cannabinoid research, and 85 percent reported publishing more than 10 articles each.

The descriptive statistics (above) show that the survey participants were among the top researchers in cannabinoid science.

Figure 1. Scientists were asked to rate cannabis along a continuum from Schedule II to Schedule III using a sliding horizontal scale and each of the survey questions is listed on the left side of the figure. Data show 95 percent confidence intervals, and the dotted vertical line at zero represents an “ambivalent” rating along the continuum from Schedule II to Schedule III.



For each of the 8 Factors, medians from the 39 survey responders show consistent rating toward Schedule III on the 20-points scale (medians were used instead of means because the distribution of responses for each survey questions were not uniform). For two categories (i.e., “Scope, duration, and significance of abuse” and “Precursor to a substance already controlled”), fewer than 2.5% of responders indicated that they were in favor of Schedule II. Therefore, the weight of the collective opinion among these scientists is that cannabis is more appropriately placed in Schedule III versus II.

When asked to identify whether cannabis should be “Clearly Schedule 2” versus “Clearly Schedule 3,” the aggregated data for the FDA’s 8FA demonstrates uniform agreement that cannabis more closely adheres to Schedule III categorization.

The FDA’s 8FA does not necessarily coincide with the important features of a drug which characterizes abuse potential; therefore, we included questions that spoke more directly to these psychopharmacological features. For instance, the eight factors do not directly address the development of drug *tolerance*. The speed at which tolerance develops is important because it determines how quickly a user of the drug needs to escalate both frequency of use and dose to receive the desired drug effects. Regarding drug tolerance, the median viewpoint of the scientists is that cannabis is more closely aligned with Schedule III, although there was variability in that slightly more than 2.5 percent listed it closer to Schedule II; see **Figure 1**. Other survey items included intoxication, withdrawal severity, and acute toxicity (i.e., risk of overdose); for all of these, cannabis is again placed closer to Schedule III. Finally, when it comes to the ability to successfully treat cannabis-use disorder (CUD) and cannabis’ overall impact on mental and physical health, ratings clearly demonstrate categorization as Schedule III. Note that 95 percent of survey responses, per question, place cannabis closer to Schedule III than Schedule II. “Ability to treat CUD” (bottom figure) refers to cannabis-use disorder, which is recognized by the American Psychiatric Association as a unique mental health condition.

Note that survey responders had the option of selecting “no opinion” for each of the sliding-scale survey questions listed in **Figure 1**. None of the survey responses indicated “no opinion.” Therefore, the scientists felt qualified to make the assessment of Schedule categorization.

Overall, the accumulated opinion of 39 researchers who have obtained \$78 million in federal grant funding for scientific research in cannabinoids believe that Schedule II categorization of cannabis is misaligned with its abuse potential and risk to public health.

One question was asked regarding whether a Schedule III classification would worsen or benefit public health, see **Figure 2** below.

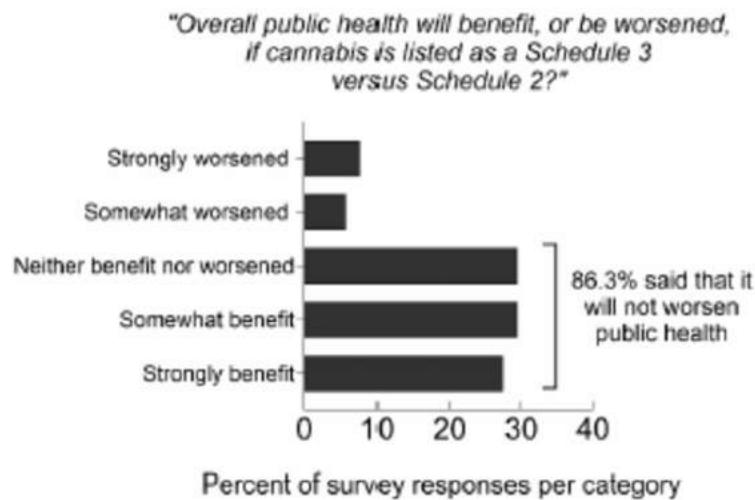


Figure 2. Percentage of survey scientists reporting their opinion on the public health risk associated with placing cannabis in Schedule III.

Overall, 86 percent of survey responders noted that rescheduling cannabis as Schedule III vs Schedule II would not worsen public health, and 51 percent noted that it would be a benefit to public health.

The researchers included in this report indicated that their work-related efforts in cannabis involved a broad range of different areas, which specifically included the harms associated with cannabis. In fact, more than 77 percent of survey responders indicated that their research involved investigation of cannabis-related harms stemming from acute intoxication, long-term use of cannabis, and its harms to public health and safety. Therefore, these researchers are well aware of the negative consequences related to cannabis use, yet they see it as appropriately classified as a Schedule III substance. Other specialties of cannabis science represented by the respondents include neuroscience, neuropsychology, public health, and clinical treatment of drug-use disorder, etc.

Note that none of the scientists who participated in the survey indicated a conflict of interest due to work in pharmaceutical development of cannabinoid drugs, or with financial interests in the cannabis retail industry. Two responders indicated that *"I'm reluctant to give my personal identifying information because I'm concerned that my participation may harm future support from federal agencies"* with only one of those two individuals included in the data sample, since they still listed their identity. Additionally, two researchers indicated their names and affiliations, but also said that could not include their identities in this public comment because their institutions *"did not permit it."*