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August 15, 2018

Via electronic submission to <https://oehha.ca.gov/comments>

Monet Vela
Office of Environmental Health Hazard Assessment
P.O. Box 4010
Sacramento, California 95812-4010

Re: Proposed Adoption of New Section Under Article 7: No Significant Risk Levels
Section 25704: Exposures to Listed Chemicals in Coffee Posing No Significant Risk

CERT'S SUBMISSION NO. 9

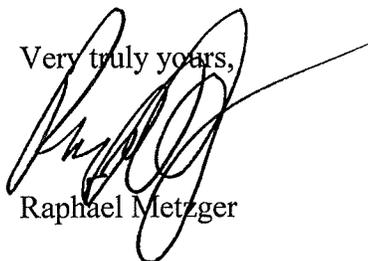
Dear Ms. Vela:

Enclosed herewith are the following documents that are being submitted on behalf of our client, the Council for Education and Research on Toxics (CERT) regarding the Opinions of Dr. Laura M. Juliano Regarding Adverse Physiological and Psychological Effects of Consumption of Coffee.

1. Exhibit A - Opinions of Laura M. Juliano, Ph.D.
2. Exhibit B - Testimony of Laura M. Juliano in *CERT v. Starbucks* trial, September 9, 2017 p.m.
3. Exhibit C - Curriculum Vitae of Laura M. Juliano, Ph.D.

Kindly include these materials of Dr. Laura M. Juliano in the record for this rulemaking proceeding.

Very truly yours,



Raphael Metzger

RM:ip
encls: as specified

EXHIBIT “A”

CERT vs Starbucks
List of opinions
Laura M. Juliano, Ph.D.

Problematic Caffeine Use

Caffeine use can result in a cluster of problematic symptoms that characterize a substance use disorder (Addicott, 2014; Bernstein et al., 2002; Budney et al., 2015; Jones & Lejuez, 2005; Juliano et al., 2012a; Meredith et al., 2013; Oberstar et al. 2002; Ogawa & Ukei, 2007; Strain et al. 1994, Striley et al., 2011; Svikis et al., 2005).

Problematic caffeine use is characterized by symptoms including but not limited to unsuccessful attempts to quit or cut down, withdrawal symptoms upon acute abstinence, and continued use despite physical or psychological harm (APA, 2013; Budney et al., 2015).

A wide range of daily doses of caffeine have been found to be associated with problematic caffeine use (Bernstein et al., 2002; Juliano et al., 2012a; Strain et al., 1994)

A population of individuals who are interested in or who are seeking professional treatment for problematic caffeine use have been identified (Evatt et al., 2016; Juliano et al., 2012a).

The DSM-5 includes caffeine use disorder as a condition for further study (APA, 2013)

The ICD-10 includes a diagnosis of caffeine dependence syndrome (WHO, 1992).

Caffeine Intoxication

Caffeine can cause a caffeine intoxication syndrome that consists of symptoms including restlessness, nervousness, excitement, insomnia, flushed face, diuresis, gastrointestinal disturbance, muscle twitching, rambling flow of thought and speech, tachycardia or cardiac arrhythmia, inexhaustibility, and psychomotor agitation (APA, 2013).

The DSM-5 includes a diagnosis of caffeine intoxication syndrome (APA, 2013)

The ICD-10 includes a diagnosis of acute caffeine intoxication (WHO, 1992)

Caffeine Withdrawal

Caffeine produces physical dependence in habitual consumers, which manifests as a characteristic withdrawal syndrome upon acute abstinence (Juliano & Griffiths, 2004)

Caffeine withdrawal is characterized by symptoms including but not limited to headache, fatigue or drowsiness, difficulty concentrating, dysphoric mood, depressed mood or irritability, flu-like symptoms, nausea, vomiting, muscle pain or stiffness (Juliano & Griffiths, 2004; Juliano et al., 2012b; APA, 2013)

Daily doses of caffeine as low as 100mg have been shown to produce physical dependence in humans (Evans et al, 1999; Griffiths et al., 1990)

Caffeine withdrawal syndrome can persist for 2 to 9 days (Griffiths et al. 1990; Juliano & Griffiths, 2004; van Dusseldorp and Katan 1990; Höfer and Bättig 1994)

Caffeine withdrawal syndrome is a clinically important phenomenon that can cause significant distress and impairment in completing one's normal daily activities (Juliano et al., 2012a; Strain et al., 1994)

Caffeine withdrawal headache has been described as diffuse, throbbing, severe, and sensitive to movement (Juliano & Griffiths, 2004)

Caffeine consumers who abstain from caffeine for medical procedures are at high risk of experiencing caffeine withdrawal including post-operative headache (Fennelly et al., 1991; Hampl et al., 1995; Weber et al., 1993)

The DSM-5 includes a diagnosis of caffeine withdrawal syndrome (APA, 2013)

The ICD-10 includes a diagnosis of caffeine withdrawal syndrome (WHO, 1992)

Anxiety

Caffeine increases anxiety in humans (Alsene et al., 2003; Boulenger et al., 1986; Charney et al., 1984; Orlikov & Ryzov, 1991; Shanahan & Hughes, 1986; Veleber & Templer, 1984)

Caffeine can trigger panic attacks, especially among individuals prone to anxiety (Klein et al., 1991; Masdrakis et al., 2008; Nardi et al., 2007; Nardi et al., 2009; Vilarim et al., 2011)

The DSM-5 includes a diagnosis of caffeine induced anxiety disorder (APA, 2013)

Sleep

Caffeine disrupts planned sleep (Clark & Landolt, 2017; Cousins et al., 2015; Roehrs & Roth, 2008)

Caffeine increases the latency to sleep, decreases total sleep time, and increases nighttime awakenings, and decreases the perceived quality of sleep (Březinová, 1974; Clark & Landolt, 2017; Cousins et al., 2015; Drapeau et al., 2006; Hindmarch et al., 2000; LaJambe et al., 2005; Shilo et al., 2002; Smith et al., 1994)

Coffee consumption and caffeine use is associated with higher risk of insomnia and sleep problems (Chaudhary et al., 2016; Cousins et al., 2015; Fabsitz et al., 1997; Shirlow & Mathers, 1985; Singareddy et al., 2012).

Caffeine abstinence increases sleep time and improves sleep quality (Juliano & Griffiths, 2004; Sin et al., 2008)

The DSM-5 includes a diagnosis of caffeine induced sleep disorder (APA, 2013)

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EXHIBIT “B”

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SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

DEPARTMENT 323

HON. ELIHU M. BERLE, JUDGE

CERT,)
)
PLAINTIFF,)
) CASE NO. BC 435759
VS.)
) BC 461182
STARBUCKS CORP, ET AL.,)
)
DEFENDANTS.)
_____)

REPORTER'S TRANSCRIPT OF PROCEEDINGS

TUESDAY, SEPTEMBER 19, 2017

P.M. SESSION

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1 M A S T E R I N D E X

2 September 19, 2017, P.M. Session

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1 CASE NUMBER: BC411192/BC435759
2 CASE NAME: CERT CASES
3 LOS ANGELES, CALIFORNIA TUESDAY, SEPTEMBER 19, 2017
4 DEPARTMENT 323 ELIHU M. BERLE, JUDGE
5 REPORTER: MARK SCHWEITZER, CSR 10514
6 TIME: 1:44 P.M.

7 -o0o-

8 THE COURT: All right. Back on the record in CERT
9 versus Starbucks.

10 Counsel?

11 MR. METZGER: Your Honor, one quick housekeeping
12 matter. My staff has brought the joint statements of
13 deposition testimony of PMKs to be lodged, and I think your
14 staff is looking for direction that they may stamp those
15 received.

16 THE COURT: Yes.

17 MR. METZGER: So that we can proceed with this
18 and --

19 THE COURT: Okay.

20 Mr. Schurz?

21 MR. SCHURZ: I think it's premature. We received
22 many of these on Sunday. We have provided them with some
23 objections, some errors in the joint statements. So they can
24 lodge them, but we're going to be -- they are going to have to
25 resubmit.

26 THE COURT: All right. Well, that will be
27 determined later, but if they want to lodge them, they can
28 lodge them. And if not appropriate, they will be withdrawn or

1 I'll return them, but in the meantime, let's clean up
2 everything and get them lodged.

3 MR. METZGER: Thank you, your Honor.

4 THE COURT: Okay. Please hand them to the clerk.

5 All right. Dr. Scrafford has resumed the stand.

6 And, Dr. Scrafford, do you understand you are still
7 under oath?

8 THE WITNESS: I do.

9
10 CAROLYN SCRAFFORD, PREVIOUSLY SWORN.

11
12 THE COURT: Mr. Schurz was inquiring on redirect
13 examination.

14 MR. SCHURZ: Thank you, your Honor.

15
16 REDIRECT EXAMINATION

17 BY MR. SCHURZ:

18 Q. If I could direct you to DX 73540, Slide No. 2.

19 And I would like to bring the following questions in
20 the context of the discussion you had with the Court and
21 Mr. Metzger relating to the food codes that you chose to
22 include in your exposure calculation.

23 With that orientation, can you remind us what value
24 you used for the amount of the average amount of coffee
25 consumed or the amount of coffee people drink each time they
26 drink coffee for purposes of your exposure assessment?

27 MR. METZGER: Objection. Cumulative, beyond the
28 scope.

1 THE COURT: Overruled.

2 THE WITNESS: So that was the 344 grams. And that's
3 equivalent to approximately 12 ounces.

4 Q. BY MR. SCHURZ: All right. There was some
5 discussion that with respect to that 12-ounce value that
6 you're including as the average amount of coffee that people
7 drink on the occasions when they drink coffee, that that would
8 be inconsistent with the amount of coffee that is present in
9 espresso-based drinks, whether an espresso, a cappuccino, or a
10 latte.

11 Do you recall that discussion?

12 A. I do.

13 Q. And the discussion was that there is something
14 less than that value, less than 12 ounces would be present in
15 a espresso, cappuccino, or caffe latte.

16 Do you recall that discussion?

17 A. Yes.

18 Q. So what impact, if any, does that have,
19 Dr. Scrafford, in terms of your ultimate calculations of the
20 average daily exposure to acrylamide?

21 A. So if we were to include those, it would
22 actually bring the level down.

23 Q. Instead of 12 ounces, you'd have something less
24 because in these espresso-based coffee drinks, presumably
25 cappuccino, unless it's enormous, does not have 12 ounces of
26 espresso, correct?

27 A. That's correct.

28 Q. Okay. And then at the same time, when you were

1 calculating the frequency with which people drink coffee,
2 those espresso-based drinks would be included, correct?

3 A. Yes, and any type of coffee would be included
4 there.

5 Q. Okay. So whatever the type of coffee, it would
6 be given a value of 12 ounces?

7 A. Correct.

8 Q. Thank you. All right. Now let's turn, then,
9 to the discussion you were having with respect to the NHANES
10 data set that you used for your consumption data referenced
11 here, DX 73540.

12 Now, Dr. Scrafford, is it your opinion that the
13 NHANES data that you have relied on in this case is
14 universally accepted within the exposure assessment community
15 for purposes of preparing exposure calculations?

16 MR. METZGER: Objection. Beyond the scope of cross,
17 and this is cumulative and calling for speculation.

18 THE COURT: Overruled. But let's not dwell on it
19 and repeat testimony that's been had, Mr. Schurz. Ask any
20 further questions in response to cross-examination. And
21 Dr. Scrafford may answer this question.

22 THE WITNESS: So the NHANES data is universally
23 accepted. It is designed exactly for that purpose. The data
24 it collects is designed for that purpose.

25 Q. BY MR. SCHURZ: Now, in your discussion with
26 Mr. Metzger, he raised the National Coffee Association's
27 Coffee Drinking Trends report.

28 Do you recall that discussion?

1 A. I do.

2 Q. Are you aware, Dr. Scrafford, of any federal
3 public agency ever using the NCA's coffee drinking trends for
4 purposes of preparing an exposure assessment?

5 A. No, not to my knowledge.

6 Q. Are you aware of any state agency, public
7 health agency or otherwise, ever using the NCA's national
8 coffee drinking trends as the basis of performing exposure
9 assessment?

10 A. Not to my knowledge.

11 Q. All right. Now, there was some further
12 discussion with Mr. Metzger in which there was discussion
13 between the difference between a survey that seeks to capture
14 those who consume coffee yesterday and their average
15 consumption versus the broader population of coffee consumers
16 who may drink coffee but drink it less frequently. Drank it
17 two days ago or a week ago or even a month ago.

18 Do you recall that discussion?

19 A. I do.

20 Q. And you indicated that we were not comparing
21 apples to apples.

22 Do you recall that?

23 A. I do.

24 Q. Could you expand upon that explanation with
25 respect to the different data sets that you were addressing?

26 A. Right. So the NHANES data where we see, for
27 example, where we're looking at the frequency of consumption,
28 that data set is designed to capture all coffee consumers, and

1 it's framed over the past year. So you're getting those
2 consumers who consumed it yesterday, the day of the survey,
3 the last week, the last month, the last year. And that is the
4 data set we use. The NCA trends, while it certainly looks at
5 trends, the way they collect that frequency data and the
6 estimate that was referenced in my cross-examination, the
7 three cups per day, that is based on just looking at consumers
8 who consumed the coffee yesterday.

9 So my data shows that you are missing almost
10 30 percent of the consumers, you are missing them when you
11 just ask that question.

12 MR. SCHURZ: Thank you, Dr. Scrafford. I have
13 nothing further.

14 THE COURT: All right. Thank you.

15 Mr. Metzger, any recross?

16 MR. METZGER: Yes.

17
18 RECCROSS-EXAMINATION

19 BY MR. METZGER:

20 Q. Dr. Scrafford, do you consider a person who
21 consumes one cup of coffee within the last year to be an
22 average coffee drinker?

23 A. No. So the average coffee consumer in my
24 assessment is somebody who drinks 0.68 cups per day, or that
25 would be the five cups per week.

26 Q. Do you consider a person who drank one cup of
27 coffee in the past year to be a consumer to be included in an
28 exposure assessment?

1 A. We included all people who responded consuming
2 coffee within the NHANES survey.

3 MR. METZGER: All right. Thank you.

4 THE COURT: Thank you. May Dr. Scrafford be
5 excused?

6 MR. SCHURZ: Yes, your Honor.

7 Thank you, Dr. Scrafford.

8 THE COURT: Dr. Scrafford, you may step down. Thank
9 you.

10 Next witness.

11 MR. SCHURZ: Your Honor, that concludes the
12 witnesses that defendants have for the ASRL portion of this
13 proceeding.

14 We do have some additional matters to take up with
15 the Court relating to the presentation of evidence for this,
16 but you've now heard our sixth and final witness as it relates
17 to the ASRL.

18 THE COURT: All right. Thank you.

19 Plaintiffs?

20 MR. METZGER: I need clarification, your Honor. I
21 understand that this is the last expert that the defense is
22 calling in support of their ASRL defense. I'd like
23 clarification as to whether this is their last witness that
24 they are calling for the ASRL defense and whether they are
25 resting their case on the ASRL defense or not so I can bring
26 my motion for judgment.

27 THE COURT: Mr. Schurz?

28 MR. SCHURZ: We have no more witnesses, your Honor.

1 We have filed with the Court a request for judicial notice
2 that identifies a range of documents that we would ask to be
3 considered and taken judicial notice of in the context of the
4 ASRL. There were some objections that were filed by
5 Mr. Metzger. We have responded and filed further responses to
6 that.

7 So your Honor has before you a set of briefs with
8 respect to the individual requests for judicial notice. In
9 the final analysis, we're really focusing on a group of six
10 documents that are disputed. We would note there are another
11 six that are undisputed. And we are prepared to submit those
12 on the papers, or we are prepared to have discussion with the
13 Court with respect to those at this time if it would be
14 helpful.

15 THE COURT: All right. Thank you.

16 Plaintiff.

17 MR. KENNEDY: Your Honor, Keurig at least is
18 resting, subject to resolution of the proceedings before
19 Judge Highberger next door. And I think that's true of the
20 other defendants as well.

21 MR. SCHURZ: It is, and I was getting there next.

22 THE COURT: Well, is anything happening in front of
23 Judge Highberger that anyone thinks would affect the
24 proceedings here?

25 MR. SCHURZ: Since we don't know the content of the
26 letter, we don't know.

27 MR. METZGER: Your Honor, this is their ASRL
28 defense. I don't see how they could be relying on an expert

1 that I have withdrawn for their ASRL defense.

2 THE COURT: All right. So as I hear, the defendants
3 have rested subject to the Court ruling on judicial notice
4 issues, and plaintiff wishes to make a motion for judgment?

5 MR. METZGER: Yes. I have the motion for judgment.
6 We can file it and serve it, but I do have an expert who has
7 flown out from the East Coast who I'd like to get started
8 with.

9 THE COURT: Well, you can file it, and we'll proceed
10 with the testimony subject to your motion.

11 MR. METZGER: Thank you, your Honor.

12 MR. SCHURZ: Your Honor, while we are on the subject
13 of the motion that is in the process of being filed, we have
14 not discussed a briefing schedule for that, and having not
15 seen the motion, I'm reluctant to commit to a date. But we
16 are prepared to have a discussion with respect to that.

17 THE COURT: Well, well, we'll do that at the end of
18 the day. Let's go forward with the testimony. Let's have an
19 opportunity to look at it for a few minutes, I guess. You're
20 going to serve the papers, right?

21 MR. METZGER: They are being -- have they been
22 served now? Let's get them served, please, and move it along.

23 THE COURT: All right. Look at it and weigh it and
24 decide how much per pound, how many hours per pound you need
25 for response. And we'll discuss it later at the end of the
26 day.

27 MR. SCHURZ: Thank you, your Honor. And the final
28 piece of business, I will introduce Mr. Alejandro Bras, who

1 will be handling the cross-examination of Dr. Juliano, and I
2 will give him my seat.

3 THE COURT: All right. Good afternoon, Mr. Bras.

4 All right. The defendant has rested, and the
5 plaintiff has filed their motion for judgment. It will be
6 deferred, and the plaintiff will now start presenting
7 witnesses subject to its motion.

8 MR. METZGER: Thank you, your Honor.

9 THE COURT: Counsel may proceed.

10 MR. METZGER: Yes, the plaintiff will call Dr. Laura
11 Juliano.

12 THE CLERK: Please raise your right hand.

13

14 LAURA JULIANO, SWORN.

15

16 THE CLERK: Can you please state and spell your name
17 for the record.

18 THE WITNESS: Laura Juliano, L-A-U-R-A,
19 J-U-L-I-A-N-O.

20 THE COURT: Good afternoon, Dr. Juliano.

21 THE WITNESS: Good afternoon.

22 THE COURT: Counsel may proceed.

23 MR. METZGER: Thank you, your Honor.

24

25 DIRECT EXAMINATION

26 BY MR. METZGER:

27 Q. Good afternoon, Dr. Juliano.

28 A. Good afternoon.

1 Q. Is this your first time testifying in court?

2 A. Yes, it is.

3 Q. Well, welcome. Let me first provide you,
4 Dr. Juliano, a copy of Trial Exhibit 60074 and ask you is this
5 your current Curriculum Vitae?

6 A. Yes, it is.

7 Q. And does it contain a summary of your education
8 and professional experience and publications?

9 A. Yes.

10 MR. METZGER: Thank you.

11 Your Honor, we would offer into evidence
12 Exhibit 60074.

13 THE COURT: Any objection?

14 MR. BRAS: No objection, your Honor.

15 THE COURT: Admitted.

16 (Joint Exhibit 60074 received.)

17 Q. BY MR. METZGER: Dr. Juliano, what do you
18 consider to be your field of expertise?

19 A. I'm an expert in drug addiction.

20 Q. How did you first become interested in drug
21 addiction?

22 A. In graduate school I studied specifically
23 tobacco dependence, and then throughout my career, I've
24 studied just about every drug of dependence, including
25 caffeine.

26 Q. Before you went to graduate school, earlier
27 than that, did you have any experience in the tobacco industry
28 or the coffee industry?

1 A. My first job, actually, as a teenager, when I
2 was 16, I worked selling tobacco for a wholesale tobacco
3 company. And also, interestingly enough, I worked at a coffee
4 house and sold coffee. So those were my jobs prior to
5 engaging in research.

6 Q. Okay. And how did you first become interested
7 in drug addiction as a field?

8 A. I was specifically interested in health, health
9 behaviors, and behavior change. Someone interested in
10 clinical psychology and the modification of behavior. I
11 worked in the mental health field for a number of years prior
12 to going to graduate school, and when I was looking for
13 graduate programs, I specifically was interested in studying
14 health behaviors, health-related behaviors, and began doing
15 research in the fields of HIV prevention, breast cancer
16 prevention, and tobacco dependence.

17 Q. Okay. When did you begin doing that type of
18 research?

19 A. 1990. 1989.

20 Q. And could you explain what type of research you
21 were doing at that time in a little more detail?

22 A. Well, as an undergraduate, I did research in
23 laboratories looking at the effects of cocaine use, and I
24 began working also with human populations, and then in
25 graduate school, I began studying various questions relating
26 to health behaviors and working and doing tobacco cessation
27 programs and clinical trials and so forth.

28 Q. You mentioned clinical trials. Tell us about

1 your experience in running -- well, first of all, what is a
2 clinical trial?

3 A. Okay. Well, it's a controlled trial to look at
4 the effect of, in my case, different treatments to treat drug
5 dependence. So testing the efficacy of various types of
6 treatments.

7 Q. And how do clinical trials differ from
8 observational epidemiology?

9 A. Well, a controlled clinical trial has no
10 treatment control groups, and a lot of effort is put into
11 controlling the study in a way to look at the direct effects
12 of treatment on the outcomes.

13 Q. What is your experience in running clinical
14 trials?

15 A. In terms of the trials that I've been involved
16 in?

17 Q. Yeah, over the years.

18 A. So a number of studies, first with tobacco
19 dependence, looking at the effects of different types of
20 treatments, either cognitive behavioral treatments in some
21 trials. In other trials, medication trials with placebo
22 controls. And then I've also done clinical outcome studies
23 relating to caffeine dependence as well.

24 Q. What type of studies regarding caffeine
25 dependence?

26 A. Randomized clinical trials where people are
27 randomly signed to receive treatment and so forth and looking
28 at the outcomes.

1 Q. Okay. Did you write a Master's thesis?

2 A. I did.

3 Q. And what was that about?

4 A. My Master's thesis was specifically looking at
5 the effects of a drug being available in the environment or
6 available to a person and how that knowledge influences their
7 craving and motivation to use the drug. And the drug I used
8 in that case was tobacco.

9 Q. And in doing your Master's thesis, that
10 research, did that end up as a publication in a peer-reviewed
11 journal?

12 A. Yes, it did.

13 Q. And can you look at your Curriculum Vitae and
14 tell us when that was?

15 A. That would have been in, I believe, 1998. Yes.
16 So reactivity to instructed smoking availability environmental
17 cues with evidence with urge and reaction time.

18 Q. After you completed your -- let's see, your
19 Bachelor's degree was in psychology, correct?

20 A. Yes.

21 Q. In 1990, from SUNY at Binghamton?

22 A. The State University of New York at Binghamton,
23 correct.

24 Q. And your Master's degree was in clinical
25 psychology at the same university?

26 A. Correct.

27 Q. And after you obtained your Master's degree,
28 did you do an internship?

1 A. Well, first I did my dissertation.

2 Q. Okay. And tell us what your dissertation was
3 about.

4 A. My dissertation was evaluating the role of
5 stress and stress reduction in motivating people to smoke.

6 Q. And regarding your dissertation, did that win
7 an award?

8 A. Yeah, it won a dissertation of the year award
9 from the American Psychological Association's division of
10 substance abuse and pharmacology.

11 Q. And did the research that you did for your
12 dissertation also end up in a peer-reviewed article in the
13 literature?

14 A. Yes, it did.

15 Q. And would you identify that for us, please.

16 A. That would be Juliano and Brandon, Effects of
17 Nicotine Dose, Instructional Set and Outcome Expectancies on
18 the Subjective Effects of Smoking in the Presence of a
19 Stressor. And that is the Journal of Abnormal Psychology.

20 Q. Okay. And then you did your internship; is
21 that correct?

22 A. Correct.

23 Q. And what type of internship was that?

24 A. My internship was at the Medical University of
25 South Carolina in Charleston, South Carolina, and I went there
26 specifically to do research on an in-patient drug substance
27 abuse ward. And I also did outpatient work and treatment
28 there as well.

1 Q. And from the research and work that you did for
2 your internship, post doctoral, did that end up as a
3 publication in the peer-reviewed literature?

4 A. I presented some of my work at conferences from
5 my time there.

6 Q. Okay. Are any of those listed on your
7 Curriculum Vitae?

8 A. They would be in the section on conference
9 presentations.

10 Q. Is that on Page 11, Juliano, Santa Ana, and
11 Roitzsch?

12 A. Yes.

13 Q. Could you tell the Court what the title is of
14 that?

15 A. Developing Treatment Strategies for Nicotine
16 Dependent Substance Abusers in Recovery.

17 Q. All right. Did you also do post-doctoral
18 research at Johns Hopkins?

19 A. Yes.

20 Q. Could you tell us what that was about?

21 A. I did two lines of research at Johns Hopkins
22 for my post doc. I did tobacco research, where I ran clinical
23 trials to test new treatments for tobacco dependence, and I
24 also did caffeine research while I was there, including a
25 randomized clinical trial of a treatment for caffeine
26 dependence that I developed.

27 Q. Okay. So what types of substances have you
28 studied for addictive or dependent effects?

1 A. Caffeine and nicotine primarily. I've done
2 treatment for individuals with various substance dependence
3 problems, but my research is focused on tobacco and caffeine.

4 Q. Okay. And why those two?

5 A. Well, they have a lot of similarities. They
6 are both legal, widely available drugs, integrated into our
7 society and our culture, and they are used by much larger
8 numbers of individuals than other -- many other drugs of
9 dependence.

10 Q. Do those two drugs have any effects in common?

11 A. They are both stimulant drugs, yes. And they
12 both would affect brain areas that would influence reward and
13 motivation to use those drugs again.

14 Q. What is your -- are you currently in academia?

15 A. Yes.

16 Q. And what is your current position?

17 A. I'm a professor in the psychology department at
18 American University.

19 Q. And are you a full professor?

20 A. Yes, I'm a full professor.

21 Q. And at American University, what does that mean
22 to be a full professor?

23 A. Well, if you're asking what the requirements to
24 get that type of promotion are, it would be for your research
25 to be internationally recognized, for it to have a high
26 impact, and to have received a large amount of grant funding.

27 Q. Okay. And could you tell his Honor generally
28 what you do in your current research?

1 A. My current research is a laboratory-based
2 research. So I design studies concerning tobacco and caffeine
3 where we can isolate the effects of the drug and control
4 experimental designs. So I'm particularly interested in the
5 behavioral pharmacology of drugs, meaning exactly what they do
6 to one's -- the effects that they have on individuals.

7 Q. Okay.

8 THE COURT: Mr. Metzger, what is the relevance of
9 Dr. Juliano's testimony to this case?

10 MR. METZGER: Oh, well, let me ask.

11 Q. Dr. Juliano, what is the major source of
12 caffeine in the adult population?

13 A. The major source of caffeine is coffee.

14 Q. Okay. And is caffeine a drug?

15 A. Yes.

16 Q. Okay.

17 THE COURT: You still haven't answered the question.

18 MR. METZGER: The relevance? Okay. So the
19 relevance is Dr. Juliano will be testifying about medical
20 adverse effects of coffee which, at least in the plaintiff's
21 view, need to be considered as part of the calculus as to
22 whether sound considerations of public health support a high
23 level of acrylamide in coffee, namely, that one has to take
24 into account not just the supposed benefits of coffee
25 consumption, but also the documented well-known and
26 established adverse effects of coffee consumption.

27 THE COURT: All right. So it's not directly related
28 to the issue of acrylamide and whether acrylamide presents a

1 risk of cancer. But what I hear you saying is that the
2 evidence is supposed to counter defendants' evidence that
3 there's supposed to be some health benefit in drinking coffee.

4 MR. METZGER: There is that, and it goes directly to
5 their defense, their ASRL defense exactly.

6 THE COURT: Okay.

7 Counsel?

8 MR. BRAS: Just a point of clarification, your
9 Honor. Dr. Juliano has no testimony about coffee. She's
10 testifying only about caffeine.

11 THE COURT: All right.

12 Mr. Metzger, you may proceed.

13 MR. METZGER: All right. Thank you, your Honor.

14 Q. Dr. Juliano, do you also teach?

15 A. Yes, I do.

16 Q. Can you tell us a little about your teaching
17 activities?

18 A. I teach a wide variety of courses. I teach
19 drugs and behavior. I teach psychology of addictive
20 behaviors. Instruction to psychology, abnormal psychology,
21 various courses related to psychology.

22 Q. Are you a journal reviewer?

23 A. Yes.

24 Q. And tell us about that, please.

25 A. I review articles, peer-review articles for
26 peer-reviewed journals when they are seeking expert opinion on
27 whether those articles should be published or not.

28 Q. And have you served as an associate editor of

1 any journals?

2 A. Yes, I'm associate editor of the Journal of
3 Caffeine Research.

4 Q. Okay. And the journals for which you have
5 reviewed articles and have been an associate editor, are those
6 all peer-reviewed journals?

7 A. Yes.

8 Q. Are they highly regarded journals?

9 A. Yes.

10 Q. How do you determine whether -- how do you
11 conclude that these journals are highly regarded journals?

12 A. There are various metrics, but in general, they
13 have high rejection rates and high submission rates, and they
14 make a large impact on the field in that the articles in them
15 are well cited and stimulate further research in a field.

16 Q. Does that relate to impact factor?

17 A. Yes.

18 Q. And what is an impact factor?

19 A. The impact factor is a calculation of how many
20 times an article is cited, a measure of its importance.

21 Q. Okay. And have you provided professional
22 services?

23 MR. BRAS: Objection. Vague.

24 THE WITNESS: Can you clarify the question?

25 Q. BY MR. METZGER: Well, are you a member of
26 professional associations?

27 A. Yes, I'm a member of the Society of Research on
28 Nicotine and Tobacco and the American Psychological

1 Association Division 28.

2 Q. All right. Dr. Juliano, would you tell the
3 Court what you did to pursue your interest in caffeine?

4 A. I sought out a post-doctoral fellowship at
5 Johns Hopkins University to work with Dr. Roman Griffiths, one
6 of the leaders in the field who did most of the basic control
7 laboratory research looking at caffeine and its parameters and
8 its effects on individuals.

9 Q. And did you expand that into the clinical
10 realm?

11 A. Yes. Dr. Griffiths is not a clinical
12 psychologist. So he was also interested in having me work
13 with him so that I could develop treatment program to assist
14 individuals with problematic caffeine use.

15 Q. Can you think of an example as to a treatment
16 program that you developed to treat people with problematic
17 caffeine use?

18 A. Yes, I was also at the same time developing
19 programs for tobacco dependence. I had done that for many
20 years prior to my post doc. I've done a lot of treatment on
21 tobacco dependence. So I utilized the effective treatment
22 strategies for tobacco dependence and modified it for
23 caffeine.

24 Q. And what kind of problems did you address in
25 this research?

26 A. Can you be more specific?

27 Q. I could try. What kinds of problems that
28 patients were having did you address in this research?

1 A. Oh, I see. Yes, we had people contacting us
2 who self-identified as having problematic caffeine use. We
3 also did thorough assessments and clinical interviews to
4 identify those with the most serious issues. They came in
5 with a variety of complaints, but most were interested in
6 giving up caffeine for a health-related issue and had been
7 advised by a physician to give up caffeine but were unable to
8 do so repeatedly when they tried on their own.

9 Q. Okay. And did these patients who self-reported
10 to you with problematic caffeine use, did that include people
11 who were coffee drinkers?

12 A. Yes. 50 percent of the individuals we treated,
13 they were primarily coffee drinkers. A larger percentage
14 drank coffee, but 50 percent drank only coffee.

15 Q. For their source of caffeine?

16 A. Yes.

17 THE COURT: Are these individuals who voluntarily
18 came in to see you, or were they -- all voluntary, I assume.
19 But were they self-initiated visits, or were they referred
20 from other physicians or scientists?

21 THE WITNESS: The way they were recruited was
22 through a notification that a treatment was available, and
23 people called to find out about the treatment. We purposely
24 kept any sort of incentives or payment low so as to only
25 attract people who were interested in receiving treatment.

26 THE COURT: Was this a notice to the general
27 population, or were they university students?

28 THE WITNESS: No, the general population.

1 THE COURT: All right. Thank you.

2 THE WITNESS: There were no students in the study.

3 Q. BY MR. METZGER: All right. So what kinds of
4 problems regarding caffeine use did you address in these
5 studies?

6 A. Well, the goal is when individuals stop using
7 caffeine, then the associated problems would cease. So some
8 were coming in because of anxiety issues. Some were coming in
9 because of sleep issues. Some were coming in because of
10 health-related issues and physicians' advice.

11 But we encountered difficulties in assisting people
12 in that they are physically dependent on the drug and they had
13 difficulty giving it up. So we used a fading program to try
14 to help with that issue of dependence.

15 Q. Can you give us an example of a patient who you
16 assisted with a caffeine-use problem?

17 A. Sure. They were very diverse in terms of the
18 patients, but we had individuals who came in because they were
19 advised -- for example, one woman was advised by her physician
20 to give up coffee for heart-related issues, and she was having
21 difficulty. She was arguing with her spouse over it. So we
22 attempted to help her get off coffee so that she could stop
23 having these interpersonal problems as well as to follow the
24 advice of the physician. Unfortunately, she was one of the
25 people who did not quit.

26 Q. Okay. Did you design studies to determine how
27 best to treat people with caffeine dependence?

28 A. Yes.

1 Q. And tell us about that, please.

2 A. So the study we tested was a study where
3 individuals tapered their caffeine use over a period of weeks
4 because one of the biggest issues in stopping caffeine is
5 withdrawal. So we tried to minimize the distress and sort of
6 suffering for many that comes from withdrawal. So we had them
7 in a structured fading program.

8 But that alone we expected wouldn't work because
9 prior studies, case reports had tried that. So we also
10 incorporated it with a treatment-based manual that had a lot
11 of strategies that have been known to help other people stop
12 using drugs, including cognitive behavioral coping skills and
13 information about caffeine, information about withdrawal, and
14 ways to reward yourself and so forth for quitting, reducing.

15 Q. All right. And what type of studies were these
16 that you designed?

17 MR. BRAS: Objection, your Honor. The scope of this
18 testimony has gone beyond what was discussed in deposition.
19 There was no discussion of the development of the treatment
20 program, treating individuals, et cetera.

21 THE COURT: Overruled.

22 Q. BY MR. METZGER: You can go ahead and answer
23 when the judge overrules the objection.

24 A. Yes, I just don't remember the question.

25 Q. I'm sorry. What were the types of studies that
26 you designed and conducted to assist these patients?

27 A. In this case we did a wait list control design
28 because we wanted a control. We wanted to know that

1 individuals didn't just stop using caffeine because we had
2 called them, you know, that we had allowed them to be
3 interviewed. They came in. So we treated half of the
4 patients immediately and half of the patients six weeks later.
5 And we found that those who were treated six weeks later did
6 not spontaneously stop using caffeine. And then they were
7 given the treatment as well.

8 Q. Is this a randomized control --

9 A. Yes, with a wait list control condition as
10 opposed to a no control condition. We didn't want to do that.
11 We didn't want to have half of our participants not receive
12 any treatment.

13 Q. Understood. All right. And did that study
14 that you are referring to, that randomized control trial,
15 result in a publication?

16 A. Yes, it did.

17 Q. And could you identify that on your Curriculum
18 Vitae?

19 A. It resulted in two publications. The first
20 would be Evadt, Juliano, and Griffiths, 2016, a Brief
21 Manualized Intervention for Problematic Caffeine Use, a
22 Randomized Control Trial in the Journal of Consulting and
23 Clinical Psychology.

24 Q. And the other publication?

25 A. Juliano, Evadt, Richards, and Griffiths,
26 Characterization of Individuals Seeking Treatment for Caffeine
27 Dependence in Psychology of Addictive Behaviors.

28 Q. Is there a study that you currently or recently

1 submitted?

2 A. I have a number of studies that I completed
3 recently and some under review regarding caffeine and its
4 effects on individuals.

5 Q. Could you tell us about those.

6 A. Sure. I just completed a study where we give
7 people either caffeine or a placebo, and it's called an ABA
8 design. So they received placebo for a week, caffeine for
9 three weeks, and then placebo for another week. And this way
10 we can causally test the effects of caffeine on the outcomes.

11 We were particularly interested in sleep and
12 negative subjective effects. Subjective effects in general.
13 So that's one study recently completed that we're writing now
14 for publication.

15 I have another study under review at a journal right
16 now where we were looking at caffeine withdrawal. Some had
17 suggested caffeine withdrawal perhaps is an expectancy effect,
18 meaning it's caused by one's beliefs that it may happen. So
19 we -- in that study, I tested whether somebody's expectations
20 or their beliefs influenced withdrawal symptomatology and
21 found that expectation made no difference. By the second day,
22 if someone didn't receive caffeine, they reported headache and
23 other withdrawal symptoms.

24 Q. All right. Among your research, did you
25 conduct a comprehensive review of all published studies
26 regarding caffeine withdrawal?

27 A. Yes.

28 Q. Could you tell us what that involved?

1 A. Yes. So I did that in collaboration with Roman
2 Griffiths at Johns Hopkins University, and we evaluated all
3 research that had tested or potentially could answer questions
4 about caffeine withdrawal in order to validate the phenomenon
5 in that what exactly is it when someone abstains from
6 caffeine. What happens to them.

7 Q. Right. About approximately how many studies in
8 the literature did you review critically in preparing that
9 work?

10 A. Most studies in that review were double-blind
11 placebo control studies. I believe there were about 47. We
12 also included single-blind studies, 9 of those, I believe.
13 And then a few survey studies. So I would say -- I don't
14 remember the exact number. About 60 studies or so.

15 Q. And these were all controlled studies?

16 A. Most of them were controlled studies. But
17 actually, those controlled studies may actually underestimate
18 the phenomenon in the real world. So this was a very
19 conservative evaluation of caffeine withdrawal. We wanted to
20 know what the pharmacological effects of abstinence from
21 caffeine were to empirically evaluate a potential diagnosis,
22 but it could be different when people actually know they are
23 not getting their coffee. Research shows they may actually
24 develop symptoms sooner and more intensely.

25 Q. And could you identify that comprehensive
26 review of caffeine withdrawal on your Curriculum Vitae?

27 A. Page 4, Juliano and Griffiths, 2004, A Critical
28 Review of Caffeine Withdrawal, Empirical Validation of

1 Symptoms and Signs, Incidents, Severity, and Associated
2 Features. And that was in Psychopharmacology.

3 Q. And what was your conclusion regarding caffeine
4 withdrawal regarding -- based upon that critical review that
5 you prepared?

6 A. We were very careful to look at the
7 methodologies in those studies. Other drug withdrawal
8 syndromes have not done this sort of analysis. But anytime
9 you're comparing a drug to placebo, you have to be able to
10 know whether the effect you're looking at is a drug effect or
11 a withdrawal effect.

12 So we were careful to look at methodologies that
13 would isolate it as a withdrawal effect and not simply that
14 people do better on the drug and then worse off the drug and
15 worse, but that actually is a dysfunction or is a decrement in
16 performance.

17 So we concluded that the evidence was overwhelming
18 for a withdrawal syndrome, and at the end of the review, we
19 made recommendations for what that syndrome would look like if
20 it was based on science and empirically validated.

21 Q. Have any of your papers in your view made a
22 major impact in your field?

23 A. Well, if you look at the citation rates, a
24 number of my papers have been well cited. This paper, the
25 withdrawal review, is the most cited paper of mine. It has
26 hundreds of citations. But I believe this paper had the
27 largest impact because the empirical analysis that we did
28 resulted in the actual diagnosis in the DSM-5 that is

1 currently accepted and used in this version, yes.

2 Q. Is that this book?

3 A. Yes.

4 Q. All right. And its title is Diagnostic and
5 Statistical Manual of Mental Disorders, 5th Edition, correct?

6 A. Correct.

7 Q. Is that the current edition?

8 A. The current edition.

9 Q. And this is published by the American
10 Psychiatric Association?

11 A. Correct.

12 Q. Are there any mental health diagnoses in the
13 DSM for caffeine-related problems?

14 A. Yes.

15 Q. Could you tell us about those? What are they?

16 A. The official diagnoses are caffeine
17 intoxication, caffeine withdrawal. Then there's
18 substance-induced anxiety disorder due to caffeine, substance
19 induced sleep disorder due to caffeine. And then, as I --
20 research, working diagnosis, there's caffeine use disorder.

21 Q. What was your role in those diagnoses and their
22 diagnostic criteria for them in the DSM-5?

23 A. I was an official advisor to the DSM-5
24 substance use disorders work group. I was asked to advise on
25 matters related to caffeine; so I was involved in the writing
26 and the scientific review of all the caffeine-related
27 diagnoses in the DSM.

28 Q. And what was your role in the writing of that?

1 A. I was a primary lead author on some of the
2 diagnoses, and others I collaborated on the writing. Usually
3 the ones that we're rewriting from DSM-4-TR.

4 Q. Okay. So for which of the caffeine-related
5 disorders were you the primary for?

6 A. Caffeine withdrawal and caffeine use disorder.

7 Q. Has your research been funded by the National
8 Institutes of Health?

9 A. Yes.

10 Q. And are you the recipient of an R01 grant?

11 A. Yes.

12 Q. And will you explain to the Court what that is.

13 A. It's a grant given that supports original
14 laboratory -- well, in my case, original laboratory research.
15 And this was in the area of tobacco dependence.

16 Q. Okay.

17 A. But they are highly competitive grants. They
18 are very difficult to get.

19 Q. Okay. Dr. Juliano, have you also received a
20 humanitarian award?

21 A. Yes, I received a humanitarian award during my
22 clinical internship.

23 Q. Tell us about that, please.

24 A. That was an award given to an intern who was
25 believed to be a good colleague, collegial, helpful.

26 Q. Okay.

27 A. It wasn't a science award.

28 Q. All right. So, Dr. Juliano, when was it that I

1 contacted you regarding this case?

2 A. Summer of 2013, I believe.

3 Q. That's already four years ago. More than four
4 years ago.

5 A. Yes.

6 Q. Do you happen to recall what I asked you to do?

7 A. I do.

8 Q. What was that?

9 A. So you called me and asked if I would be
10 willing to discuss my expertise and my research on caffeine.

11 Q. And what was your response?

12 A. Well, I was interested because I was attracted
13 to that idea of discussing my research and talking about
14 caffeine. I enjoy educating the public and speaking with the
15 media about caffeine. So I found the invitation appealing.

16 Q. And were you surprised that I was not asking
17 you to testify on behalf of someone who had a caffeine-related
18 problem?

19 A. Yeah. That's actually the only reason I said
20 yes, because I have been asked before to testify in cases, and
21 I've always said no.

22 Q. All right. Would you tell the Court the
23 different topics --

24 Well, at this point, your Honor, I would offer
25 Dr. Juliano as an expert in drug addiction and caffeine and
26 the effects of caffeine and coffee.

27 THE COURT: Any objection?

28 MR. BRAS: No objections other than the coffee

1 piece. She's an expert on caffeine.

2 THE COURT: All right. Thank you. The Court
3 accepts Dr. Juliano as an expert. Counsel may proceed.

4 MR. METZGER: Thank you, your Honor.

5 Q. Dr. Juliano, did I ask you what topics
6 regarding coffee and caffeine you would like to address in
7 this case?

8 A. I just picked the topics that I felt I was an
9 expert in and wanted to discuss, yes.

10 Q. And did I agree with what you chose?

11 A. Absolutely. I sent you my list of opinions,
12 and you said they looked great, and that was it. I was
13 happily surprised by the process.

14 Q. Okay. Would you just identify those five
15 topics for Judge Berle, please.

16 A. Problematic caffeine use, caffeine
17 intoxication, caffeine withdrawal, anxiety, and sleep.

18 Q. Okay. I'd like to start, with your permission,
19 on caffeine withdrawal. First, could you give us a definition
20 of what caffeine withdrawal is?

21 A. Caffeine withdrawal is psychological behavioral
22 and cognitive disruptions that occur as a direct result of
23 abstinence from caffeine among habitual users.

24 Q. And does caffeine produce a physical dependence
25 in habitual users?

26 A. Yes. So by definition, physical dependence is
27 the observation that someone experiences these disruptions
28 upon acute abstinence from caffeine.

1 Q. And is there a particular syndrome that these
2 people who are habitual caffeine users -- well, let me ask you
3 about that.

4 Habitual caffeine user. Does that include people
5 who drink coffee daily?

6 A. Yes.

7 Q. Okay.

8 A. And the withdrawal syndrome is dose dependent.
9 So the more someone uses, the more likely they will have
10 withdrawal, and the more severely they will have withdrawal.
11 And the largest users of caffeine are coffee drinkers. So
12 when we're studying withdrawal, we are studying coffee
13 drinkers primarily.

14 Q. All right. And could you describe for us the
15 symptoms, if that's the right term, of the physical dependence
16 that people who are habitual coffee drinkers experience?

17 A. The primary characteristic symptom of caffeine
18 withdrawal is a headache. The headache has been described as
19 throbbing, diffuse, sensitive to movement. And often we hear
20 it's the worst headache anybody as ever experienced. So that
21 was the primary symptom.

22 Also, very commonly we see fatigue, sleepiness,
23 difficulty concentrating, mood disturbances. So people report
24 irritability, depression. And we also see in some cases
25 flu-like symptoms. So people will report muscle stiffness,
26 nausea, and in some cases even vomiting. And sometimes people
27 think they have the flu when they are experiencing caffeine
28 withdrawal.

1 Q. All right. And these various symptoms which
2 you've just described, are those all symptoms that you have
3 reported on in your publications, including your 2004 review?

4 A. Yeah. The 2004 review, we were very
5 conservative. So we only identified for the diagnosis
6 symptoms that were reliably seen over and over and over in
7 many studies, that they were valid and that the right
8 methodologies were used to identify them.

9 But other symptoms were noted as well. But those
10 were the ones we felt were truly likely to occur over and over
11 when individuals give up caffeine.

12 Q. And what were those?

13 A. The ones that I listed: Headache, fatigue,
14 difficulty concentrating, mood disturbances, and flu-like
15 symptoms. And that comprises the diagnosis for caffeine
16 withdrawal.

17 Q. When you say that comprises the diagnosis --

18 A. Along with functional impairment. So you can't
19 just have those. There has to be also some sort of
20 dysfunction or impairment in one's normal daily functioning.

21 Q. Okay. Says who?

22 A. All diagnoses in the DSM require dysfunction.
23 Otherwise, it would be very easy to meet a lot of the mental
24 health diagnoses. And I think people forget that sometimes.
25 They say oh, you know, I can't believe you would diagnose
26 this, let say, because of the symptoms. And it's never just
27 the symptoms. It's the symptoms along with some sort of
28 impairment in daily normal functioning.

1 Q. So DSM says that with respect to caffeine,
2 what's the terminology that they give for caffeine withdrawal
3 in DSM?

4 A. Caffeine withdrawal.

5 Q. Okay.

6 A. Syndrome.

7 Q. All right. And the diagnostic criteria that
8 you just mentioned are in the DSM?

9 A. Yes. In order to meet the diagnosis, one has
10 to show symptoms in at least three of those categories.
11 Again, it is the most conservative diagnosis for drug
12 withdrawal in the DSM. Sometimes you just have to meet 2 of
13 11 symptoms, let's say. And also there has to be dysfunction.

14 Q. And that categorization of the minimum of these
15 three plus dysfunction, is that what you have proposed?

16 A. Yes.

17 Q. Okay. And you've indicated that that's more
18 criteria than for any other drug withdrawal symptom?

19 A. Yes, it's the most conservative. And we do
20 that on purpose because caffeine is used by 85 to 90 percent
21 of the population. And we want to make sure we restrict any
22 sort of mental health diagnosis to the most severe cases
23 because of the large numbers of people who are exposed to
24 caffeine. We don't want to trivialize the diagnosis. I guess
25 that's one way to put it.

26 Q. All right. Now, you've mentioned doses. Let
27 me ask you about that in your research. Have you ascertained
28 the range of doses of caffeine that people experience or

1 consume that can result in withdrawal?

2 A. Yes. That parametric research has been done.
3 Very well controlled. So we know that there is a
4 dose-response relationship. So as the dose goes up, the
5 probability of withdrawal goes up, and the severity of
6 withdrawal goes up. But we also know that a daily dose of
7 about 100 milligrams per day is sufficient to cause withdrawal
8 upon abstinence from that dose.

9 Q. And how many cups of coffee is a hundred
10 milligrams of caffeine per day?

11 A. The amount of caffeine in coffee is quite
12 variable. But that would be less than one standard cup of
13 coffee.

14 Q. Okay. All right. And can you inform the Court
15 of some articles either by you or by others that have reported
16 that low dose of caffeine as being sufficient to trigger
17 withdrawal syndrome upon abstinence.

18 A. Yeah. The Evans, et al., 1999, and Griffiths,
19 et al., 1990, papers have shown that a hundred milligrams of
20 caffeine is sufficient.

21 The study we just completed showed that three weeks
22 of 200 milligrams daily was sufficient to cause withdrawal in
23 the fourth week, and that was among individuals who don't
24 normally use caffeine.

25 Q. And which study is that?

26 A. That's a study that we are currently writing
27 for publication.

28 Q. All right. And have studies shown or reported

1 how long withdrawal symptoms for caffeine withdrawal, how long
2 they last?

3 A. Yes. That information is well established. So
4 caffeine withdrawal generally begins within 12 to 24 hours of
5 the last dose of caffeine. It usually peaks in the second or
6 third day, and it lasts for up to nine days.

7 Q. And could you inform the Court of some studies
8 that actually show that? Any of yours?

9 A. Yeah, the studies listed here on my list of
10 opinions. Griffiths, et al., the review, Juliano and
11 Griffiths, we summarize that data. Van Dusseldorf and Katen
12 and Hofer and Battig.

13 Q. Okay. Dr. Juliano, is caffeine withdrawal
14 syndrome in your opinion a clinically important phenomenon?

15 A. Yes.

16 Q. How so?

17 A. When we were doing the review, we were
18 particularly interested in would there be distress or
19 dysfunction, not just a change on a scale, let's say, but did
20 it actually interfere with someone's life. And we identified
21 that about 13 percent of the time, the symptoms were severe
22 enough to cause some sort of dysfunction in someone's day.
23 So -- and we've also received provo reports of the sort of
24 activities and sort of ways in which caffeine withdrawal has
25 disrupted peoples' lives.

26 Q. Can you give us some examples of those reports?

27 A. I have many, many examples. And some of the
28 examples I can give you are actually published reports.

1 So people unable to care for children, canceling a
2 son's birthday party, leaving a camping trip with the whole
3 family after the first day, not being able to attend religious
4 services, not being able to work. Many people just describing
5 being home with the covers over their head, feeling as though
6 they had the flu.

7 Q. Okay. All right. Okay. Let's see, you
8 mentioned, I think, either the strongest or most common
9 symptom, I don't recall exactly, as being headache.

10 A. It's a hallmark feature. So there is a
11 caffeine withdrawal headache that has a specific sort of feel,
12 let's say, to it. But fatigue is also a very common symptom.
13 And sleepiness.

14 Q. And can you describe that headache?

15 A. Yes. It's a diffuse, throbbing, all over the
16 head, sensitive to movement. People don't like to move their
17 head because of the cerebral dilation that's going on. The
18 vascular system is dilated. And, like I said, some people
19 describe it as the worst headache they have ever experienced.
20 And there are case reports of people going to the emergency
21 room thinking that they had a brain aneurism.

22 Q. And have you published about the caffeine
23 withdrawal headache?

24 A. In terms of the clinical -- the reports, yes.

25 Q. Are there any types of caffeine consumers who
26 most abstain in certain circumstances from caffeine and
27 experience withdrawal?

28 MR. BRAS: Objection. Vague.

1 THE COURT: Well, it is somewhat ambiguous. I don't
2 know what you mean by most.

3 MR. METZGER: I'll try to rephrase it.

4 Q. Are there circumstances that arise for various
5 reasons for various people where they have to stop drinking
6 coffee or otherwise ingesting caffeine?

7 A. Yeah, there are a number of different reasons.

8 Q. Could you tell the Court some of those.

9 A. So some people choose to give up caffeine for
10 religious observances. You see a lot of cases of withdrawal
11 around Lent and other religious holidays. Pregnancy. Women
12 will attempt to not use caffeine. And also medical tests and
13 procedures, surgeries.

14 So there's actually something called post-operative
15 headache that, when tested, turned out to be primarily
16 caffeine withdrawal headache. And often we hear people
17 canceling medical tests because they had not been able to
18 abstain for the amount of time required prior to the test.

19 Q. Okay.

20 A. Now, not everybody knows they are dependent on
21 caffeine, and that's a problem because sometimes people don't
22 know why they are sick.

23 Q. All right. Now, regarding this caffeine
24 withdrawal diagnosis or syndrome, we've talked about that
25 being within DSM-5, correct?

26 A. Correct.

27 Q. Is it in any other generally accepted
28 publications regarding medical diagnoses?

1 A. Yes. Caffeine withdrawal is a diagnosis in the
2 International Classification of Diseases, Version 10,
3 published by the World Health Organization.

4 Q. Okay. And what is that, and what's it used
5 for?

6 A. It's used for the same purposes of DSM, and
7 that is to have a common language to describe disorders and
8 diseases. It's used for treatment, research, and in some
9 cases billing.

10 Q. Billing, for insurance purposes?

11 A. Yes.

12 Q. So in your opinion, is caffeine withdrawal
13 symptom a recognized and well-accepted medical diagnosis in
14 the medical community?

15 A. Yes.

16 Q. Okay. I realize this has been a large area of
17 your research. Have we covered this, or is there something
18 else that you feel you consider important that you would like
19 to share with us?

20 MR. BRAS: Objection. Overbroad, relevance.

21 THE COURT: First of all, is there any questions
22 you'd like to be asked? Or any questions you would like to
23 ask Mr. Metzger?

24 Q. BY MR. METZGER: Well, Ms. Juliano, what have I
25 forgotten to ask you?

26 THE COURT: All right. I take it you have completed
27 your examination.

28 MR. METZGER: All right.

1 THE COURT: Like Jeopardy. Just give the answer,
2 and we'll figure out a question.

3 MR. METZGER: I think his Honor is telling me
4 that -- I think we'll move on from caffeine withdrawal right
5 now.

6 Q. Why don't we talk about another
7 caffeine-related disorder that you have mentioned, which is
8 caffeine intoxication. Okay? What is that?

9 A. Caffeine intoxication is symptoms that result
10 from consuming too much caffeine. So they include symptoms
11 like restlessness, nervousness, anxiety, GI disturbances.
12 It's a very uncomfortable feeling for individuals.

13 Q. Is there a long list of symptoms of caffeine
14 intoxication?

15 A. Yes. There are a number of symptoms, and in
16 order to meet the diagnosis, one has to be experiencing at
17 least five of those symptoms.

18 Q. Okay. And when you say to meet that diagnosis,
19 what diagnosis are you referring to by what organization?

20 A. Caffeine intoxication is included both in the
21 DSM-5 and in the ICD-10.

22 Q. Incidentally, you've mentioned the ICD, and the
23 10th is the 10th version of that?

24 A. Yes.

25 Q. When was that published?

26 A. 1992.

27 Q. Okay. So whatever you're referring to
28 caffeine-related diagnosis being in the ICD, you're

1 indicating, am I correct, that those diagnoses have been
2 accepted and included in the International Classification of
3 Diseases for at least 25 years; is that right?

4 A. Yes.

5 Q. All right. So do people who -- do coffee
6 drinkers sometimes experience caffeine intoxication?

7 A. Yes.

8 Q. What is your assessment of caffeine
9 intoxication as a disorder?

10 MR. BRAS: Objection. Vague.

11 THE COURT: Please rephrase the question.

12 Q. BY MR. METZGER: In your view, what is the
13 public health impact of caffeine intoxication?

14 A. I think it's an important public health issue.
15 We hear a number of reports of caffeine overdose, caffeine
16 intoxication. And we see a tremendous amount of variability
17 in individuals' response to caffeine. So that's where people
18 need to be educated about the caffeine's stimulant properties
19 as a drug.

20 THE COURT: What effect in your opinion does
21 caffeine have in the workplace?

22 MR. METZGER: Caffeine intoxication or caffeine?

23 THE COURT: Both.

24 MR. METZGER: Okay.

25 THE WITNESS: Well, caffeine in terms of -- you
26 know, my research is on withdrawal. So, of course, I've been
27 interested in the effects of caffeine withdrawal and work
28 productivity. But people also use caffeine to perform, but

1 research has shown that when people who commonly use caffeine
2 to perform, to enhance the cognitive performance or to
3 alleviate sleepiness, that actually they are just restoring
4 the decrements caused by the dependence on caffeine. It's not
5 a net benefit. So it's sort of a vicious cycle.

6 We believe we're using caffeine to enhance our
7 performance at work. You know, we go to get that cup of
8 coffee so we can get through the day. But it only sort of
9 helps for people who have become dependent and who are then
10 just trying to get themselves back to normal.

11 People who don't consume caffeine are no less
12 productive than individuals who consume caffeine. In fact,
13 one could argue there are probably more because they are not
14 going through these phases of withdrawal and use.

15 THE COURT: Well, that's what I was getting at in
16 terms of caffeine withdrawal. Assume from what you described,
17 there are occasions where individuals miss work because of the
18 symptoms of caffeine withdrawal. So there's a loss of
19 productivity.

20 On the other hand, there's been a suggestion that
21 caffeine helps alertness in job performance. So how do you
22 balance those two?

23 THE WITNESS: That's what I was getting at. So the
24 alertness -- so you only see alertness effects in caffeine
25 users at work substantial when someone doesn't chronically use
26 caffeine. So caffeine, if used -- for someone who doesn't
27 normally use it, it can be an effective performance enhancer.
28 It may make you less tired. It may improve your

1 concentration, especially on vigilance-like tasks. Not so
2 much memory or complicated tasks, but kind of boring tasks
3 that you have to do over and over.

4 But the problem is most people don't use caffeine
5 that way. They use it daily or regularly. So once their
6 bodies become tolerant, then without the drug, they perform
7 worse. So what people are doing is they are using the drug to
8 increase alertness, but it's just to get them back to where
9 they would have been had they never been dependent on
10 caffeine.

11 Q. BY MR. METZGER: To baseline.

12 A. To baseline. There's no evidence that caffeine
13 enhances performance above and beyond baseline when used in a
14 chronic manner like that. And people tend to use it in a
15 chronic manner. So people every day at 4:00 o'clock will go
16 and get that second cup of coffee or third cup of coffee.
17 There's no evidence that that is actually helpful.

18 Q. Speaking of people who use it, I'll confess.
19 What about you?

20 A. I do consume coffee, yes, every day.

21 Q. Why?

22 A. Likely to get myself back to baseline and not
23 experiencing caffeine withdrawal.

24 Q. All right.

25 THE COURT: Well, I think that's a good place to
26 pause and have an afternoon recess. I'm not commenting on
27 what beverages people are going to take during the recess.
28 We'll be in recess for 15 minutes. And then we'll resume the

1 trial.

2 (Recess taken.)

3 THE COURT: Back on the record.

4 Dr. Juliano, let me ask you this question. Your
5 testimony about caffeine and the effects of caffeine, was your
6 study limited to caffeine in coffee beverages, or does it
7 extend to caffeine's presence in other beverages such as soft
8 drinks, Coke or Mountain Dew or exposure to energy drinks
9 recently?

10 THE WITNESS: Can I ask what you're referring to in
11 terms of the research? Are you asking if we only use coffee
12 consumers in the research, or when we manipulate caffeine, do
13 we do it using a vehicle of coffee or energy drinks?

14 THE COURT: Both.

15 THE WITNESS: Okay. So in our research, we recruit
16 individuals who consume all sources of caffeine for some
17 studies. Other studies we limit to only coffee drinkers.

18 In terms of the manipulation of caffeine, often we
19 administered decaffeinated coffee, and then we add caffeine to
20 it so we can control for the dose of caffeine in the coffee.

21 In other studies I've done, I have used -- in two
22 other studies, I've used energy drinks as a vehicle. But
23 again, we're formulating those, and we're adding caffeine in
24 specific dosages.

25 THE COURT: And for the work you've done in this
26 case, is it limited to coffee? Have you focused only on
27 coffee? Because most of your testimony has been on caffeine.
28 We've been in general listening to testimony about the effects

1 of caffeine. So for the work you've done on this case, is it
2 limited to caffeine present in coffee or in other beverages as
3 well.

4 THE WITNESS: It's not limited to coffee, but
5 because coffee is the largest source of caffeine, in order to
6 understand caffeine exposure, one needs to understand coffee
7 consumption. And also being that caffeine is a primary
8 reinforcing ingredient in coffee, people consume coffee
9 because of the caffeine. It's a reinforcer.

10 Most people consume caffeinated coffee. So to fully
11 understand coffee consumption, one needs to understand the
12 primary reinforcing ingredient in coffee, which is caffeine.

13 THE COURT: Okay. Thank you.

14 Mr. Metzger.

15 MR. METZGER: Thank you, your Honor.

16 Q. Dr. Juliano, I think we've covered caffeine
17 intoxication.

18 So let's now talk about anxiety. That's been
19 another area of your research, correct?

20 A. Yes.

21 Q. And by the way, regarding Judge Berle's
22 questions about your work in this case, is it correct that you
23 have not done any experiments or specific work for this case
24 other than developing your opinions in this case based upon
25 your own research?

26 A. Yeah, I have not done any specific sort of
27 analysis separating any type of caffeinated vehicle for this
28 case, no. I'm just speaking about my research in caffeine and

1 coffee.

2 Q. Okay. All right. So now anxiety. I guess
3 definitionally, what is anxiety?

4 A. Anxiety is a negative subjective state. It can
5 also be measured physiologically because it has physiological
6 correlations. Increased heart rate, skin sweating, blood
7 pressure, general feelings of uneasiness.

8 Q. And is anxiety a recognized diagnosis?

9 A. There are a number of different anxiety-related
10 disorders in the DSM.

11 Q. Okay. And what has your own research been
12 regarding the consumption of coffee, caffeine, on anxiety?

13 A. Caffeine is a known anxiogenic agent.

14 Q. What does that mean?

15 A. It means it causes anxiety. So there's clearly
16 pharmacological evidence that caffeine causes anxiety. This
17 relationship is dose dependent again. So larger doses of
18 caffeine are more likely to cause anxiety and cause for severe
19 anxiety; however, there's a tremendous amount of variability
20 among individuals and effects of caffeine.

21 So some people experience anxiety even at normal
22 dietary doses of caffeine, while others experience anxiety
23 from caffeine from larger doses.

24 Q. When you say normal dietary doses of caffeine
25 that some people experience anxiety from, can you quantify
26 that for us?

27 A. Yeah, a normal dietary dose could be something
28 like 200 milligrams of caffeine.

1 Q. Which would be how many cups of coffee?

2 A. It could be less than a 12-ounce cup of coffee.

3 Q. Okay. And could you inform the Court of some
4 of the studies that inform your opinion that caffeine causes
5 anxiety in humans?

6 A. Yes, there's been a number of controlled
7 research studies that have administered caffeine to
8 participants and then evaluated their anxiety. Sometimes it's
9 general anxiety, ratings of anxiety. Sometimes -- some
10 studies have actually induced panic attacks with caffeine.

11 Q. And what exactly is a panic attack?

12 A. A panic attack is a specific diagnosis, and it
13 involves somatic symptoms, sweating, heart rate increases.
14 People report feeling that the world is closing in on them.
15 Feelings of doom. And this is an isolated event where people
16 are panicking. They often think they are having a stroke or a
17 heart attack.

18 Q. I want to go back to something you said. You
19 said that caffeine is an anxiogenic drug; is that right?

20 A. Correct.

21 Q. And you explained that anxiogenic means that
22 caffeine causes anxiety. What are the types of studies that
23 you are relying on that enable you to make a causal
24 conclusion, as you have, for caffeine causing anxiety?

25 A. Well, the causal effects can be demonstrated
26 through controlled studies, experimental studies, where
27 caffeine or a control, in most cases a placebo, is
28 administered to individuals double-blind, and then the effects

1 of the -- what we call the independent variable are evaluated
2 on the measures.

3 So there are a number of controlled studies where
4 caffeine is administered to individuals in a double-blind
5 fashion.

6 Q. Okay. So regarding these caffeine-related
7 disorders that you have been testifying about, in your opinion
8 are these disorders recognized as being caused by caffeine
9 based upon controlled studies?

10 A. Yeah, absolutely. The goal of the DSM, any
11 diagnostic system is for those diagnosed to be empirically
12 validated. So it's not anecdotal or based on clinical
13 observations necessarily. It's also based on controlled
14 research demonstrating the relationship between the drug and
15 the outcome.

16 Q. And these types of what you've referred to as
17 controlled and experimental studies, are those different types
18 of studies than observational epidemiologic disease?

19 A. They are very different types of studies. I
20 teach research methodology, and I actually just taught this
21 last week. So yes, when you control an independent variable,
22 when you control the causal factor, and you manipulate it and
23 you control for a host of other potential extraneous
24 variables, then you can establish causality with the dependent
25 outcome. In this case it would be anxiety. So great efforts
26 are made to be able to isolate the causal factor.

27 Q. Okay. Thank you.

28 A. The issue with observational studies is the

1 chronic third variable issues, where --

2 Q. The what?

3 A. Third variable problem where any
4 relationship -- one, we don't know the direction of causality
5 in many cases. And second, we don't know if there are other
6 variables that are truly responsible for the relationship
7 between the variables under investigation.

8 Q. Confounders?

9 A. Yes, confounders. And other explanations.

10 Q. Okay. Thank you. Now, regarding anxiety, is
11 caffeine-related anxiety a diagnosis in the DSM-5?

12 A. Yes. A substance-induced anxiety disorder due
13 to caffeine. They changed the name, actually. In the last
14 edition it was called caffeine-induced anxiety disorder. To
15 be consistent with ICD-10, they were all changed. All drugs
16 were changed to substance-induced anxiety disorder, and then
17 the qualifier is the drug caffeine.

18 Q. Okay. So I'm gathering, from what you just
19 said, that this caffeine-induced anxiety disorder is also a
20 diagnosis in the International Classification of Diseases?

21 A. Yes, that is correct.

22 Q. Since at least 1992?

23 A. Correct.

24 Q. All right. Sleep?

25 A. Yes, I like it.

26 Q. So how would you characterize the relationship
27 between caffeine and sleep?

28 A. Well, caffeine is a known substance that has

1 effects on sleep. It disrupts sleep. It's a sleep inhibitor.

2 Q. And how is that known?

3 A. Well, it's known in a number of ways. The ways
4 in which I investigated have to do with behavioral
5 observations. So through controlled studies that have shown
6 that when caffeine is administered, it disrupts the -- it
7 increases the amount of time that it takes to fall asleep. It
8 reduces the total amount of time that one sleeps. It reduces
9 the perceived quality of sleep. It increases the number of
10 nighttime awakenings. So generally, people sleep more poorly
11 after they have consumed caffeine.

12 Q. And this has been shown by your own research
13 and other researchers in the field?

14 A. Yes, there are many research studies showing
15 this effect, and my own research has also shown when we give
16 people caffeine, they sleep more poorly, and they sleep for
17 less amount of time than the weeks that they are given placebo
18 or baseline.

19 Q. So what you're again describing is controlled
20 studies that you've done regarding caffeine and sleep?

21 A. Controlled double-blind studies.

22 Q. You've mentioned double-blind before. I don't
23 know that I asked you to define that. Can you tell us what a
24 double-blind study is?

25 A. A double-blind study is when neither the
26 participant nor the experimenter know which drug is being
27 administered, and that is to control for potential confounds
28 or placebo effects.

1 Q. And what is a placebo effect, very briefly?

2 A. Well, it's a non-drug effect. So it can be a
3 host of other factors, but it's something that we attribute
4 not to the active component of a drug.

5 Q. So in doing these controlled studies, is the
6 gold standard that they be double-blinded to minimize or
7 eliminate any possibility of other confounding?

8 A. Yes. A double-blind study is the gold
9 standard, but as I said before, double-blind studies may
10 actually underestimate the clinical outcomes in a naturalistic
11 environment.

12 Q. Why is that?

13 A. Because when people take a drug in the real
14 world, it's not only the drug they are getting, but it's the
15 full context of what they expect, and that could exacerbate or
16 change what they experience.

17 Q. And in the double-blind studies, you don't have
18 that?

19 A. You subtract out expectation. So you are
20 looking only at drug effects.

21 Q. Okay. All right. Now, let's get back to
22 specifically coffee. What does your research indicate
23 specifically regarding coffee consumption and sleeping
24 effects?

25 A. Because coffee is the largest source of
26 caffeine, coffee tends to cause the most disruption to sleep.
27 And that's a product of having more caffeine exposure.

28 Q. In the population, you mean?

1 A. More caffeine exposure in the population. So
2 people consume coffee, and then they -- it contains caffeine,
3 and then they have trouble sleeping.

4 Q. And has your research specifically addressed
5 coffee and anxiety?

6 A. I'm sorry. Sleep?

7 Q. I'm sorry. Coffee and sleep, yes.

8 A. Yes. We manipulated the caffeine dose in
9 coffee.

10 Q. In coffee as the vehicle.

11 A. Both coffee and energy drinks, yes.

12 Q. And does DSM-5 have a diagnosis related to
13 caffeine and sleep?

14 A. Yes, it has a substance-induced sleep disorder
15 diagnosis. The most common sleep disorder one sees with
16 caffeine is insomnia due to caffeine. It used to be called
17 caffeine-induced sleep disorder.

18 Q. And did you have a hand in writing that
19 diagnosis?

20 A. I had a hand in co-writing, yes, and editing
21 the prior diagnosis that was in the DSM-4, but that was an
22 established diagnosis since 1994 with DSM-4s.

23 Q. And did you also have a hand in writing the
24 diagnosis in -- or the diagnostic criteria in the DSM-5 for
25 the caffeine-induced anxiety disorder?

26 A. I co-wrote, edited mostly.

27 Q. Okay. And going back to sleep, is there a
28 disorder regarding caffeine and sleep in the ICD?

1 A. Yes.

2 Q. And what can you tell us about that?

3 A. For consistency purposes, DSM-5 made attempts
4 to be more consistent; so you'll see the ICD-related diagnoses
5 listed in the DSM-5 with similar terminology,
6 substance-induced sleep disorder.

7 Q. So is it correct that within the international
8 classification of diseases, there has been a caffeine-related
9 sleep disorder since at least 1992?

10 A. Correct.

11 Q. Okay. So I think that leaves one more topic
12 that you selected to talk about. And that is problematic
13 caffeine use. Can you tell us what that is?

14 A. So problematic caffeine use is similar in terms
15 of -- or the same, really, in nature as problematic use of any
16 drug. So when one consumes a drug, at times there are effects
17 of that drug consumption that are problematic for an
18 individual. So individuals -- some individuals have been
19 identified who caffeine is causing these host of symptoms
20 associated with drug addiction or drug dependence, and also
21 it's interfering with their lives. And that's what I refer to
22 as problematic caffeine use.

23 So not just being physically dependent, not just
24 having to have it every day to avoid withdrawal or to be able
25 to function at work. That's a separate issue. Sometimes
26 people confuse the two. The physical dependence on the drug
27 and the problematic use of a drug.

28 Being physically dependent on a drug in and of

1 itself is not deemed to be problematic. Because someone can
2 simply obtain the drug every day and use it every day. It's
3 their choice to be addicted and their choice to have to
4 procure it on a regular basis.

5 Problematic caffeine use is more than that. It's
6 having problems in one's life because of the consumption of
7 the drug.

8 Q. Okay. And does problematic caffeine use -- are
9 there symptoms associated with that?

10 A. Yes.

11 Q. Can you tell us about those?

12 A. So there are a number of symptoms that have
13 been identified along with the general feature of problematic
14 caffeine use. There are nine symptoms recognized by DSM at
15 this time. In order to meet the working diagnosis or the
16 research diagnosis for caffeine use disorder, which is the
17 name of problematic caffeine use in the DSM, one needs to meet
18 all three of the following criteria: They have to be using
19 the drug despite some sort of physical or psychological
20 negative effects or harm. They have to have tried to quit
21 using the drug unsuccessfully or taper their use
22 unsuccessfully. And they must be physically dependent on the
23 drug. Meaning that they will experience withdrawal if they
24 attempt to cease using the drug.

25 So right now that is the operational definition of
26 caffeine use disorder in the DSM.

27 One also has to have dysfunction along with those
28 symptoms in their life in some way. But there are also six

1 other features that we tend to observe more or less to
2 different degrees when people have these clusters of symptoms.

3 Q. All right. And is there a range of caffeine
4 doses that have been associated with problematic caffeine use?

5 A. Yes. So there's wide variability. For no drug
6 of addiction is the amount someone uses a criteria for
7 diagnosis drug addiction. And that's for all drugs, including
8 caffeine.

9 Heavy use, of course, of any drug may be associated
10 with negative health problems and so forth. But what we see
11 with caffeine is a large, a wide range of use. So we've
12 identified problematic caffeine use among individuals using as
13 little as 200 milligrams a day upwards of 2,200 milligrams a
14 day.

15 Q. And tell us about your research, if you would,
16 regarding problematic caffeine use?

17 A. So my research has focused on identifying the
18 characteristics of individuals who feel that their caffeine
19 use is problematic and who are seeking treatment for caffeine,
20 problematic caffeine use.

21 Q. And what publications have you authored
22 regarding that?

23 A. So there are two publications. One is a study
24 of the characteristics, and that is a larger sample of
25 individual, I believe. 275 people called in response to
26 advertisements seeking people who felt that they were having
27 problems with caffeine use, and we collected information from
28 those 275 individuals. The other publication is the

1 randomized clinical trial we talked about, testing the
2 efficacy of a brief manualized treatment for caffeine use
3 disorder.

4 Q. The Evadt study 2016, of which you are a
5 co-author?

6 A. I was the corresponding author. I was the lead
7 author. I mean, I'm not the lead author, but I designed the
8 study, and yeah, that was a study that I designed as a post
9 doc when I was at Johns Hopkins. Evadt is my student.

10 Q. Okay. So you were -- I guess they call it the
11 senior author?

12 A. I was the corresponding author. And yeah, it's
13 Griffiths was the senior author I will defer to.

14 Q. Got it. Okay. All right.

15 A. There is hierarchy.

16 Q. And regarding the disorder known as problematic
17 caffeine use or caffeine use disorder, I guess you said --

18 A. In the DSM, yes, it's caffeine use disorder.

19 Q. Is that characterized in the DSM-5 in a
20 particular way?

21 A. It is a diagnosis worthy of further study. We
22 refer to it as a research diagnosis.

23 Q. And what does that mean exactly?

24 A. It means that there was enough evidence and
25 enough studies that had demonstrated these clusters of
26 symptoms in individuals deemed it to be clinically
27 significant. But not enough information at this time to
28 warrant inclusion as a formal recognized diagnosis.

1 Q. And regarding formal recognized diagnoses of
2 caffeine-related disorders, would that include the caffeine
3 intoxication, caffeine withdrawal, caffeine-induced anxiety,
4 and caffeine-induced sleep disorders?

5 A. Yes, those are all fully recognized
6 caffeine-related disorders in the DSM.

7 Q. All right. And is caffeine use disorder or a
8 similarly named syndrome also recognized not just in the DSM-5
9 but also in the International Classification of Diseases?

10 A. Yes, the International Classification of
11 Diseases has long recognized caffeine dependence syndrome.

12 Q. When you say long --

13 A. Since 1992 at least.

14 Q. All right. So let me ask you, then, what is
15 your conclusion regarding the effect of caffeine from
16 consumption of coffee in psychological health?

17 A. I think caffeine -- and again, the primary
18 vehicle being coffee -- has very important psychological
19 effects and that they need to be recognized in terms of the
20 effects on sleep, the effects on anxiety, and the dependence
21 syndrome that develops when one chronically uses caffeine.

22 Caffeine intoxication is also an important public
23 health issue because people are exposed to caffeine in large
24 doses and have negative effects, often present at emergency
25 rooms, call poison control, and as well as problematic
26 caffeine use.

27 There is a population of individuals who would like
28 assistance stopping using caffeine for various reasons. In

1 our study 47 percent of our subjects had been directly advised
2 by medical professionals to quit using caffeine but without
3 any advice on how to do so.

4 So I think there is a need and a desire for
5 assistance in the same way that people desired assistance
6 getting off tobacco years ago when they were told oh, just
7 quit. It's a habit. It's easy. And I think that's how
8 caffeine users feel now when people say it's just caffeine.
9 Quit. And they try over and over, and they can't. So I think
10 that these are areas I'd like to continue to address in terms
11 of public education, health, and treatment.

12 Q. Does caffeine cause coffee drinkers to feel
13 compelled to drink coffee daily and throughout the day?

14 MR. BRAS: Objection. Lacks foundation.

15 THE COURT: Overruled. You may answer.

16 THE WITNESS: Yes. So a good analogy is nicotine.
17 When you take nicotine out of cigarettes, smokers don't like
18 them anymore. They won't smoke them for very long. In the
19 same way, caffeine has been through controlled research, been
20 identified as a primary reinforcing ingredient.

21 So when you take caffeine out of coffee, coffee
22 users don't like it -- sorry. Consumers don't like it as
23 much. They won't drink as much. They won't pay as much for
24 it. And this is in double-blind testing. So most coffee that
25 is consumed is caffeinated coffee. And caffeine, because it's
26 a reinforcer, because it can have direct pleasurable effects,
27 and also it's a negative reinforcer in that when one is
28 dependent and they don't get it, they feel bad.

1 So that combination of positive effects and avoiding
2 negative effects makes a drug reinforcing and is repeated.
3 It's been demonstrated that it is responsible for chronic use,
4 as we put it, the maintenance of drug taking.

5 Q. And does that, that maintenance that you've
6 just described that compels people to continue drinking coffee
7 for -- I think you called it the pharmacological effect --
8 does that cause people who are coffee drinkers to be
9 continually exposed to the constituents of coffee and any
10 additives in coffee?

11 MR. BRAS: Objection. Lacks foundation. The
12 witness has stated she doesn't have any opinions about
13 anything other than caffeine in coffee.

14 THE COURT: Objection sustained. Please rephrase
15 the question.

16 MR. METZGER: Okay.

17 Q. In your opinion, Dr. Juliano, does the
18 addictive or dependent effects of caffeine compel coffee
19 drinkers to consume coffee regularly with any of the
20 constituents and the additives that may be in the coffee?

21 MR. BRAS: Objection. It's the same question and
22 the same objection.

23 THE COURT: The witness may answer the question.

24 THE WITNESS: Yes. So a reinforcer is by definition
25 something that someone does repeatedly because of its effects,
26 and therefore would be exposed to anything else. This issue
27 comes up with other substances that contain caffeine as well
28 in terms of exposure to the agents in their product.

1 MR. METZGER: Thank you, Dr. Juliano. I appreciate
2 your testimony.

3 THE COURT: All right. Thank you.

4 Cross.

5
6 CROSS-EXAMINATION

7 BY MR. BRAS:

8 Q. Good afternoon, Dr. Juliano.

9 A. Good afternoon.

10 Q. You're not offering any opinions regarding any
11 component of coffee other than caffeine, correct?

12 A. Correct.

13 Q. You're not offering any opinions regarding
14 decaffeinated coffee, correct?

15 MR. METZGER: Objection. She's testified about
16 decaffeinated coffee in her testimony so far.

17 THE COURT: Overruled. You may answer.

18 THE WITNESS: I am -- my research does investigate
19 decaffeinated coffee as well because of the low doses of
20 caffeine that it contains that could be pharmacologically
21 active. And this is an important issue in my research that we
22 try to control for. So my research does have an interest in
23 decaffeinated coffee.

24 Q. BY MR. BRAS: So your research does have an
25 interest in decaffeinated coffee, but my question was do you
26 have any opinions offered at this stage regarding the
27 consumption of decaffeinated coffee?

28 A. No.

1 Q. I believe you stated on direct testimony today
2 that the normal dietary dose of caffeine is 200 milligrams; is
3 that correct?

4 A. I didn't say it was the normal dietary dose.
5 It was in the range of a normal dietary dose.

6 Q. I see.

7 A. People don't normally want to consume amounts
8 higher than that in general. Some people, if they are highly
9 tolerant, would. But that's the upper range of a normal
10 acceptable dietary dose.

11 Q. The mean daily caffeine consumption among adult
12 caffeine consumers in the U.S. is about 280 milligrams per
13 day, equivalent to about two cups of coffee; is that correct?

14 A. I am familiar with that data. 280 milligram
15 value. I can't speak to how much that translates in terms of
16 coffee because of the wide variability you see in dose of
17 coffee. But according to -- when I speak to manufacturers,
18 you know, I'm given values that there are 300 milligrams of
19 caffeine in a 12-ounce cup of coffee, 400 in a 16-ounce cup
20 coffee, and 500 in a 20-ounce cup of coffee, and those values
21 are different, let's say, than the values you're giving me.

22 So I can only go by what the manufacturers give me
23 or independent testing that I've done on decaffeinated coffee.

24 Q. I see. I'd like to show you Exhibit 60116.
25 The title of this article is Characterization of Individuals
26 Seeking Treatment for Caffeine Dependence, correct?

27 A. Correct.

28 Q. And you're an author of this paper?

1 A. Yes.

2 Q. If you look on the first page, you write:
3 "Mean daily caffeine consumption among adult caffeine
4 consumers in the United States has been estimated to be
5 280 milligrams per day, the equivalent of about two cups of
6 coffee, or seven 12-ounce cans of caffeinated soft drinks,"
7 correct?

8 A. Correct.

9 MR. METZGER: Well, with a citation.

10 THE WITNESS: That's Barone and Roberts, 1996. And
11 that was a direct query by the publisher, who asked us to add
12 that information. You know, there's so much variability, it's
13 very hard to give equivalents other than the products that
14 caffeine is added to. We can do that with soft drinks, but
15 with coffee we were asked to do that.

16 Q. BY MR. BRAS: That's what you wrote here?

17 A. Yeah.

18 Q. You agree that the typical dietary doses of
19 caffeine up to 300 milligrams per day are generally consumed
20 without incident, correct?

21 A. Correct.

22 Q. When you speak of acute doses, you mean a dose
23 consumed all at one time; is that right?

24 A. An acute dose is a dose consumed at one time.
25 Yes.

26 Sorry, I didn't have my glasses on, and we went
27 through that quickly. Can you tell me what you were referring
28 to with the 300 milligrams a day?

1 THE COURT: It's not your opportunity to ask
2 questions.

3 Next question.

4 THE WITNESS: All right. Sorry. Because I don't
5 know where that is in here. But okay.

6 Q. BY MR. BRAS: You would agree that individual
7 doses of caffeine between 0 to 200 milligrams generally
8 produce rewarding subjective effects, correct?

9 A. Correct.

10 Q. You're a psychologist, correct, Dr. Juliano?

11 A. I'm a clinical psychologist, yes.

12 Q. And you have no degree in epidemiology,
13 correct?

14 A. No.

15 Q. And you became a full professor of psychology
16 in 2015?

17 A. Yes.

18 Q. So you are familiar with the American
19 Psychiatric Association?

20 A. Yes.

21 Q. And you discussed with Mr. Metzger today DSM;
22 is that right?

23 A. Yes.

24 Q. And you are relying on DSM for your opinions?

25 A. Well, I was asked to form opinions about
26 diagnoses in the DSM, and I would say DSM relied on my
27 opinions in some cases.

28 Q. DSM does not recognize caffeine use disorder as

1 a formal disorder, correct?

2 A. Correct.

3 Q. Caffeine use disorder is what's called a
4 condition for further study, correct?

5 A. Correct.

6 Q. And you agree that more research is needed to
7 determine the reliability, validity, and prevalence of
8 caffeine use disorder, correct?

9 A. Correct.

10 Q. I think you stated you are a contributing
11 author to the DSM on caffeine use disorder; is that right?

12 A. I was an appointed advisor to the substance use
13 disorders work group on matters related to caffeine.

14 Q. I see. So you agree with the American
15 Psychiatric Association that there's a high rate of
16 non-problematic daily caffeine use in the general population,
17 correct?

18 A. Yes. So as long as people can procure a daily
19 dose.

20 Q. I'd like to show you what's been marked as
21 Exhibit 59474. You're an author of this paper, correct?

22 A. Correct.

23 Q. And this was published in 2016?

24 A. Correct.

25 Q. Looking at the first page in the introduction,
26 you state: "The widespread popularity of caffeine is likely
27 due to its mild positive stimulating effects, presence in a
28 wide variety of products, and integration into cultural

1 customs and routines," correct?

2 A. Correct.

3 Q. You also state that: "In general, when
4 consumed at low to moderate daily doses, e.g., less than
5 400 milligrams, caffeine is a relatively safe drug that offers
6 some functional, e.g., staying awake during a long drive, and
7 perhaps health protective effects, e.g., Parkinson's disease,"
8 correct?

9 A. Correct.

10 THE COURT: Are you asking the witness whether you
11 read it correctly or something about the substance?

12 Q. BY MR. BRAS: You wrote this article?

13 A. Yes.

14 Q. And you wrote that statement?

15 A. Yes.

16 Q. And that's your opinion?

17 A. Yes.

18 Q. You have a citation to another of your papers
19 at the end of that statement, correct? To Juliano, Ferre, and
20 Griffith, 2014?

21 A. Yes.

22 Q. If we could take a look at that, I believe it's
23 Exhibit 55422. This is a chapter out of a book entitled
24 Pharmacology of Caffeine, correct?

25 A. Correct.

26 Q. And you're an author of this particular chapter
27 in the book?

28 A. Correct.

1 Q. And the first paragraph in that first page, you
2 write: "Caffeine is not highly associated with any
3 life-threatening illnesses. Typical daily dietary doses can
4 be consumed under many circumstances without incident,"
5 correct?

6 A. Correct.

7 Q. Is that's still your opinion?

8 A. Yes.

9 Q. Turning to Page 184 --

10 THE COURT: All right. Is there something
11 substantive you want to ask the witness, or is it just to
12 recite passages from her writings?

13 MR. BRAS: The substantive question is if that's
14 still her opinion, that daily dietary doses have --

15 THE COURT: Well, she wrote it. Be I assume that's
16 her opinion. I mean, where is it going?

17 MR. BRAS: It's to establish that normal daily
18 dietary doses of caffeine have no negative --

19 THE COURT: Why don't you ask the witness a direct
20 question, then.

21 Q. BY MR. BRAS: Caffeine is widely used to
22 increase energy and prevent sleepiness, right?

23 A. Yes.

24 Q. And you consider that a benefit, correct?

25 A. I don't consider it a net benefit. I consider
26 it a benefit in that when people consume caffeine, they feel
27 better than when they don't. But it doesn't mean that it's a
28 net benefit, putting someone above and beyond their normal

1 state, their normal quality state. There's very little
2 evidence that people who use caffeine have more energy than
3 people who don't. It's that they -- people who use caffeine
4 use it daily, and therefore, they need it. They come below
5 their baseline, and then they use caffeine to restore to a
6 normal baseline. That's what most of the research shows.

7 It's negative reinforcement. It's not positive
8 reinforcement over time. Initially, the drug is a stimulant
9 that has those effects for sure. Otherwise, you wouldn't see
10 tolerance and then the offset to them.

11 Q. So a truck driver, for instance, who may be on
12 a long drive, consumes coffee for the benefit of staying
13 awake, correct?

14 A. Yes. But if that truck driver did that every
15 day all the time, that wouldn't be the best use of the drug.
16 You should use it only when you feel sleepy so that the drug
17 can stop that sleep-promoting factor, the tendency.

18 Q. If we could take a look at Exhibit 59855. This
19 is DSM regarding caffeine intoxication, correct?

20 A. Yes.

21 Q. And one of the diagnostic criteria is that
22 recent consumption of caffeine, typically at a high dose well
23 in excess of 250 milligrams, correct?

24 A. Correct.

25 Q. So that means the typical diagnostic criteria
26 for caffeine intoxication is a high dose of caffeine, above
27 250 milligrams, correct?

28 A. In general, but you can see it at lower doses.

1 Q. You can see it at lower doses, but in general
2 it's a much higher dose?

3 A. Right, in general. But caffeine has amazing
4 variability from one person to the next.

5 Q. And normal caffeine consumers typically develop
6 a tolerance to caffeine; is that right?

7 A. Correct.

8 Q. So over time, they may consume more caffeine.
9 They develop a tolerance to the effects of caffeine.

10 A. Yeah, but one thing about tolerance is you
11 don't develop tolerance to all the pharmacological effects
12 concurrently. I call it the Murphy's Law of tolerance. Often
13 you develop tolerance to the positive effects but not the
14 negative effects to the drug.

15 Q. And we're speaking about caffeine intoxication.
16 That's referring to acute consumption, correct? As opposed to
17 over a day.

18 A. No, over a day can definitely be important
19 because you -- you know, you don't have immediate clearance of
20 caffeine. It's 4 to 6 hour in general half life, but that can
21 range you up to 10 hours, 14 hours for some individuals. So
22 there's still caffeine in the body when someone consumes
23 additional caffeine, and caffeine toxicity can build over a
24 day.

25 Q. So the half life of caffeine is generally 4 to
26 6 hours?

27 A. Generally. Again, large variability. If you
28 add oral contraceptives to the mix, then you can double that

1 time.

2 Q. And the symptoms of caffeine intoxication,
3 should they occur, are temporary, correct?

4 A. They usually resolve within a day or two.

5 Q. And there are no long-lasting consequences of
6 caffeine intoxication, correct?

7 A. Yes, when taken at a non-lethal dose, yes.
8 There's no documented long-lasting effects other than the
9 memories of the bad experience.

10 Q. I'd like to turn to the topic of anxiety. You
11 cited to a number of studies in support of your opinion that
12 coffee increases anxiety, correct?

13 A. Can you state the question again?

14 Q. Sure. You cited in your list of opinions to
15 some studies in support of your opinion that coffee increases
16 anxiety; is that right?

17 A. Yes.

18 Q. All of those studies involve providing human
19 subjects with large acute doses of caffeine in order to induce
20 anxiety; is that right?

21 A. Can you define large?

22 Q. Well, they are varying amounts, correct?

23 A. Yeah, some use doses as low as 150 milligrams.
24 Some as high as 710 milligrams, let's say.

25 Q. Some as high as two grams, correct?

26 A. 2,000 milligrams of caffeine in an acute dose?
27 I would have to be refamiliarized with that study. That's
28 not -- that's not nice.

1 Q. Let's take a look at some of those studies. If
2 we could go to Exhibit 51176. This is one of the studies you
3 relied on for your opinions, correct?

4 A. Correct.

5 Q. It's titled Plasma Adenosine Levels,
6 Measurement in Humans and Relationship to the Anxiogenic
7 Effects of Caffeine, correct?

8 A. Correct.

9 Q. If we look at the abstract, we can see that
10 it's a study of eight volunteers, correct?

11 A. Correct.

12 Q. Given three different doses of caffeine,
13 correct?

14 A. Correct.

15 Q. That's 240 milligrams, 480 milligrams, and
16 720 milligrams of caffeine, correct?

17 A. Correct.

18 Q. If you would go to Page 253 of this document.
19 The line is although there is a positive linear
20 relationship between Zung anxiety and plasma caffeine levels
21 in each subject, only the 720 milligram dose of caffeine
22 resulted in statistically significant increases in anxiety for
23 the group, correct?

24 A. Correct.

25 Q. So these authors are saying that only the
26 highest dose of 720 milligrams was statistically significant
27 to increase anxiety, correct?

28 A. Correct. But nowadays, statistical

1 significance is not given as much weight as effect size
2 because the subject number has too much of an influence on it.
3 So I would just offer that just because something isn't
4 statistically significant doesn't mean that it's not having a
5 clinically important effect. And vice versa. Very often we
6 see statistical significance, but we don't care because the
7 clinical significance is so weak.

8 Q. And in this study we only have eight subjects,
9 right?

10 A. Yeah.

11 Q. So if we look at the next exhibit, 59487. By
12 the way, 720 milligrams, you consider that a large dose of
13 caffeine, correct?

14 A. Yes.

15 Q. And that's given to humans in a study, correct?

16 A. Yes, these were normal caffeine consumers in
17 that study you're referring to.

18 Q. So in order to conduct a study on humans, you
19 have to be sure that the dose of caffeine you're giving is not
20 going to be dangerous, correct?

21 A. Correct.

22 Q. So 720 milligrams in this instance was
23 considered not to be dangerous.

24 A. Correct.

25 Q. And that's above the average daily dose of
26 caffeine that a typical consumer consumes; is that right?

27 A. Yes, so typically in the large body of
28 research, anything acute above 400 milligrams tends to be

1 associated with negative subjective effects. So we tried to
2 avoid that just for human protection reasons. These studies
3 were done a long time ago. They took some more liberties that
4 are done usually today.

5 Q. I think I just handed you 59487. Do you see
6 that?

7 A. Yes.

8 Q. This is another study you relied on, correct?

9 A. Correct.

10 Q. And this study, in the abstract, investigated
11 the effects of giving test subjects 10 milligrams of caffeine
12 per kilogram of body weight, correct?

13 A. Yeah.

14 Q. This is going to involve a little math, but
15 70 kilograms is about 155 pounds; is that about right?

16 A. The average human is about 70 kilograms, right.

17 Q. So the average kilogram is about 70 kilograms?

18 A. Yeah.

19 Q. So in this study, they are providing dosing
20 human subjects with 10 milligrams of caffeine per kilogram,
21 correct?

22 A. Correct.

23 Q. Meaning that an average human would receive
24 about 700 milligrams of caffeine?

25 A. Correct.

26 Q. Another high dose of caffeine, correct?

27 A. Yes.

28 Q. You also discussed a little about panic attacks

1 in conjunction with your opinions about anxiety; is that
2 correct?

3 A. Correct.

4 Q. You agree the research on panic attacks is
5 focused on people who are prone to anxiety as opposed to the
6 general population, correct?

7 A. I don't understand the question.

8 Q. Sure. The research on panic attacks with
9 caffeine is focused on people who are prone to anxiety; is
10 that correct?

11 A. Yes. Because that is a vulnerable population
12 when it comes to caffeine. So the resources really go towards
13 understanding the effects of caffeine on individuals with
14 anxiety because it takes much lower doses to trigger anxiety.
15 These studies were done with normal healthy volunteers. So
16 larger doses were acceptable.

17 But when using a panic disordered population and
18 comparing that to healthy controls, it's much easier to
19 trigger panic in a panic disordered or anxiety-prone
20 population or even individuals who report higher anxiety
21 sensitivity. But we have a very large population of people
22 who suffer from anxiety disorders.

23 Q. And I think you mentioned healthy controls are
24 part of these studies; is that right?

25 A. Better phrasing would be non-anxious
26 individuals.

27 Q. So only two of the studies that you cited in
28 support of your opinion actually include non-anxious people;

1 is that correct?

2 A. The other studies include non-anxious people
3 but normally as controls. There are fewer studies with
4 non-anxious individuals where they deliver doses of caffeine.

5 Q. And in your opinions, you only cited to two of
6 those, correct?

7 A. Yes.

8 Q. Let's take a look at 51187. Dr. Juliano, do
9 you recognize this paper as one of the papers you relied upon
10 for your opinions?

11 A. Yes.

12 Q. This study actually involves comparing those
13 with panic disorder and those with major depression with panic
14 attacks as well as those with major depression without panic
15 attacks to healthy volunteers; is that right?

16 A. Correct.

17 Q. In this study subjects were given doses of
18 480 milligrams of caffeine, correct?

19 A. Correct.

20 Q. Increase in anxiety amongst the healthy
21 volunteers was not statistically significant, correct?

22 A. Correct.

23 Q. Look at the other paper you mentioned. 51188.
24 Dr. Juliano, this was another paper that you reviewed for your
25 opinions, correct?

26 A. Correct.

27 Q. And this is the other study that compares those
28 with panic and social anxiety disorders to healthy individuals

1 who do not have those disorders, correct?

2 A. Correct.

3 Q. And again, in this study they are providing
4 subjects with a high acute dose of 480 milligrams of caffeine,
5 correct?

6 A. Yes, 480 milligrams of caffeine.

7 Q. And in this particular study, none of the
8 controlled subjects had a panic attack after that dose of
9 caffeine, correct?

10 A. Correct.

11 Q. Caffeine-induced anxiety disorder has a
12 prevalence -- a 12-month prevalence of approximately
13 .002 percent, correct?

14 A. I'm not aware of that data.

15 Q. Pull up 59853. This is DSM on
16 substance-induced anxiety disorder, correct?

17 A. Correct.

18 Q. And one of those substances, as you mentioned,
19 is caffeine, correct?

20 A. Yes, correct.

21 Q. If you'd turn to Page 229. There's a section
22 on prevalence, correct?

23 A. Correct.

24 Q. DSM states: "General population data suggests
25 that it may be rare with a 12-month prevalence of
26 approximately .002 percent," correct?

27 A. Yes, that's what it says.

28 MR. METZGER: Well, complete it, please. You're

1 leaving out the next sentence.

2 THE COURT: Is there an objection?

3 MR. METZGER: Objection. It's incomplete.

4 THE COURT: All right. Overruled.

5 Q. BY MR. BRAS: So the .002 percent referenced
6 here is inclusive of all the substances included in the DSM,
7 correct?

8 A. As it's written, yes.

9 Q. So that includes alcohol, correct?

10 A. The prevalence of substance medication-induced
11 anxiety disorder is not clear. Really, there's almost no good
12 data on the prevalence. This value you're referring to, I
13 assume the way it's written would include all the
14 substance-induced. But this is a bona fide anxiety disorder
15 caused by the substance, not a negative -- not just anxiety.
16 There's a difference. But yes.

17 Q. So some of those other substances that this
18 figure includes are hallucinogens, opioids, and cocaine,
19 correct?

20 A. I can only assume so because I don't know the
21 source of the data. It's possible it was based only on what
22 they had for one of those drugs or -- I really don't know.

23 Q. Okay. So you --

24 A. The last version of the DSM, the data was not
25 available. What happened was they combined the drugs for this
26 version. So I don't know where this came from. In the last
27 version of the DSM, there was a separate caffeine-induced
28 anxiety disorder.

1 Q. And the prevalence was unknown?

2 A. Was unknown.

3 Q. Caffeine is used intentionally to prevent
4 sleep, correct?

5 A. Yes.

6 Q. And you recognize that preventing unwanted
7 sleep such as when driving long distances is a benefit of the
8 effects of caffeine, correct?

9 A. Correct.

10 Q. You also recognize that low to moderate doses
11 of caffeine typically produce a profile of positive subjective
12 effects, including increased energy, arousal, alertness, and
13 sociability, correct?

14 A. Yes, except for those effects are demonstrated
15 among chronic users who have been deprived of caffeine or
16 people who don't use caffeine.

17 Q. Do you also agree that caffeine reliably
18 increases performance on task performance that has been
19 degraded by fatigue, correct?

20 A. Can you repeat the question?

21 Q. Sure. Do you also agree that caffeine reliably
22 increases performance on task performance that has been
23 degraded by fatigue, correct?

24 A. Again, those effects are shown among chronic
25 caffeine users who are in a state of abstinence or non-users.
26 So the caveat is yes, you do see those effects reliably, but
27 you have to first tell chronic users to not use caffeine for
28 12, 24 hours. And then they are in fatigue, or they are

1 decremented, and then they feel great when you give them
2 caffeine, and they perform better.

3 Q. Do you observe those effects in users who are
4 non-users of caffeine?

5 A. You do, but the problem is they are harder to
6 see because sometimes you induce anxiety. So the benefits in
7 a non-user of caffeine, which is only about 10 percent of the
8 population, the problem is when you try to use them in
9 research, you start seeing all these negative subjective
10 effects at low doses; so it's hard to even show the benefits.
11 And then you have the population issue.

12 But in some individuals in low dosage you can see
13 increased talkativeness, sociability. Typical profile of
14 stimulant effects at low doses.

15 Q. And you also agree that caffeine at normal
16 dietary doses increases tapping speed, reaction time,
17 sustained attention or vigilance, and perhaps also focused
18 attention, correct?

19 A. Correct, with the same caveat in place. You
20 need to have chronic caffeine users abstain, and you can
21 reliably show these effects.

22 Q. Let's talk for a moment about caffeine
23 withdrawal. Caffeine withdrawal results from abrupt cessation
24 of caffeine after daily prolonged use, correct?

25 A. Correct.

26 Q. I think you mentioned earlier that the effects
27 are temporary, correct?

28 A. Caffeine withdrawal usually lasts from two to

1 nine days. It actually lasts for a shorter amount of time
2 because most people consume caffeine. So you don't usually
3 see people going out nine days.

4 Q. Right. And that's because if you have a cup of
5 coffee or a cup of tea that contains caffeine as well, the
6 systems disappear, correct?

7 A. The symptoms, within 30 to 60 minutes.

8 Q. So the symptoms of caffeine withdrawal
9 disappear within 30 to 60 minutes after having a small amount
10 of caffeine, correct?

11 A. Yes. You'd have to define small, but after
12 having a dose of caffeine, in my research, we administer, you
13 know, a 280 milligram dose of caffeine, and withdrawal remits
14 within about 60 minutes.

15 Q. It could be a cup of coffee, correct?

16 A. A cup of coffee.

17 Q. It's your recommendation that in order to avoid
18 any potential serious withdrawal symptoms, people should limit
19 their daily caffeine consumption to 400 milligrams of
20 caffeine, roughly two to three eight-ounce cups of coffee,
21 correct?

22 A. Can you repeat the question?

23 Q. Sure. It is your recommendation that in order
24 to avoid any potentially serious withdrawal symptoms, people
25 should limit their daily caffeine consumption to 400
26 milligrams of caffeine, roughly two to three eight-ounce cups
27 of coffee, right?

28 A. No, absolutely not. That's much more caffeine

1 than is necessary to produce physical dependence and
2 withdrawal upon abstinence. So 400 milligrams, that value
3 comes from a different analysis of caffeine, but one thing
4 that needs to be considered is that at lower doses, people
5 will experience caffeine withdrawal but only if they miss a
6 dose.

7 Q. Do you recall having an interview with an
8 Eric Pfeiffer of Yahoo News?

9 A. No.

10 Q. You published peer-reviewed articles in which
11 you state that caffeine, when consumed at less than
12 400 milligrams per day, is a relatively safe drug that offers
13 some functional and perhaps health protective effects,
14 correct?

15 A. I agree with that statement so long as you can
16 procure a daily dose. That statement does not say therefore,
17 you can use it and not be subject to caffeine withdrawal.
18 Because, as I said before, being physically dependent on a
19 drug is not in and of itself considered problematic unless you
20 cannot procure a dose, and the thing about caffeine in our
21 society is that you can get a dose of caffeine every day.

22 Now, you know, I talked to soldiers and so forth.
23 They don't always have the same luxury. But for the most
24 part, unless you are having surgery or something, you can
25 avoid withdrawal. Now, the story would be a different one if
26 all of a sudden we couldn't procure those doses. So that
27 statement I agree with so long as you can maintain your
28 addiction and daily dose.

1 Q. You'd agree that as long as you can maintain
2 your coffee consumption, it's a relatively safe drug?

3 A. The safe refers to no long-lasting chronic
4 health effects as we see with, let's say, tobacco. My area of
5 research, I study psychological effects. We don't usually
6 call anxiety dangerous. We don't call insomnia dangerous.
7 But those are effects that disrupt people's quality of life
8 and are unwanted, and psychologists such as myself are to help
9 people avoid those if possible.

10 Q. So you're not speaking of long-term health
11 effects?

12 A. No, that is not my expertise or research.

13 MR. BRAS: Your Honor, I think that's all I have.

14 THE COURT: All right. Thank you. Any redirect?
15

16 REDIRECT EXAMINATION

17 BY MR. METZGER:

18 Q. Dr. Juliano, there's a monitor in front of you.
19 Do you see that?

20 A. Yes.

21 Q. In giving your testimony, did you need to look
22 at or read any Power Point slides?

23 A. No.

24 MR. METZGER: Thank you.

25 THE COURT: All right. May Dr. Juliano be excused?

26 All right. Thank you, you may step down, and you'll
27 be excused. Before you do that, just a moment to take care of
28 some procedural matters.

1 Let's line up the schedule for tomorrow.

2 MR. METZGER: Tomorrow we have, I believe, motions
3 and lots of rulings to be made by you on the deposition
4 testimony excerpts of defendants' persons most knowledgeable
5 regarding reduction of acrylamide in coffee. No live witness
6 tomorrow. The next live witness will be -- Monday, I believe,
7 is our next session.

8 THE COURT: Okay. All right. So we'll see everyone
9 tomorrow morning at 9:00 o'clock. Thank you.

10 MR. MARGULIES: Your Honor, one matter briefly
11 before we move on. With regard to what happens after this
12 phase, we wanted to raise the issue of timing and order of
13 proof. Given that we have so many companies, so many
14 witnesses and trying to get a sense of timing, if the Court
15 will recall in the briefs filed before the case, we have a
16 very strong divergence of opinion as to what happens next.

17 Mr. Metzger's position is that he puts on a minimal
18 piece of evidence. The burden shifts to the defendants. Our
19 position is that the case should proceed according to the
20 normal order of proof. Plaintiff puts on all of its evidence
21 on whatever is left. We put on our response.

22 We've met and conferred on this at length many
23 times. I don't think further meeting and conferring is going
24 to be productive.

25 The Court's going to have to rule. I'm not
26 suggesting it's today, but the sooner the better in terms of
27 us and the logistics of all the lawyers and the 75 companies
28 that have to be here.

1 THE COURT: All right. Well, we'll discuss that
2 tomorrow morning since we don't have witnesses here.

3 MR. MARGULIES: Thank you.

4 THE COURT: All right. Thank you. The witness may
5 step down. The court will be in recess.

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7 (Proceedings concluded at 4:30 P.M.)
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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

DEPARTMENT 323

HON. ELIHU M. BERLE, JUDGE

CERT,)	
)	
)	PLAINTIFF,
)	
VS.)	CASE NO. BC 435759
)	
)	BC 461182
STARBUCKS CORP, ET AL.,)	
)	
)	DEFENDANTS.
)	

I, MARK SCHWEITZER, OFFICIAL COURT REPORTER PRO TEM OF THE SUPERIOR COURT OF THE STATE OF CALIFORNIA, COUNTY OF LOS ANGELES, DO HEREBY CERTIFY THAT THE FOREGOING TRANSCRIPT, DATED SEPTEMBER 19, 2017, P.M. SESSION, COMPRISES A FULL, TRUE, AND CORRECT TRANSCRIPT OF THE PROCEEDINGS HELD IN THE ABOVE-ENTITLED CAUSE.

DATED THIS 19TH DAY OF JUNE, 2017.

MARK SCHWEITZER, RPR, CRR, CSR NO. 10514

EXHIBIT “C”

**Laura M. Juliano,
Ph.D. Curriculum Vitae
May, 2017**

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American University
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Washington D.C. 20016-8062

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EDUCATION

National Institute on Drug Abuse Post-Doctoral Fellowship (August 2000- August 2002)

Johns Hopkins University School of Medicine
Department of Psychiatry and Behavioral Sciences
Behavioral Pharmacology Research Unit

Ph.D., Clinical Psychology (August 2000)

State University of New York at Binghamton
Minor concentrations: Health Psychology, Drug Dependence

APA Accredited Clinical Internship (July 1999 - July 2000)

Medical University of South Carolina

M.A., Clinical Psychology (January 1997)

State University of New York at Binghamton

B.A., Psychology (May 1990)

State University of New York at Binghamton
Minor: Human Services

ACADEMIC APPOINTMENTS

2015-present Professor, Department of Psychology, American University, Washington D.C.
2009-2015 Associate Professor, Department of Psychology, American University, Washington D.C.
2002-2009 Assistant Professor, Department of Psychology, American University, Washington D.C.
2000-2002 Adjunct Instructor, Department of Psychology, Loyola College, Baltimore, Maryland

HONORS/AWARDS

- NIDA Travel Award, American Psychological Association, August, 2004
- Mentor/student Travel Award, American Legacy Foundation, Feb., 2003
- Outstanding Dissertation Award for Division 28 of the American Psychological Association, 2002
- NIDA Director's Travel Award, College of Problems on Drug Dependence, June, 2001
- Laura Griffin Humanitarian Award, Medical University of South Carolina, July, 2000
- Outstanding Academic Performance in Harpur College, May, 1990
- Psi Chi: National Honor Society in Psychology, May, 1989

EXTERNAL GRANTS

Awarded Completed

Principal Investigator (6/2012-4/2017). Placebo Mechanisms Underlying Smoking Behavior and Relapse Processes. National Institute on Drug Abuse. 1R01DA033235. \$750,000

Faculty Sponsor (Awarded 9/2007). Depression and Smoking: The Role of Gender and Cognitive Control. National Institute on Drug Abuse. National Research Service Award. PI: Lisa M. Fucito, M.A. 1F31 DA022787. \$26,000 (direct)

Principal Investigator (Awarded 9/2004). Disentangling Pharmacological and Expectancy Effects. National Institute on Drug Abuse. 1R03 DA18709. \$50,000 (direct)

INTERNAL GRANTS

Principle Investigator (Fall, 2015). The effects of smoking availability and smoking stimuli on motivation to smoke. University Mellon Award, \$3060.00.

Principal Investigator (2015-2016). Effects of energy drinks on sleep and daily functioning. Psychology Department Award. \$10,000

Principal Investigator (Spring, 2015). Differences among menthol and non-menthol smokers in reward and behavior. American University Faculty Research Award. \$10,000

Principal Investigator (Fall, 2013). Effects of energy drinks on young adults. American University Mellon Award, \$1500.00

Principal Investigator (Fall, 2011). Predictors of smoking lapse to relapse progression. American University Mellon Award, \$4000.00

Principle Investigator (Fall, 2010). Behavioral and personality traits of current smokers, former smokers, and never smokers. American University Mellon Award, \$1500.00.

Principle Investigator (Spring, 2010). Disentangling the roles of conditioning and expectancy in motivation to smoke after a lapse. American University Mellon Award, \$1000.00

Principal Investigator (Fall, 2008). Does sadness increase smoking motivation? American University Mellon Award, \$2000.00

Principal Investigator (May, 2007). Disentangling the relationship between negative mood and smoking: An evaluation of cognitive control and gender as moderating variables. American University Faculty Research Award, \$4800.00

Principal Investigator (Spring, 2006). Do expectancies influence caffeine withdrawal? An experimental study. American University. Mellon Award, \$2000.00

Principal Investigator (Fall, 2003). A human laboratory model of extinction learning. American University. Mellon Award. \$2000.00

Principal Investigator (Fall, 2002). Experimental analysis of caffeine withdrawal symptoms. American University. Mellon Award, \$1982.00

PEER-REVIEWED PUBLICATIONS (in reverse chronological order)

*Muench, T. & Juliano, L.M. (2017, in press). Predictors of smoking lapse during a 48-hour laboratory analogue smoking cessation attempt. *Psychology of Addictive Behaviors*.

*Evatt, D., Juliano, L.M., & Griffiths, R.R. (2016). A brief manualized intervention for problematic caffeine use: A randomized control trial. *Journal of Consulting and Clinical Psychology*, *84*, 113-121.

*Ross, K.C. & Juliano, L.M. (2016). Smoking through a topography diminishes some of the acute rewarding effects of smoking. *Nicotine & Tobacco Research*, *18*, 564-571.

*Ross, K.C. & Juliano, L.M. (2015). Perceived smoking availability differentially affects mood and reaction time. *Addictive Behaviors*, *45*, 234-238.

Meredith, S.E., Juliano, L.M., Hughes, J.R., & Griffiths, R.R. (2013). Caffeine use disorder: A comprehensive review and research agenda. *Journal of Caffeine Research*, *3*, 114-130.

Budney, A.J., Brown, P.C., Griffiths, R.R., Hughes, J.R., & Juliano, L.M. (2013). Caffeine withdrawal and dependence: A convenience survey among addiction professionals. *Journal of Caffeine Research*, *3*, 67-71.

Juliano, L.M., *Evatt, D., *Richards, B., & Griffiths, R.R. (2012). Characterization of individuals seeking treatment for caffeine dependence. *Psychology of Addictive Behaviors*, *26*, 948-954.

*Huntley, E.D. & Juliano, L.M. (2012). Caffeine expectancy questionnaire (CaffEQ): Construction, psychometric properties, and associations with caffeine use, caffeine dependence, and other related variables. *Psychological Assessment*, *24*, 592-607.

*Harrell, P.T. & Juliano, L.M. (2012). A direct test of the influence of nicotine expectancies on the subjective and cognitive effects of smoking. *Experimental and Clinical Psychopharmacology*, *20*, 278- 286.

Juliano, L.M., *Huntley, E.D., & *Harrell, P.T., & *Westerman, A.T. (2012). Development and validation of the Caffeine Withdrawal Symptom Questionnaire. *Drug and Alcohol Dependence*, *124*, 229- 234.

*Anderson, B.L. & Juliano, L.M. (2012). Behavior, sleep, and problematic caffeine consumption in a college-aged sample. *Journal of Caffeine Research*, 2, 38-44.

*Harrell, P.T., Montoya, I.D., Preston, K.L., Juliano, L.M., & Gorelick, D.A. (2011). Cigarette smoking and short-term addiction treatment outcome. *Drug and Alcohol Dependence*, 115, 161-166.

Juliano, L.M., *Fucito, L.M., & *Harrell, P.T. (2011). The influence of nicotine dose and nicotine dose expectancy on the cognitive and subjective effects of cigarette smoking. *Experimental and Clinical Psychopharmacology*, 19, 105-115.

*Fucito, L. M., Juliano, L. M., & Toll, B. A. (2010). Cognitive reappraisal and expressive suppression emotional regulation strategies in cigarette smokers. *Nicotine & Tobacco Research*, 12, 1156- 1161.

*Harrell, P.T., & Juliano, L.M. (2009). Caffeine expectancies influence the subjective and behavioral effects of caffeine. *Psychopharmacology*, 207, 335-342.

*Anderson, B.L., Juliano, L.M., & Schulkin, J. (2009). Caffeine's implications for women's health and survey of obstetrician-gynecologists' caffeine knowledge and assessment practices. *Journal of Women's Health*, 18, 1457-1466.

*Fucito, L.M. & Juliano, L.M. (2009). Depression moderates smoking behavior in response to a sad mood induction. *Psychology of Addictive Behaviors*, 23, 546-551.

*Fucito, L.M. & Juliano, L.M. (2007). Effects of instructions on responses to the nicotine patch: a laboratory based study. *Psychopharmacology*, 194, 475-483.

Juliano, L.M., Houtsmuller, E., & Stitzer, M.L. (2006). A preliminary investigation of rapid smoking as a lapse-responsive treatment for tobacco dependence. *Experimental and Clinical Psychopharmacology*, 14, 429-438.

Juliano, L.M., Donny, E.C., Houtsmuller, E., & Stitzer, M.L. (2006). Experimental evidence for a causal relationship between smoking lapse and relapse. *Journal of Abnormal Psychology*, 115, 166-173.

Juliano, L.M. & Griffiths, R.R. (2004). A critical review of caffeine withdrawal: Empirical validation of symptoms and signs, incidence, severity, and associated features. *Psychopharmacology*, 176, 1-29.

Juliano, L.M. & Brandon, T.H. (2004). Smokers' expectancies for nicotine replacement therapy versus cigarettes. *Nicotine & Tobacco Research*, 6, 569-574.

Brandon, T.H., Herzog, T.A., Juliano, L.M., Irvin, J.E., Lazev, A.B., & Simmons, V.N. (2003). Pretreatment task persistence predicts smoking cessation outcome. *Journal of Abnormal Psychology, 112*, 448-456.

Herzog, T. A., Lazev, A. B., Irvin, J. E., Juliano, L. M., Greenbaum, P. E., & Brandon, T. H. (2002). Testing for group membership effects during and after treatment: The example of group therapy for smoking cessation. *Behavior Therapy, 33*, 29-43.

Juliano, L.M. & Brandon, T.H. (2002). Effects of nicotine dose, instructional set, and outcome expectancies on the subjective effects of smoking in the presence of a stressor. *Journal of Abnormal Psychology, 111*, 88-97.

Brandon, T.H., Collins, B.N., Juliano, L.M., & Lazev, A.B. (2000). Preventing relapse among former smokers: A comparison of minimal interventions via telephone and mail. *Journal of Consulting and Clinical Psychology, 68*, 103-113.

Brandon, T.H., Lazev, A.B., & Juliano, L.M. (1998). Very delayed smoking relapse warrants research attention. *Psychological Reports, 83*, 72-74.

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INVITED JOURNAL ARTICLES

Budney, A.J., Lee, D.C. & Juliano, L.M. (2015). Evaluating the validity of caffeine use disorder. *Current Psychiatry Reports, 17*, 1-6

Striley, C., Hughes, J.R., Griffiths, R.R., Juliano, L.M., & Budney, A.J. (2013). A critical examination of the caffeine provisions published in DSM-5. *Journal of Caffeine Research, 3*, 101-107.

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BOOK CHAPTERS

Sweeney, M. M., Juliano, L. M., Ferré, S., Griffiths, R. R. (2017, in press). The pharmacology of caffeine. In Miller, S. C., Fiellin, D. A., Rosenthal, R. N., Saitz, R., (Eds.) *The American Society of Addiction Medicine Principles of Addiction Medicine, Sixth Edition*. Philadelphia: Wolters Kluwer.

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Juliano, L.M. (2017). Caffeine withdrawal, caffeine use disorder. In Wenzel, A. (Ed). *Encyclopedia of Abnormal and Clinical Psychology, Vols 1-7*. Thousand Oaks, CA: SAGE Publications.

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Juliano, L.M., Ferre, S., & Griffiths, R.R. (2015). Caffeine: Pharmacology and clinical effects. *Principles of Addiction Medicine: The Essentials*. Baltimore: Lippincott Williams & Wilkins. (pg. 74-79).

Juliano, L.M., Ferre, S., & Griffiths, R.R. (2014). The pharmacology of caffeine. In Ries, R.K., Fiellin, D.A., Miller, S. C., & Saitz, R. (Eds.). *ASAM Principles of Addiction Medicine, Fifth Edition*. Baltimore: Lippincott Williams & Wilkins. (pp.180-200).

Juliano, L.M., *Anderson B.L, & Griffiths. R.R. (2011). Caffeine. In Lowinson, J.H., Ruiz, P., Millman, R.B., Langrod, J.G. (Eds.). *Substance Abuse: A Comprehensive Textbook, Fifth Edition*. Baltimore: Lippincott, Williams, & Wilkins. (pp. 335-353).

Juliano, L.M. & Griffiths, R.R. (2009). Caffeine-related disorders. In Sadock, B.J., Sadock, V.A., & Ruiz, R (Eds.). *Kaplan & Sadock's Comprehensive Textbook of Psychiatry 9th edition*. Baltimore: Lippincott Williams & Wilkins. (pp. 1296-1309).

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Griffiths, R.R., Juliano, L.M., & Chausmer, A.L. (2003). Caffeine pharmacology and clinical effects. In Graham, A.W., Schultz, T.K., Mayo-Smith, M., Ries, R.K. & Wilford, B.B. (Eds.). *ASAM Principles of Addiction Medicine, Third Edition*. (pp. 193-224).

Brandon, T.H., Juliano, L.M., & Copeland, A.L (1999). Expectancies for tobacco smoking. In I. Kirsch (Ed.), *How expectancies shape experience*. Washington D.C.: American Psychological Association. (pp. 263- 299).

INVITED TALKS

Juliano, L.M. (November, 2013). *Caffeine*. Andrews Air Force Base, Maryland.

Juliano, L.M. (September, 2013). *Caffeine and your genes*. The Scientist is In. Smithsonian Exhibit: Genome Unlocking Life's Code.

Juliano, L.M. (April, 2012). *Placebo effects in smoking and relapse processes*. National Center for Complementary and Integrated Health. Bethesda, MD.

Juliano, L.M. (January, 2008). *Women in science*. Women's Initiative. American University, Washington D.C.

Juliano, L.M. (November, 2007). *Caffeine*. Department of Defense Dietary Supplement Committee. Uniformed Services University of the Health Sciences, Bethesda, MD.

Juliano, L.M. (July, 2006). *Non-pharmacological motives for tobacco use*. World Conference on Tobacco or Health. Plenary session. Washington D.C.

Juliano, L.M. (April, 2006). *Disentangling pharmacological and non-pharmacological motives for smoking*. Department of Psychology. George Mason University, Fairfax, VA.

Juliano, L.M. (October, 2004). *Conditioning and extinction in nicotine and tobacco addiction*. Duke Nicotine Research Conference. Durham, NC.

Juliano, L.M. (July, 2004). *Reactions to cigarettes with and without nicotine*. Paper presented at the meeting of the American Psychological Association, Honolulu, HI.

Juliano, L.M. (May, 2004). *Disentangling pharmacological and non-pharmacological motives for smoking*. University of Pennsylvania. Philadelphia, PA.

Juliano, L.M. (August, 2002). *Anxiolytic effects of smoking: Partitioning nicotine and expectancies*. American Psychological Association. Chicago, IL. (Invited Awards Presentation)

Juliano, L.M. (May, 2002). *Effective smoking cessation: Special considerations for women*. GMBC Women's Health Conference. Greater Baltimore Medical Center. Baltimore, MD.

CONFERENCE POSTERS/PAPERS

*Burgower, R.R., *Murani, K., *Huntley, E.D., Gunthert, K.C. & Juliano, L.M. (October 2016). The effects of caffeinated energy drink use on sleep and mood among young adults. Poster presented at the Annual Meeting of the Association for Behavioral and Cognitive Therapies. New York, New York.

*Lotfalian, S., *Wiseblatt, A., Spears, C. & Juliano, L.M. (October 2016). A laboratory study of the effects of brief mindful breathing on cravings, affect, withdrawal and smoking behavior. Poster presented at the Annual Meeting of the Association for Behavioral and Cognitive Therapies. New York, New York.

*Anderson, B.L., *Raglan, G.B. & Juliano, L.M. (February 2015). Risk Perceptions, Smoking Status, and Numeracy. Presented at the annual meeting of the Society for Research on Nicotine and Tobacco, Philadelphia, PA.

*Papakonstantinou, M, *Muench, C. & Juliano, L.M. (February 2015). Smoking Outcome Expectancies among Menthol and Non-menthol Smokers. Presented at the annual meeting of the Society for Research on Nicotine and Tobacco, Philadelphia, PA.

Rojewski, A.M., Juliano, L.M. & Fucito, L.M. (February 2015). Smoking behavior in response to a mood induction: A comparison of menthol and non-menthol smokers. Presented at the annual meeting of the Society for Research on Nicotine and Tobacco, Philadelphia, PA.

*Muench, C. & Juliano, L.M. (February 2015). Negative affect and menthol status predict smoking lapse during a brief laboratory-based quit attempt. Presented at the annual meeting of the Society for Research on Nicotine and Tobacco, Philadelphia, PA.

*Das, B., *Ratner, T., & Juliano, L.M. (February 2015). A test of the role of motivation in smokers' subjective responses to placebo cigarettes. Presented at the annual meeting of the Society for Research on Nicotine and Tobacco, Philadelphia, PA.

*Ross, K., *Burgower, R., *Ratner, T., *Brugh, C., & Juliano, L.M. (February, 2014). Smoking through a topography device influences some aspects of smoking behavior and reward. Presented at the annual meeting of the Society for Research on Nicotine and Tobacco, Seattle, WA.

*Raglan, G.B., *Anderson, B.L., & Juliano, L.M. (March, 2013). Distress tolerance and smoking status: Difference between smokers, former smokers and never smokers. Presented at the annual meeting of the Society for Research on Nicotine and Tobacco, Boston, MA.

*Das, B. & Juliano, L.M. (March, 2012). Roles of nicotine and non-nicotine sensory stimuli in attentional bias and subjective effects of smoking. Presented at the annual meeting of the Society for Research on Nicotine and Tobacco, Houston, TX.

*Edwards, K. *Carlson, A., & Juliano, L.M. (August, 2011). The effects of smoking availability on urge, mood, and reaction time. Presented at the meeting of the American Psychological Association. Washington D.C.

*Anderson, B.L. & Juliano, L.M. (May, 2010). Caffeine consumption in a college population: A survey study about adolescent caffeine consumption, caffeine withdrawal, and behavior. Presented at the 22nd annual meeting of the Association for Psychological Science, Boston, MA.

*Harrell, P.T., *Zweber, Z, & Juliano, L.M. (March, 2010). Expectancy processes in the cognitive and subjective effects of nicotine. Paper presented at the annual Eastern Psychological Association conference. New York , NY.

*Notes L.D. & Juliano, L.M. (March, 2010) Examining the relationship among caffeine consumption, anxiety, anxiety sensitivity and caffeine expectancies. Presented at the 30st Annual Anxiety Disorders Association of America Conference, Baltimore, MD.

*Fucito, L. M., Juliano, L. M., & Toll, B. A. (February, 2010). *Emotion regulation strategies and cigarette smoking*. Presented at the 16th annual meeting of the Society for Research on Nicotine and Tobacco, Baltimore, MD.

*Harrell, P.T., *Zweber, Z., & Juliano, L.M. (February, 2010). Expectancy processes in the cognitive and subjective effects of nicotine. Presented at the 16th annual meeting of the Society for Research on Nicotine and Tobacco, Baltimore, MD.

*Ali, K., Juliano, L.M., & Robinson, L.A. (April, 2009). Gender differences in subjective reactions to cigarette smoke. Presented at the 15th annual meeting of the Society for Research on Nicotine and Tobacco. Dublin, Ireland.

*Harrell, P. T. & Juliano, L. M. (March, 2009). The impact of drug beliefs on drug outcomes using caffeine as a model. Presented at 80th Annual Meeting of the Eastern Psychological Association Pittsburg, PA.

*Anderson, B.A., Juliano, L.M., & Schulkin, J. (May, 2008). Review of decision making patterns of obstetricians and gynecologists. Presented at the 20th meeting of the Association for Psychological Science. Chicago, IL.

*Harrell, P.T. & Juliano, L.M. (May, 2008). Disentangling and pharmacological and expectancy effects of caffeine performance. Presented at the 20th meeting of the Association for Psychological Science. Chicago, IL.

*Moore, S. & Juliano, L.M. (May, 2008). Attentional bias to caffeine-related cues: The role of caffeine abstinence. Presented at the 20th meeting of the Association for Psychological Science. Chicago, IL.

*Anderson, B.A., Juliano, L.M., & Schulkin, J. (March 2008). Patient safety: A more difficult decision than we thought? Presented at the annual conference of the Eastern Psychological Association. Boston, MA.

*Fucito, L. M. & Juliano, L. M. (February, 2008). Smoking motivation in response to a negative mood induction. The roles of attentional bias, depression, and gender. Presented at the 14th annual meeting of the Society for Research on Nicotine and Tobacco, Portland, OR.

*Fucito, L.M., *Kardel, P.G., & Juliano, L.M. (November, 2007). Disentangling pharmacological and expectancy effects of nicotine. Presented at the 41st annual meeting of the Association for Cognitive and Behavior Therapies. Philadelphia, PA.

*Kardel, P.G., *Notes, L.D., & Juliano, L.M. (November, 2007). Disentangling pharmacological and expectancy effects of caffeine withdrawal: A work in progress. Presented at the 41st annual meeting of the Association for Cognitive and Behavior Therapies. Philadelphia, PA.

*Huntley, E.D. & Juliano, L.M. (May, 2007). Caffeine expectancy questionnaire construction: psychometric properties and predictive validity. Presented at the 19th annual meeting of the Association for Psychological Science, Washington D.C.

*Anderson, B.L. & Juliano, L.M. (May, 2007). Caffeine use and sleep habits of a college population. Presented at the 19th annual meeting of the Association for Psychological Science, Washington D.C.

*Fucito, L.M. & Juliano, L.M. (November, 2004). Do expectancies influence subjective and behavioral outcomes of nicotine patch use? A Work in progress. Presented at the 38th meeting of the Association for the Advancement of Behavior Therapy, New Orleans, LA.

Juliano, L.M. & Griffiths, R.R. (November, 2004). Empirical validation and clinical significance of caffeine withdrawal symptoms. Presented at the 38th meeting of the Association for the Advancement of Behavior Therapy, New Orleans, LA.

Brandon, T. H., Herzog, T. A., Juliano, L.M., Irvin, J. E., Lazev, A., & Simmons, V. N. (July, 2004). *Task-persistence as a predictor of smoking cessation outcome*. In M. L. Stitzer (chair), Smoking relapse: Predictors, mechanisms and treatment. Symposium presented at the meeting of the American Psychological Association, Honolulu. HI.

Juliano, L.M., Donny, E.C., & Stitzer, M.L. (July, 2004). *Prospective examination of the lapse-relapse association in smoking cessation*. In M. L. Stitzer (chair), Smoking relapse: Predictors, mechanisms and treatment. Symposium presented at the meeting of the American Psychological Association, Honolulu. HI.

*Richards, B.D., Juliano, L.M., & Griffiths, R.R. (June, 2004). Characterization of individuals seeking treatment for caffeine dependence. Presented at the 2004 Meeting of the College of Problems on Drug Dependence. San Juan, PR.

Griffiths, R.R. & Juliano, L.M. (June, 2004). Empirical validation and clinical significance of caffeine withdrawal symptoms. Presented at the 2004 Meeting of the College of Problems on Drug Dependence. San Juan, PR.

*Cohn, J., *Cobb, C., *Ali, K., & Juliano, L.M. (April, 2004). Reactions to cigarettes with and without nicotine. Presented at the 2004 meeting of the Western Psychological Association. Phoenix, AZ.

Houtsmuller, E., Juliano, L.M., & Stitzer, M.L. (February, 2004). *A novel lapse-responsive approach for smoking cessation*. Presented at the 10th annual convention of the Society for Research on Nicotine and Tobacco. Scottsdale, AZ.

Richards, B.D., Houtsmuller, E.J., Juliano, L.M., & Stitzer, M.L. (June, 2003). Withdrawal symptoms and smoking lapse: Relationship during the first two weeks after smoking cessation. Presented at the 2003 Meeting of the College of Problems on Drug Dependence. Bal Harbour, FL.

Klein, A.P., Juliano, L.M., Brune, K.A., Maitra, A. Lowenfels, A.B., & Hruban, R.H. (March, 2003). Comprehending high-risk individuals' perception of the risk for developing pancreatic cancer and the impact of cigarette smoking. Presented at the annual symposium of The Lustgarten Foundation for Pancreatic Cancer Research.

Juliano, L.M., Donny, E.C., & Stitzer, M.L. (February, 2003). Subjective and physiological reactions to smoking a nicotine or de-nicotinized cigarette after a brief period of abstinence. Presented at the 9th annual convention of the Society for Research on Nicotine and Tobacco. New Orleans, LA.

Juliano, L.M. & Stitzer, M.L. (June, 2002). Can smoking relapse be prevented after a lapse? Testing rapid smoking plus counseling as a novel lapse intervention strategy. Presented at the 2002 Meeting of the College of Problems on Drug Dependence. Quebec, Canada.

Juliano, L.M. & Stitzer, M.L. (February, 2002). An incentive based model of smoking cessation and relapse. Presented at the 8th annual convention of the Society for Research on Nicotine and Tobacco, Savannah, GA.

Juliano, L.M., Santa Ana, E., & Roitzsch, J.R. (March, 2001). Developing treatment strategies for nicotine dependent substance abusers in recovery. Presented at the 7th annual convention of the Society for Research on Nicotine and Tobacco, Seattle, WA.

Nath, V., Juliano, L.M., Lazev, A.B., Irvin, J.E., Stavros, R.A., Herzog, T.A., & Brandon, T.H. (November, 2000). Task persistence predicts success at smoking cessation. Presented at meeting of the Association for the Advancement of Behavior Therapy, New Orleans, LA.

Drobes, D.J., Myers, C.D., Juliano, L.M., Saladin, M.E., & Myrick, H. (February, 2000). Impact of divalproex on reactivity to smoking and affective picture cues. Presented at the 6th annual convention of the Society for Research on Nicotine and Tobacco, Arlington, VA.

Juliano, L.M. & Brandon, T.H. (November, 1999). An investigation of smoking's anxiolytic effects using the balanced placebo design. Presented at meeting of the Association for the Advancement of Behavior Therapy, Toronto, Canada.

Juliano, L.M., Rodriguez, A.M., & Brandon, T.B. (March, 1999). Smokers' expectancies for smoking and nicotine replacement products. Presented at the 5th annual convention of the Society for Research on Nicotine and Tobacco, San Diego, CA.

Brandon, T.H., Lazev, A.B., & Juliano, L.M. (August, 1998). Treating smokers prone to negative affect: Evidence across studies. Presented at the meeting of the American Psychological Association, San Francisco, CA.

Brandon, T.H., Collins, B.N., Juliano, L.M., & Lazev, A.B. (July, 1998). Preventing cancer by targeting smoking relapse. Presented at the 17th UICC International Cancer Congress, Rio de Janeiro, Brazil.

Herzog, T.A., Lazev, A.B., Irvin, J.E., Juliano, L.M., Stavros, R.A., & Brandon, T.H. (March, 1998). Does one bad apple spoil the bunch? An examination of group effects in smoking cessation treatment. Presented at the 4th annual convention of the Society for Research on Nicotine and Tobacco, New Orleans, LA.

Brandon, T.H., Collins, B.N., Juliano, L.M., & Lazev, A.B. (March, 1998). Reducing smoking relapse by mail. Presented at the 4th annual convention of the Society for Research on Nicotine and Tobacco, New Orleans, LA.

Brandon, T.H., Juliano, L.M., & Lazev, A.B. (March, 1998). Negative affectivity as a matching variable for smoking interventions. Presented at the Meeting of the Fifth International Congress of Behavioral Medicine, Copenhagen, Denmark.

Lazev, A.B., Juliano, L.M., & Brandon, T.H. (November, 1997). Effort training for therapeutic gain: A work in progress. Presented at the meeting of the Association for the Advancement of Behavior Therapy, Miami Beach, FL.

Brandon, T.H., Collins, B.N., Juliano, L.M., & Lazev, A.B. (November, 1997). Relapse prevention for ex-smokers: The Stay Quit Program. Presented at the meeting of the Association for Advancement of Behavior Therapy, Miami Beach, FL.

Brandon, T.B., Juliano, L.M., Copeland, A.M., Collins, B.N., Quinn, E.P., & Lazev, A.B. (March, 1997). Matching smokers to treatment based on negative affectivity. Presented at the Society for Behavioral Medicine's 1997 conference, San Francisco, CA.

Brandon, T.B., Collins, B.N., Copeland, A.L., Quinn, E.P., Juliano, L.M., & Lazev, A.B. (March, 1997). Negative affect induction enhances smoking urge and behavior. Presented at the Society for Behavioral Medicine's 1997 conference, San Francisco, CA.

Juliano, L.M., Copeland, A.B., Lazev, A.B., Collins, B.N., Quinn, E.P., & Brandon, T.B. (September, 1996). Smoking cessation for the negative affect prone: a treatment matching study. Presented at Addictions conference. Hilton Head, SC.

Juliano, L.M. & Brandon, T.H. (November, 1995). Cue reactivity to smoking availability and environmental stimuli in heavy smokers. Presented at the meeting of the Association for the Advancement of Behavior Therapy, Washington, D.C.

Matthews, A.K., Campos, P.E., & Juliano, L.M. (November, 1993). Development of standardized measures of breast cancer knowledge and attitudes. Presented at the meeting of the Association for Advancement of Behavior Therapy, Atlanta, GA.

*denotes student author

TEACHING

Undergraduate Courses

Psychology as a Natural Science/Introduction to
Psychology as a Natural Science Laboratory
Understanding Human Behavior/Introduction to
Psychology Drugs and Behavior
Abnormal Psychology and Society/Behavior Disorders
Psychology of Drug Dependence/Psychology of
Addictions Introduction to Clinical Psychology
Research Methods/Statistics/Behavioral Statistics
Health Psychology
Various Independent Study/Independent Reading Projects

Graduate Courses

Master's Thesis
Seminar
Psychological
Research Drug
Dependence Seminar
Greenberg Ph.D. Seminars for Effective Teaching

UNIVERSITY SERVICE

Departmental Service/Committees

Graduate Curriculum Committee (chair, member)
Clinical Advisory Committee (member)
Undergraduate Curriculum Committee (chair, member)
Merit Committee (member)
Human Subjects Committee (co-chair, member)
Career Night (organizer and presenter)
Graduate School Information Session (organizer and presenter)
Psychology Department Annual Open House Meet and Greet (organizer)
Ethics Comprehensive Exam (organizer)
Clinical Research Comp (organizer)
APA Reaccreditation Committee
Faculty Search Committee
Committee member for students' theses, dissertations and comprehensive exams
Undergraduate Psychology Major Advisor

University Service/Committees

Ad hoc faculty search committee, Public Health (AY 2015-2016)
Committee on Faculty Actions (AY 2015-2016)
Faculty Senate: Committee on Graduate Curriculum (AY 2013-2014; 2014-2015)
The Greenberg Ph.D. Seminars for Effective Teaching, Faculty Advisor (2011-2015)
Institutional Review Board, Backup Member (Spring 2010 – July 2013)
Committee on Learning Assessment, Member (Fall 2006-Fall 2010)
Family and Medical Leave Ad Hoc Committee, Member (Fall 2006-Spring 2009)
Pre-Medical Program Advisor (2006-2011)
Faculty Senate Committee on Information Services, Member (Spring 2004-Spring 2006)

PROFESSIONAL SERVICE

Appointed Advisor, DSM-5 Substance Use Disorders Workgroup (2011-2013)
Program Committee, Annual conference of the Society for Research on Nicotine and Tobacco (2005)
Program Committee, Annual conference of the Society for Research on Nicotine and Tobacco (2004)
Reviewer, National Cancer Institute Ad Hoc Scientific Review Committee (November, 2003)

Editorial Service

Associate Editor

Journal of Caffeine Research (forthcoming)

Editorial Board Member

Journal of Caffeine Research (2011-present)

Ad hoc Reviewer

Journal of Caffeine Research
Nicotine and Tobacco Research
Psychology of Addictive Behaviors
Psychopharmacology
Journal of Consulting and Clinical Psychology
Experimental and Clinical Psychopharmacology
Pharmacology, Biochemistry, & Behavior
Journal of Abnormal Psychology
Addiction
Physiology and Behavior
Health Psychology
Drug and Alcohol Dependence
Canadian Medical Association Journal
Journal of Psychopharmacology
Journal on Studies on Alcohol and Drugs

PROFESSIONAL ASSOCIATIONS

Society for Research on Nicotine and Tobacco
Association for Behavioral and Cognitive Therapies
American Psychological Association (Division 28)

MENTORING

<u>Students Former</u>	<u>Degree</u>	<u>Graduation Date</u>	<u>Current Position</u>
Lisa M. Fucito	Ph.D. (Clinical)	2008	Assistant Professor, Yale University School of Medicine
Paul T. Harrell	Ph.D. (BCAN)	2010	Assistant Professor, Eastern Virginia Medical School
Britta L. Anderson	Ph.D. (BCAN)	2011	Research Scientist, NORC at the University of Chicago, Washington, D.C.
Edward D. Huntley	Ph.D. (Clinical)	2012	Post-doctoral fellow, University of Michigan
Kathryn C. Ross	Ph.D. (BCAN)	2014	Post-doctoral fellow, University of California San Francisco
Babita Das	Ph.D. (BCAN)	2014	Post-doctoral fellow, University of Maryland
Christine Muench	Ph.D. (BCAN)	2015	Post-doctoral fellow, National Institute on Alcohol Abuse and Alcoholism, Bethesda MD
Greta B. Raglan	Ph.D. (Clinical)	2016	Post-doctoral fellow, University of Michigan, Ann Arbor, MI
Khatidja Ali	M.A. (Psychology)	2007	Veteran's Administration, Memphis Tennessee
Sarah Moore	M.A. (Psychology)	2007	Crisis Counselor, Cornerstone Montgomery, Bethesda, MD
Peter G. Kardel	M.A. (Psychology)	2010	Senior Associate, The Moran Company, Arlington VA
Lisa D. Notes	M.A. (Psychology)	2010	Towson University Counseling Center, Towson MD
Ashley T. Westerman	M.A. (Psychology)	2010	Adjunct Instructor
Rachel Burgower	M.A. (Psychology)	2014	Research Assistant, Mountain Manor Treatment Centers
Sadaf Lotfalian	M.A. (Psychology)	2015	Clinical Doctoral Student, Catholic University
Current			
Naomi Stahl	Ph.D. (Clinical)		
Tommy Gunawan	Ph.D. (BCAN)		
Kristina Murani	Ph.D. (Clinical)		

BCAN = Behavior, Cognition, and Neuroscience Doctoral Program

STUDENT COMMITTEE WORK

Student	Program	Advisor	Role	M.A. Defense	Ph.D. Defense
Doctoral Students under my Supervision					
Naomi Stahl	Clinical	Juliano	Chair	TBD	TBD
Tommy Gunawan	BCAN	Juliano	Chair	TBD	TBD
Kristina Murani	Clinical	Juliano	Chair	TBD	TBD
Greta Bielaczyz Raglan	Clinical	Juliano	Chair	Spring 2013	Fall 2016
Christine Muench	BCAN	Juliano	Chair	Spring 2014	Spring 2015
Babita Das	BCAN	Juliano	Chair	Fall 2011	Spring 2014
Kathryn Ross	BCAN	Juliano	Chair	Spring 2012	Spring 2014
Edward Huntley	Clinical	Juliano	Chair	Fall 2005	Fall 2011
Britta Anderson	BCAN	Juliano	Chair	Spring 2009	Spring 2011
Paul Harrell	BCAN	Juliano	Chair	Spring 2008	Spring 2010
Lisa Fucito	Clinical	Juliano	Chair	Summer 2005	Spring 2007
Master's Students under my Supervision					
Sadaf Lotfalian	M.A.	Juliano	Chair	Spring 2015	
Rachael Burgower	M.A.	Juliano	Chair	Fall 2014	
Peter Kardel	M.A.	Juliano	Chair	Spring 2010	
Lisa Notes	M.A.	Juliano	Chair	Spring 2010	
Ashley Westerman	M.A.	Juliano	Chair	Spring 2009	
Sarah Moore	M.A.	Juliano	Chair	Fall 2007	
Khatidja Ali	M.A.	Juliano	Chair	Spring 2007	
Other Graduate Students					
Carly Clayman	BCAN	Connaughton	Member		Ongoing
Samantha Schiavon	M.A.	Tubman	Member	Spring 2016	
Aria Ruggerio	M.A.	Gunthert	Member	Spring 2016	
Tim Regan	M.A.	Tubman	Member	Summer 2016	
Nora Stinley	BCAN	Norris	Chair		Fall 2014
Sarah Hornack	Clinical	Yates	Member		Summer 2014
Heather Whitney Price	Clinical	Gray	Member	Fall 2008	Fall 2011
Maria Thestrup	Clinical	Gunthert	Member		Summer 2011
Danyelle Mannix	BCAN	Yates	Member		Fall 2010
David McDonald	Clinical	Haaga	Member	Summer 2009	
Sam Huza	M.A.	Parker	Member	Summer 2008	
Kirsten McNelis	Clinical	Gunthert	Member		Summer 2008
Jermaine Jones	BCAN	Riley	Member		Spring 2008
Nicolas Forand	Clinical	Gunthert	Member	Fall 2006	
Richard Carley	Clinical	Carter	Member		Summer 2006
Adrienne Elliott	Clinical	Gray	Member		Summer 2005
David Kearns	BCAN	Riley	Member		Spring 2005
Victoria Coleman	Clinical	Carter	Member		Fall 2004
Greg Busse	BCAN	Riley	Member		Summer 2004

Karen Pescatore	BCAN	Riley	Member	Summer 2004	
Grace Fong	Clinical	Fantie	Member		Summer 2004
Ivana Grakalic	BCAN	Riley	Member		Spring 2004
Maria Gomez	BCAN	Riley	Member		Spring 2004
Gregory Simpson	BCAN	Riley	Member		Summer 2003
Meredith Fox	BCAN	Riley	Member		Summer 2003

Doctoral Students at Other Universities					
Hera Schlagintweit	Dalhousie University	Sean Barrett	Member		Spring 2017
John Lammers	USUHS Clinical	Andrew Waters	Member		Fall 2016
Chantel Meloscia	USUHS Clinical	Andrew Waters	Member	Fall 2014	Fall 2016
Nicole Kang	USUHS Clinical	Andrew Waters	Member		Spring 2016
Hoa Vo	University of Maryland Clinical	Barry Smith	Member		Spring 2008