

MEETING
STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT
ENVIRONMENTAL CONTAMINANT BIOMONITORING PROGRAM
SCIENTIFIC GUIDANCE PANEL

UNIVERSITY OF CALIFORNIA, DAVIS
PUTAH CREEK LODGE
DAVIS, CALIFORNIA

FRIDAY, MARCH 2, 2018
10:05 A.M.

JAMES F. PETERS, CSR
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A P P E A R A N C E S

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Carl Cranor, Ph.D., M.S.L.

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Marion Kavanaugh-Lynch, M.D., M.P.H.

Thomas McKone, Ph.D.

Penelope (Jenny) Quintana, Ph.D., M.P.H.

José R. Suárez, M.D., Ph.D., M.P.H.

OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT:

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Amy Dunn, M.P.H., Health Program Specialist, Safer Alternatives Assessment and Biomonitoring Section, Reproductive and Cancer Hazard Assessment Branch

Sara Hoover, M.S., Chief, Safer Alternatives Assessment and Biomonitoring Section, Reproductive and Cancer Hazard Assessment Branch

Duyen Kauffman, Health Program Specialist, Safer Alternatives Assessment and Biomonitoring Section, Reproductive and Cancer Hazard Assessment Branch

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH:

Kathleen Attfield, Sc.D, Research Scientist III, Exposure Assessment Section, Environmental Health Investigations Branch

Jianwen She, Ph.D., Chief, Biochemistry Section, Environmental Health Laboratory

A P P E A R A N C E S C O N T I N U E D

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH:

Nerissa Wu, Ph.D., Chief, Exposure Assessment Section,
Environmental Health Investigations Branch

DEPARTMENT OF TOXIC SUBSTANCES CONTROL:

June-Soo Park, Ph.D. Chief, Biomonitoring Branch,
Environmental Chemistry Lab

GUEST SPEAKERS:

Heather Arias, Chief, Community Planning Branch, Office of
Community Air Protection, California Air Resources Board

Victor De Jesús, Ph.D., Chief, Volatile Organic Compounds
Laboratory, Tobacco and Volatiles Branch, Centers for
Disease Control and Prevention

Yana Garcia, J.D., Assistant Secretary for Environmental
Justice and Tribal Affairs, California Environmental
Protection Agency

Ulrich Weeren, Studio Weeren

ALSO PRESENT:

Davis Baltz, Public Health Educator

Kristin Dortch, Project Officer, State Biomonitoring
Cooperative Agreement Grant, Centers for Disease Control
and Prevention

Walter Ham, Chief, Advanced Monitoring Techniques Section,
California Air Resources Board

Vernon Hughes, Chief, Community Assessment Branch, Office
of Community Air Protection, California Air Resources
Board

Tom Jacob, Chemical Industry Council of California

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1 P R O C E E D I N G S

2 MS. KAUFFMAN: Okay. It looks like everyone is
3 taking their seats, so we would like to begin shortly.

4 And just a few housekeeping notes. Today's
5 meeting is being streamed live over the web and recorded
6 on videotape. So please speak directly into the
7 microphone into the microphone, introduce yourself before
8 speaking, and turn off the microphone when finished. This
9 is for the benefit of people participating remotely, for
10 the audio and video crew, and for transcriber.

11 As a reminder, you should assume that you're
12 always on camera, and that anything you say may be
13 captured on a live microphone.

14 The materials for the meeting were provided to
15 SGP members and posted on the Biomonitoring California
16 website. A small number of copies of the meeting
17 materials are available at the table in the back of the
18 room.

19 We will break at 12:15 for lunch and take another
20 short break at about 4:30 p.m. The restrooms are located
21 in the open door there on the other side of the room. And
22 the emergency exits are here at the front and at the back.

23 And I neglected to introduce myself. I'm Duyen
24 Kauffman with the Office of Environmental Health Hazard
25 Assessment. And I would like to introduce Lauren Zeise,

1 Director of the Office of Environmental Health Hazard
2 Assessment.

3 DIRECTOR ZEISE: Good morning, everyone. And
4 welcome to this meeting of the California Environmental
5 Contaminant Biomonitoring Program, also known as
6 Biomonitoring California. So I want to, ahead of time,
7 thank everyone for coming, participating, and sharing
8 their expertise. We've got a full day of meeting ahead of
9 us. And so I'm just going to start with a few
10 announcements

11 So first, I'd like to say a special thank you for
12 Panel Member Oliver Fiehn for providing this lovely
13 setting for our meeting and also providing us coffee and
14 tea. Thank you very much. And also, thank you to
15 Jeannette Martins, your special assistant, for getting
16 this all set up. So very good.

17 MS. HOOVER: Closer to the mic.

18 DIRECTOR ZEISE: Into the mic. Okay.

19 Second, you'll recall at our meeting last March,
20 we celebrated the Biomonitoring California the 10th
21 anniversary. And so we've come to the end of the year,
22 and we'll be taking down our lovely 10th year logo. And
23 then over the next few months, we'll be -- we'll be
24 posting on the website pages of our accomplishments that
25 we shared with the Panel. So the end of our first, and

1 now we're looking forward to the next 10 years.

2 So then finally, we met -- the SGP met November
3 9th in Richmond. And I just want to give a brief recap of
4 the November 9th meeting. So the Panel received updates
5 from the Program about our California Regional Exposures
6 Study, the East Bay Diesel Exposure Project, and the
7 Program's environmental justice activities.

8 Then Dianna Rossi -- Deanna Rossi of Impact
9 Assessment, who's a contractor for -- was a contractor
10 with the Program reported back on listening sessions with
11 environmental justice organizations, and she's soon going
12 to be completing her report. And that will also be posted
13 on our website.

14 And then finally, we delved into environmental
15 justice and chemical hazard concerns in communities across
16 the State with leaders and -- representing the Center for
17 Community Action and Environmental Justice, Comite del --
18 Comite Civico Del Valle, Communities for a Better
19 Environment, and the Environmental Justice Coalition for
20 Water. And we posted a summary of the input received from
21 our guests, the Panel, and the public at the November
22 meeting on our meeting page, on the Program's website at
23 biomonitoring.ca.gov.

24 And so at this discussion in November, in part
25 inspired the afternoon session that we'll be hearing today

1 on community exposure to air pollutants. And we're really
2 looking forward to hearing in that session from our
3 colleagues at CalEPA, the CalEPA Environmental Justice and
4 Tribal Affairs Program, the California Air Resources
5 Board, the CDC. And so as part of this, we're going to be
6 discussing opportunities for collaboration and -- on
7 near-term and long-term projects.

8 So now, I'll turn the meeting over to the Panel
9 Chair, Meg Schwarzman.

10 Meg.

11 CHAIRPERSON SCHWARZMAN: Thank you, Lauren. And
12 it's nice to be here. It's nice to be here with all these
13 trees around us.

14 Is that okay?

15 All right.

16 So I want to just do a quick overview of the
17 meeting -- the plan for the meeting and our goals, and
18 then we'll move right into it. So the first thing that
19 we're going to do this morning is have updates -- Program
20 update and then laboratory updates. And then this
21 afternoon, we're going to have a special session on
22 community exposure to air pollutants and what the role of
23 biomonitoring is in that kind -- in assessing that
24 exposure.

25 So we'll have -- in that afternoon session, we're

1 going to have presentations by guest speakers from CalEPA,
2 from CARB, and from the CDC. We'll also have an open
3 discussion of -- to generate ideas about how Biomonitoring
4 California can engage with communities that are
5 disproportionately affected by air pollution, how
6 Biomonitoring California can generate data that will
7 support the efforts to reduce air pollutant exposures, and
8 contribute to the implementation of CARB's new community
9 air protection program that was established under Assembly
10 Bill 617.

11 In that discussion, we hope to identify
12 recommended next steps for the Program -- that the Program
13 can take to help advance those priorities. So that will
14 be the afternoon session.

15 And then we'll close with a demonstration of, and
16 a chance to provide input into, a new website feature
17 that's currently under development. And that feature is
18 aimed at increasing the awareness of Biomonitoring
19 California's findings, and the -- OEHHA is looking for
20 input into that.

21 So that's an overview of what we're doing today.
22 If you wish to comment on a specific item of today's
23 meeting, you can fill out a comment card that Duyen has in
24 the back. And if you're joining the meeting via webcast,
25 the way to do that is through email.

1 Biomonitoring@OEHHA.ca.gov, and we will check for email
2 comments during our comment sessions.

3 So comments that are submitted by email that are
4 relevant to the topic under discussion we'll read those
5 aloud during the meeting, paraphrasing them as necessary
6 when there's time constraints. And we'll just ask you to
7 keep comments sort of calibrated to the time allotted.

8 So now, I'd like to introduce Nerissa Wu, there
9 she is. Nerissa is Chief of the Exposure Assessment
10 Section at CDPH and she is overall lead for Biomonitoring
11 California. And she's going to give us an update on
12 current Program activities.

13 DR. WU: Good morning, everybody.

14 Hello. Good morning, everybody. Glad everyone
15 has made it here. I barely made it through the parking
16 lot to get here on time.

17 (Laughter.)

18 DR. WU: So I am going to start with a quick look
19 at -- loading.

20 Okay.

21 (Thereupon an overhead presentation was
22 presented as follows.)

23 DR. WU: -- a quick look at our Program budget.
24 You have seen this graph before, and you've heard the
25 story before. We have talked over the last couple years

1 about limited term positions, and how our budget has been
2 pieced together through budget change proposals, and that
3 eventually these limited term positions would come to an
4 end at the end of fiscal year 17-18.

5 Well, that time is pretty much now. And by the
6 time you see us next, we'll be in the next fiscal year,
7 and these limited term positions, the staff and associated
8 budget, will have decreased. We do have a lab update
9 coming up after I speak, and our lab directors will be
10 talking a little bit more about the specifics of how that
11 affects the Program's ability to do our work.

12 --o0o--

13 DR. WU: But I am going to talk a little more
14 about what we have -- some active projects we have going
15 on right now. There's a lot of activity. I'm going to
16 start with the Northern California firefighting study.
17 This is not something we've talked about in this forum
18 before, because it's a project that came on us very
19 suddenly.

20 This was in response to the fires in Napa,
21 Sonoma, and Mendocino County in October. There's a lot of
22 concern, both in California and elsewhere, about the
23 exposures that firefighters are subject to in the line of
24 their duties. This particular fire, because of the
25 intensity and the duration, and because firefighters went

1 out to this wildfire wearing outdoor gear. No
2 respirators, not their usual suits that they wear for
3 urban building fires. And then they were encountered by
4 vehicle fires, buildings, industrial and commercial
5 complexes going up in flames.

6 We've also all seen pictures of firefighters
7 having worked 24 or 48 hours at a stretch, you know,
8 sleeping and eating in their gear. So there are lots of
9 opportunities for unique chemical exposures that we're
10 really concerned about.

11 So we wanted to try to assess this exposure.
12 And, of course, it takes awhile to get a plan together and
13 a protocol approved. But in collaboration with UC
14 Berkeley, with Rachel Morello-Frosch's group, Commonweal,
15 and the San Francisco Firefighter Cancer Prevention
16 Foundation, led by Tony Stefani, we were able to get an
17 amendment on an existing protocol together, and get out
18 into the field within five weeks of the fires.

19 We were able to collect 180 samples. And these
20 are from firefighters from the San Francisco, Santa Rosa,
21 and Santa Clara Fire Departments, most of whom were
22 deployed in Santa Rosa and the surrounding area, and some
23 of whom were back at their home departments just doing
24 their regular firefighting work.

25 So we have samples collected, our labs are

1 working doing metals analysis right now on those samples,
2 and we're adding on a subset we'll take a subset of those
3 samples and look at POPs and hopefully PFASs. And we
4 would like to do much more analysis on these samples. We
5 do have whole blood, serum, urine, and buffy coat for all
6 180 of these firefighters. So as resources allow, we
7 would like to -- we would like to continue to explore what
8 The exposures might have been.

9 And one of the things that we've been talking
10 about in the collaborative is, you know, five weeks is
11 actually a very short period of time to get a study
12 together. But in terms of metabolic time, it's quite a
13 long time, and there are lots of things we won't be able
14 to look at because five weeks have gone by and many of the
15 chemicals have already metabolized.

16 So we've been talking about the need for kind of
17 an emergency response IRB protocol where we have the tools
18 ready to go in after a fire or other emergencies and get a
19 protocol set ahead of time, so we can get into the field
20 more quickly. And unfortunately, there will be another
21 fire season in California. These wildland and urban
22 fires, the two mixed together are becoming more and more
23 common. So likely, we'll have another situation like this
24 at some point, and we would like to be prepared to do some
25 biomonitoring in those cases.

1 --o0o--

2 DR. WU: So the East Bay Diesel Project is
3 another thing we have going on. This is the study -- you
4 heard about this in quite a bit of detail in November.
5 This is looking at levels of 1-nitropyrene, the biomarker
6 of diesel exposure in child and adult pairs, 50 households
7 in the East Bay.

8 The project has launched. They recently -- they
9 got their IRB approval both from the State and UC Berkeley
10 IRBs in November, and recently actually got approval to
11 increase the incentive to participants from \$40 to \$80,
12 which is great.

13 They are working with West Oakland Environmental
14 Indicators Project to recruit participants, tabling at a
15 number of community events. And I believe they have 10
16 household pairs recruited. I saw Duyen with samples, so
17 we have samples being collected. And if you have more
18 questions about that, Duyen, and Russ, and Sara are here
19 and can come up and answer specific questions.

20 --o0o--

21 DR. WU: And then we have the CARE Study, the
22 California Regional Exposure Study. And over the last
23 year, we have spent a lot of time talking about the
24 protocol, and how we should plan it, and projecting how
25 things would go. But now we're live in the field. And so

1 I'm very happy to be able to provide some actual real
2 information about what's happening in the field, and also
3 highlight our participant management and participant
4 proto -- portal online, which is something that is now
5 available.

6 So just a reminder of what the CARE Study is.
7 This is our statewide biomonitoring effort, the California
8 Regional Exposure Study.

9 Thank you.

10 --o0o--

11 DR. WU: We have broken California -- because
12 it's so gigantic, we've broken it into, eight different
13 regions, and we'll be biomonitoring region by region
14 approximately one per year, recruiting 300 to 500
15 participants per region. We'll be biomonitoring for
16 metals and the per- and polyfluoroalkyl substances in each
17 of those regions, and hoping to add on -- add on an
18 analyte -- analytical panels as we go.

19 So we're in region 1, Los Angeles County, right
20 now. And we're very fortunate, we have the funding this
21 year to include 1-nitropyrene the biomarker of diesel
22 exposure for 150 of those samples. So we're committed to
23 doing that for Region 1. Hopefully, we'll be able to do
24 that in the future, and we're still looking at the
25 potential to add on other panels.

1 --o0o--

2 DR. WU: The overall participant flow, we have
3 discussed in the past. But just briefly, we do our
4 recruitment in a number of ways, which I'll talk about
5 momentarily. And interested people fill out a
6 pre-screening survey, which is basic demographic
7 information and eligibility criteria. And if you're
8 eligible, you go into what we call the pre-screening pool.

9 Then we sample from that pre-screening pool,
10 which enables us to control the demographics of the study
11 population a little bit. And from that point on, whether
12 you're an internet participant doing this online or a
13 paper participant filling out forms on paper, your
14 experience is a little bit different. But basically all
15 participants fill out a consent form and an exposure
16 survey, and then make an appointment to have their samples
17 collected.

18 --o0o--

19 DR. WU: So we formally started recruitment on
20 January 8th. We sent this postcard out to 65,000
21 households across Los Angeles County. We went to a number
22 of different community events, tabled at a number of
23 health fairs, organizational meetings. We posted the site
24 on craigslist. And we had a lot of incoming pre-screening
25 surveys almost immediately, coming in over the internet,

1 but also people calling in to fill it out, and filling it
2 out on paper at different meetings, so coming from a
3 variety of places.

4 And we had enough interest that we did our first
5 data pull for participants on January 18th. And
6 subsequently, we -- every seven to 10 days, we do another
7 data pull.

8 --o0o--

9 DR. WU: So the process is slightly different for
10 participants, whether they selected to participate on
11 paper or on the internet. If you are a paper participant,
12 we send you that -- this packet.

13 --o0o--

14 DR. WU: And I actually have a packet here, if
15 anyone wants to take a look at our materials. The packet
16 is sent out, and this has the informed consent, the
17 exposure survey, and information about the study. And
18 seven to 10 days after we send that out, we give you a
19 phone call. Welcome to the study. Hope you got our
20 packet. Maybe get some feedback about whether the
21 participant is planning to send that back. And it's a
22 little bit of a reminder to get that packet back to us.

23 Once they send us back the informed consent, and
24 the exposure survey, we review it to make sure that the
25 informed consent -- the boxes are checked off, it's

1 signed, the exposure questions have been answered. And
2 then we make a phone call back to the participant, we
3 might have them complete some of the information they've
4 left out. And then we schedule an appointment for them to
5 show up and give us their blood and urine sample.

6 --o0o--

7 DR. WU: On the internet, it's quite different.
8 So an internet participant would get this welcoming email
9 saying click here to activate your account.

10 --o0o--

11 DR. WU: Once they have their account, it's set
12 up so that the step -- the three steps of participation
13 are very clearly outlined. And only the step that they're
14 on is highlighted and enabled for clicking. So they go in
15 the correct order that we want them to.

16 So here they're able to collect on step one,
17 which is to sign the informed consent form. This is
18 enabled by DocuSign, which is an online app, so you can
19 sign this right online, and as you submit it --

20 --o0o--

21 DR. WU: -- it enables step 2 which is to go in
22 and sign your: -- to fill out your exposure survey.

23 --o0o--

24 DR. WU: Once you submit the completed exposure
25 survey, step 3 is enabled, and then a participant could go

1 to this list of dates and sites and select a place where
2 they want to come give their sample.

3 --o0o--

4 DR. WU: Once they have selected a site, this
5 dropdown menu of available appointment slots opens up, as
6 well as a map showing them exactly where the appointment
7 is, maybe a little bit of information about where the --
8 you know, how to get into the building, stuff like that.
9 And then they select an appointment, and they get a
10 confirmation email. And they've completed steps one
11 through three without actually having interacted with the
12 staff. It's very streamlined. And we have found that
13 internet participants tend to activate their account and
14 go right through very quickly. They're not dropping out,
15 because it's very streamlined.

16 --o0o--

17 DR. WU: On the staff side, this application
18 allows us to track individual participants so we can
19 easily address somebody's questions or their needs if they
20 need to cancel an appointment, or they're having trouble
21 with their account. We can also track the overall
22 participant flow, so we can see are people dropping out at
23 a certain stage, are they getting stuck? And there's an
24 automated reminder system, so if somebody fills out their
25 exposure survey, but they haven't made an appointment, the

1 system will trigger a reminder to say remember to go back
2 in and get to your next step. If they're not on the
3 internet, we get a flag and we know to call them and
4 remind them to keep going in the study.

5 --o0o--

6 DR. WU: This also helps us monitor the need for
7 field staff. We can look at an appointment date and say,
8 well, we have six people coming at a certain time for
9 blood draws, and it helps us staff those appropriately.
10 And it helps us manage the samples. They're all bar
11 coded. We can scan the bar codes into the system, and
12 then their samples are associated with a participant ID,
13 and can be tracked to the system from the freezer in our
14 field office all the way through to the point where
15 they're sent up to the lab. So it really facilitates
16 staff tracking of the whole process.

17 --o0o--

18 DR. WU: So how is everything going?

19 We sent out 65,000 postcards. As we've talked
20 about, this was one of those bulk mail postcards. So in
21 the big pile of newspapers and Safeway ads and everything,
22 it's one of those pieces of mail. So we didn't expect a
23 huge response rate. We got 158 -- 158 people responding
24 to the pre-screening listed the mailed postcard as their
25 source of information, which is a pretty low percentage.

1 It's 0.24 percent. So maybe not the most cost-effective
2 method, but actually it -- it is reaching, we think, a
3 group of people that maybe other recruitment efforts are
4 not reaching. And at 158 people, it's actually sort of a
5 significant portion of our pre-screening pool at this
6 point.

7 As we continue to recruit with other means,
8 that -- its significance may go down. But right now,
9 we're still looking at it to see are these post cards
10 reaching different demographics? But also do these
11 participants that are returning the postcard, are they
12 somehow different? Are they more invested? Are they
13 making it into the study and actually making it to the end
14 of the study in a way that's different from participants
15 that we reach through other means.

16 Some other top recruitment methods. We have
17 targeting outreach, which is -- targeted outreach, which
18 is going to community groups, and doing tabling, or
19 speaking at an event. And we found that this -- this
20 accounted for 25 percent of our recruitment to the
21 pre-screen.

22 Craigslist got us an additional 20 percent of our
23 pre-screener. And Craigslist is a very inexpensive easy
24 way to reach people. But again, we really want to look at
25 this data and see who is that reaching? Is it -- is it a

1 distinct demographic population. And also, are the
2 Craigslist people following through, enrolling in the
3 study, and reaching the end of the study, similar to other
4 recruited methods. So this is a lot of analysis that has
5 to be done once we get to the end of recruitment.

6 --o0o--

7 DR. WU: Once we have our pre-screening, we have
8 this rolling selection process. And it does take race and
9 ethnicity and where you live in L.A. County into account,
10 because we're trying to -- to be representative of the
11 entire county.

12 Once we invite people into the study, are they
13 actually enrolling? Well, as you see here, the internet
14 participants actually are enrolling at quite a high rate,
15 over 60 percent, which is great.

16 The paper participants, there are many more
17 opportunities to lose a paper participant, so that
18 enrollment rate is a little bit lower, 37 percent. So our
19 overall enrollment rate is at 56 percent, which is really
20 not bad for a study, but it does mean that we need a lot
21 more people in our pre-screening pool in order to meet our
22 enrollment goals.

23 --o0o--

24 DR. WU: So where are we now, or where were we on
25 Tuesday. This number keeps changing. We have gotten over

1 500 people into the pre-screening pool. We've invited 317
2 of them in to participate, and 179 of them have activated
3 their account or sent us their informed consent, or have
4 done something to indicate that they want to be in the
5 study.

6 And as I said before, the internet people, for
7 the most part, once they activate their account, they're
8 going through to the point of scheduling. We don't know
9 if they'll show up for their appointment yet, but we have
10 collected -- at this point, we're at 63 samples. This
11 number has been updated since Tuesday.

12 And we have not seen a lot of people withdrawing
13 for this -- from this study or not showing up to their
14 appointments. We have a very robust reminder system. Not
15 only are you getting reminders to continuing onto the
16 study, but if you have an appointment, you get a phone
17 call or an email one to two days before your appointment
18 to remind you to please show up, or if you need to, to
19 reschedule.

20 If people can make it to their appointment, we do
21 have the option of home visits. So we are trying to make
22 this as convenient for people as possible. And I think
23 that is partly why we have a low withdrawal rate so far.

24 --o0o--

25 DR. WU: Whoops.

1 AGP VIDEO: Is that your last slide?

2 DR. WU: No it's not.

3 AGP VIDEO: You must have hit the blackout
4 button.

5 DR. WU: I didn't realize there was a blackout
6 button.

7 (Laughter.)

8 AGP VIDEO: That's fine. That's all right.

9 --o0o--

10 DR. WU: So lessons learned so far. Well, we do
11 need to do more recruitment. We need more numbers. We
12 also need to reach out to a more diverse population.
13 About 30 percent of respondents have opted to receive
14 their study materials on paper, which was a little
15 surprising. I guess I assumed it would be a little bit
16 lower than that, because I'm an internet user. But the
17 response and completion rates are much better for the
18 internet participants.

19 So I think in the future, we might think of maybe
20 wording our -- when we ask people how do you want to
21 participate in this study, making it a little more clearer
22 what the two pathways entail, because some of the people
23 may have ended up in paper, because they didn't understand
24 the question. Still analysis to come.

25 But once they're enrolled, the participant drop

1 rate -- dropout rate is low. So we're doing pretty well
2 in terms of collection of our samples.

3 --o0o--

4 DR. WU: As far as what we'll be doing over the
5 next six months or so, well, we are in the field until
6 late May, early June. We expect to start getting metals
7 results on a rolling basis, so we may start doing
8 notification of elevated metals levels this spring. But
9 then the results return packets for PFASs and metals will
10 be going out towards the end of 2018.

11 In the meantime we are starting to look towards
12 Inland Valley, which is Region 2, starting to make those
13 community connections, and work with organizations to get
14 set up for Region 2. And we anticipate our initial field
15 work will begin in January 2019.

16 --o0o--

17 DR. WU: So as I end, I just want to acknowledge
18 the Biomonitoring staff. They're all working like crazy.
19 This is a lot of work between all of these studies to get
20 these launched and into the field. People are working
21 really hard, whether it's preparing sample media or, you
22 know, working SAS Code all night. And, you know, it's
23 really great to the see rewards of their work and to be
24 able to report out some of this to you.

25 CHAIRPERSON SCHWARZMAN: Great. Thank you,

1 Nerissa. So we have 10 minutes right now for Panel
2 questions. And just as a reminder, we have a full
3 25-minute discussion session after we hear lab updates.
4 So this is really a chance for clarifying questions for
5 Nerissa.

6 Yeah, Jenny.

7 PANEL MEMBER QUINTANA: Hi. I have a couple
8 questions, I guess, linking your -- one of your first
9 slides about the budget with the last slides about the
10 study. And what provisions are you making to collect
11 multiple sample types, and different kinds of tubes, and
12 archive them in conjunction with consent forms that allow
13 for further analyses later on, if these participants have
14 automatically consent to that or do they have an option of
15 consenting to future analyses? So that's my first
16 question.

17 DR. WU: Okay. Our consent form, which is pretty
18 standard for a Biomonitoring California study, is, first,
19 consent to participate in this parent study, and then
20 there's a box to donate your samples for further analysis.
21 We call out the PFAS and metals analysis as things that
22 you know you're getting. But if people check the box to
23 donate their samples for further analysis, then they go
24 into the pool for anything else that we might add on.
25 We're very specific that those are environmental

1 contaminants and that they will not include
2 pharmaceuticals or medical-related analyses, but that it
3 really is -- we're looking at specifically environmental
4 contaminants.

5 I think we usually get most people checking that
6 box off, maybe 75 percent of participants. So we should
7 be able to do -- we should be able to have a robust
8 archive of samples from this. We do have -- we are
9 getting enough urine. We're working out the aliquoting
10 sequence right now, but we will have aliquots set aside
11 for maybe two or three additional panels, if we're able to
12 do that.

13 PANEL MEMBER QUINTANA: And I also had a
14 question. I know you went over this in November, but what
15 were the targets for race, ethnicity, and income? Were
16 they based on the census data from the region?

17 DR. WU: L.A. County, um-hmm.

18 PANEL MEMBER QUINTANA: And how well of your
19 first set of participants -- you didn't break it down by
20 some of those variables at this point?

21 DR. WU: We are trying to match L.A. County by
22 race and ethnicity. There's a limit to the number of
23 strata we can include, just given the number of samples we
24 have. So what we're looking at is -- we're looking at
25 demographic -- oh, I'm sorry, geography for the first

1 thing. We're -- L.A. county is broken down to service
2 provider areas - there are eight of those - and then race
3 and ethnicity. And then sex is the third strata we're
4 looking at.

5 But even between just three strata, that's 80
6 bins that we're trying to fill with a prescribed amount.
7 We are looking at the data with a lens of socioeconomic
8 class just to -- just to see how we're doing, but we can't
9 really do targeted recruitment over more than three
10 strata.

11 As far as how we're doing, you know, I think our
12 demographics so far are skewing towards highly educated
13 and white, which is a problem. We have been trying really
14 hard to reach out to community groups to try to boost our
15 enrollment in different communities. It has been a
16 challenge, and we put a lot of effort into making this
17 linguistically accessible to people, and we really just
18 have not had uptake in those things.

19 We -- our materials are available in 10 different
20 languages. And we have some Spanish participation, but
21 it's fairly low. We have Chinese, Vietnamese, and Korean
22 participation, but again fairly low.

23 PANEL MEMBER QUINTANA: Have you --

24 DR. WU: Actually, Kathleen it's -- Kathleen has
25 been doing our sampling. She might be able to address

1 this question.

2 DR. ATTFIELD: Hi. Kathleen Attfield. I'm one
3 of the epidemiologists in EHIB, in the Biomonitoring
4 Program.

5 So as Nerissa was talking about, we have these 80
6 bins that we're considering how people fall into them, and
7 filling them up, and giving a bit of a buffer for
8 overfilling. And our race/ethnicity breakdowns are
9 Hispanic or Latino, white, Asian, black or
10 African-American and then an other category. And we are
11 oversampling in the black or African-American category and
12 in the other category.

13 And I just want to add a little to what Nerissa
14 said. While our Spanish speaker, like exclusive Spanish
15 speaker, participation is low, we do have a fair number of
16 Hispanic and Latino identifying people in the pool. I'm
17 just going to be talking from our invited numbers, not,
18 you know, the people who have made it all the way through
19 the pipeline at the moment.

20 So I don't know how much detail you would like me
21 to go into. Does that start to get at your question?

22 CHAIRPERSON SCHWARZMAN: If I could add, because
23 I had the question that Jenny did. Is there anything us
24 you could say about who you're missing?

25 DR. ATTFIELD: Well, I think Nerissa has pretty

1 much tackled a lot of that. We are skewing towards the
2 more highly educated end of the spectrum. Our, you know,
3 other categories, smaller racial categories, are low. But
4 again, that's hard to put targets on those, because if we
5 did it completely according to demographic breakdowns in
6 L.A., we'd have two people, you know, out of the 500. You
7 know, so we're already oversampling in that category.

8 The Hispanic or Latino targets would be about 220
9 of our participants. So that is a sort of lower
10 populating category that -- it would be good to have more
11 participants and more people coming into the pre-screen
12 pool.

13 CHAIRPERSON SCHWARZMAN: Thank you.

14 Yeah, Jenny.

15 PANEL MEMBER QUINTANA: Just a quick follow-up
16 question. Could you briefly comment on the types of
17 community groups and events that you -- where you have
18 conducted outreach? And have you had conversations about
19 including those. For example, do you do that to PTAs?
20 Parents tend to be fairly involved participants.

21 DR. ATTFIELD: I'm not as actively involved in
22 that, so I will punt that back to Nerissa.

23 DR. WU: We have not worked with the PTA. We
24 have worked with mostly community environmental groups.
25 And then groups like PSR-LA, and we've worked through some

1 of the universities. There's a long list of people that
2 we've conducted and a different range of outreach. There
3 are some people who have been very actively partnering
4 with us, and others who have just -- who have worked with
5 us just to blast out an email, that kind of work.

6 So, I mean, clearly, we need to do more. And I
7 think there are lots of reasons why we're not seeing the
8 kind of participation we'd like. So it is -- it's
9 something that's a priority for us to address in the
10 coming month.

11 CHAIRPERSON SCHWARZMAN: Nerissa, are you already
12 working with Black Women For Wellness.

13 DR. WU: We are, yes.

14 CHAIRPERSON SCHWARZMAN: Okay.

15 Tom has a question and then Mel.

16 PANEL MEMBER MCKONE: So one of the things in a
17 lot of surveys and questions how you ask the question is
18 very critical. And I don't know if there's been any
19 effort to look at your question. I mean, it sounds like
20 the question is -- around like are you worried about
21 chemicals in your body? And they may actually resonate in
22 certain -- you know, more educated people might respond
23 more to that.

24 DR. WU: Sure.

25 PANEL MEMBER MCKONE: And then you might want to

1 just see if there's a way of phrasing that question that
2 addresses the community. I know this from the Air
3 Resources Board, in dealing with climate change, found out
4 that you can't -- that communities are very responsive to
5 the word "climate change", and others are more responsive
6 if you frame it around community health or air quality.

7 I mean, it's the same issue, but it's how you
8 present it. How you approach it is kind of critical to
9 the response you get.

10 DR. WU: Sure, definitely. We did run a lot of
11 our materials by focus groups, both in English- and
12 Spanish-speaking groups. And I think the postcard -- just
13 speaking about the postcard itself what that one line is
14 kind of -- what we're trying -- counting on to draw people
15 in. The postcard has very little information on it. And
16 one of the feedbacks we got was, you know, I don't know
17 what this is about. I can't tell if this is something I'm
18 interested in.

19 So we are looking at, you know, for future
20 regions and also for continued recruiting now is using the
21 flier more heavily, which has a little more detail about
22 what we're talking about. It's a difficult balance
23 between brevity and getting something out that people will
24 actually read and having enough content, so that people
25 are attracted to participate in it.

1 CHAIRPERSON SCHWARZMAN: Mel, go ahead. And just
2 turn on the button on the riser.

3 PANEL MEMBER KAVANAUGH-LYNCH: One option I was
4 wondering about, since the people who are signing up
5 online have a better completion and follow-through rate,
6 at least preliminarily, have you considered at your
7 community meetings, like bringing iPads and signing people
8 up immediately there, so that they can get through the
9 whole process?

10 DR. WU: Yes. Well, we -- people can't sign up
11 immediately to the study right now. We do have electronic
12 devices and paper for people to do the pre-screening
13 right -- right there while we're there. And we have been
14 able to get people into the pre-screening that way. We
15 haven't really gotten to the point where we're actually
16 just enrolling people straight off. We're still working
17 this two-stage recruitment, where we want them in the
18 pre-screening, and then control the selection of those
19 participants.

20 And that may change over time. I mean, as we get
21 towards the end of the study, we may start opening it up
22 more fully towards anyone who wants to sign up. I don't
23 know if that's -- if that's where we'll go. But if we get
24 to a point where we are not going through that two-stage
25 process, then sure we could -- we would definitely be out

1 in the field with help enabling people to sign up.

2 CHAIRPERSON SCHWARZMAN: Thank you so much,
3 Nerissa. I think we'll move on to our next presentations,
4 and we can return to these discussions in our session
5 after the lab updates.

6 So I want to introduce our next two speakers.
7 Dr. Jianwen is Chief of the Biochemistry Section in the
8 Environmental Health Laboratory Branch at CDPH. And Dr.
9 June-Soo Park is Chief of the Biomonitoring Branch in the
10 Environmental Chemistry Lab at DTSC. And together, they
11 will provide lab updates.

12 And then as a reminder, we have 25 minutes to
13 continue the discussion after these two presentations.

14 (Thereupon an overhead presentation was
15 presented as follows.)

16 DR. SHE: Good morning and welcome members of the
17 Panel and audience. I'm Dr. Jianwen She, Chief of the
18 Biochemistry Section of the Environmental Health
19 Laboratory Branch.

20 --o0o--

21 DR. SHE: Today, I will provide the update for
22 EHL.

23 This include: Some recent staff changes, method
24 updates, completed test, ongoing projects, recent
25 publications, and finally our future and pending work.

1 --o0o--

2 DR. SHE: First, I would like to take the
3 opportunity to congratulate and welcome a few new visiting
4 scholars. Mr. Lu. Mr. Lu is from China CDC, and Dr. Sun
5 is from Beihang University. And Dr. Chunhua Wu is from
6 Fudan University. Mr. Lu and Dr. Chunhua Wu is in the
7 audience.

8 Thank you.

9 These visitors are here to learn about our new
10 method, and they will help us to restore some of the
11 methods, such as the PAH method, develop the program's
12 capability for monitoring diesel biomarker, and work on
13 untargeted analysis.

14 We recently lose the two highly valued
15 scientists. I'd like to thank Dr. Rana Zahedi for her
16 nine years of indispensable work with Biomonitoring
17 California, most notably optimizing and creating a
18 perchlorate and phthalate method. And also, Dr. Yu-Chen
19 Chang for her work on non-targeted analysis and help with
20 the phthalate method.

21 --o0o--

22 DR. SHE: Since last SGP meeting, we have added
23 cotinine in serum to our panels, expect -- expanded our
24 environmental phenol panel to include BPA analogs, and
25 purchased new instruments for metal analysis in the

1 perchlorate analysis.

2 --o0o--

3 DR. SHE: This table is compare our cotinine's
4 method performance with geometric mean of a study carried
5 out by NHANES and also 95th percentile. So you can see
6 our detection limit at 0.015 is capable to measure
7 non-smoker exposure to the tobacco. So the geometric mean
8 0.041 is CDC for the non-smoker -- mean non-smoker
9 persons.

10 --o0o--

11 DR. SHE: We also added BPA analog, BPF, BPS, and
12 triclosan. Similarly, they are compared with geometric
13 mean and the linear range and the 95th percentile in the
14 general population. So the detection limits is well below
15 or within the lower range of the geometric mean reported
16 by CDC. So we believe both methods can be used for the
17 real sample test.

18 --o0o--

19 DR. SHE: We also purchased a new instrument 8900
20 ICP-MS to allow us to improve our throughput since we can
21 concurrently run blood and urine sample on two different
22 machines. At the same time for some metals, you can see
23 marked as red, we have a slightly improved the detection
24 limit. That's where we may improve our end of the
25 new elements or detected -- eliminated some non-detected

1 values.

2 --o0o--

3 DR. SHE: Here I show the -- what we completed
4 since my last report. So since the last SGP meeting, we
5 completed the following projects:

6 For the firefighter studies, we're able to
7 analyze 83 samples for BCEP, BDCPP and DPP, these OPFRs.
8 Eighty-three samples is the number of samples available
9 for us to do this analysis. Firefighters have overall 101
10 Samples. We also completed 218 samples for perchlorate
11 analysis. Laboratory conducted some study, which is
12 collaboration between Stanford University and our
13 laboratory to look for the relationship between the
14 selenium and the health condition of pregnant women. We
15 analyze 102 samples for cadmium, mercury, and selenium.

16 --o0o--

17 DR. SHE: We also completed our ACE Project II.
18 For this project we measured 99 samples for blood, 100
19 samples in urine for the metals and creatinine. About --
20 we found about 72 samples out of 100 have the high level
21 of the arsenic, which is above our cutoff values. So for
22 these 72 samples, we did a speciation analysis.

23 --o0o--

24 DR. SHE: Currently, we work on the three major
25 projects that Nerissa already showed. The CARE Study

1 that's the last one. And also, we work on the California
2 Firefighters Study, and East Bay Diesel Exposure Project.

3 --o0o--

4 DR. SHE: For the Northern California Firefighter
5 Study, we collected 180 firefighter samples involved in
6 Napa/Sonoma fires of 2017. For our laboratory, we need to
7 determine the metals in blood and urine for the metals
8 listed on the slide. We also do the creatinine analysis.

9 --o0o--

10 DR. SHE: For East Bay Diesel Exposure Project,
11 the sample collection is underway. We plan to collect 50
12 child pairs twice, that's 200 samples. For another five
13 families, we collected 60 daily samples.

14 For the project, EHL's focus will be management
15 of samples, which include aliquot urine samples, measure
16 creatinine, and specific gravity, ship samples to
17 University of Washington for the metabolite of
18 1-nitropyrene's analysis.

19 --o0o--

20 DR. SHE: For the CARE Study, we plan to collect
21 about 300 to 500 participant samples. EHL will work on
22 the test of a few metals in blood and also in urine, plus
23 creatinine and specific gravity analysis.

24 Also, we try to create central sample management
25 facility for this project, so the -- which include finding

1 a physical location, set up the biorepository space, and
2 then use barcode for tracking the samples.

3 --o0o--

4 DR. SHE: In last year, laboratory able to
5 publish five papers with our collaborator or ourselves.
6 You can see the topics include a lot methods, PAH, HERMOSA
7 Study continuation, analytical method. In the future, we
8 still -- we try to publish the relevant topic we are
9 working on.

10 --o0o--

11 DR. SHE: Here is our future works. One study
12 called MACOTA, which is we use our recently developed
13 cotinine method in serum. So this project will do the
14 cotinine analysis in relationship to the occurrence of
15 autism spectrum disorder. This is a collaboration between
16 laboratory of Ehib.

17 And we already finished method validation. We
18 also did a pilot study with 10 samples. We measured the
19 cotinine, compare with the CDC's measurement. And these
20 are archived samples. Our comparison shows very good
21 correlations between these 10 samples.

22 For subset of CARE Study, we try to measure a
23 select panel of organic. For example, depending on the
24 program and the availability of resource, may include a
25 lot of -- not limited to the phenols, pesticides -- maybe

1 pesticide and other program deemed to be appropriate.

2 --o0o--

3 DR. SHE: As you know, in last two years --
4 actually one year, we lost a few positions. Due to the
5 limited-term position ending, we lost two positions in
6 July 2017. With this loss of position, we lost some
7 capability. We lost PAH, non-targeted screening
8 capability.

9 In the upcoming July of 2018, we will lose one
10 more position, limited-term fund ending. We expect -- we
11 will possibly lose or affect phthalate method and
12 perchlorate method. A temporary fix, temporary Band-Aid
13 fix is we have the visiting scholars, but they are limited
14 time, will be here for less than one year. We are able
15 and we hope we can restore PAH and non-targeted screening.
16 But long-term fix, still need a program able to get more
17 funds for us to restore the position and the resource.

18 --o0o--

19 DR. SHE: With all of this, I conclude my update.
20 And if you have questions or we can have questions after
21 the next speaker.

22 CHAIRPERSON SCHWARZMAN: Thank you so much,
23 Jianwen.

24 We have 10 minutes or so now for questions, and
25 then we'll move on to the next lab update.

1 Questions from the Panel?

2 Jenny has a question. Go ahead.

3 PANEL MEMBER QUINTANA: I just had a quick
4 question kind of jumping ahead of myself. But do you feel
5 that the current blood tubes, and amounts, and urine
6 volumes and everything being collected in the CARE Study
7 in L.A. are suitable for future laboratory analyses?

8 DR. SHE: I first can comment on the urine. I
9 think that there are -- we all considered future expansion
10 of the -- include organic panels that should go for the
11 panel we are already underway. But for the panel we do --
12 we never test, I'm not sure on that one. Yeah.

13 CHAIRPERSON SCHWARZMAN: I think you said this,
14 but you mentioned the metals testing you've done in the
15 CARE Study, if -- sorry I should have found the page. And
16 is this -- yeah, the metals, so the POPs are coming next,
17 is that what you're saying about the future work.

18 DR. SHE: Yes.

19 CHAIRPERSON SCHWARZMAN: Okay.

20 DR. SHE: Nerissa, is that correct?

21 DR. WU: I had talked about doing metals first
22 and then a subset of POPs for the Northern California
23 Firefighters Study. For CARE right now, we have committed
24 to metals, PFASs, and for 150 of the participants, we'll
25 also be doing 1-nitropyrene.

1 The hope is that we can add on other analytes.
2 As Jianwen said, we're not sure what those are yet. Maybe
3 pesticides or phenols, depending on what we deem
4 appropriate.

5 But as far as the vials go, we are aliquoting
6 them out so that we do have adequate volume for a number
7 of different panels. And we've just learned that this --
8 you know, our sampling and aliquoting method doesn't
9 preclude VOCs. So this afternoon's panel will be very
10 interesting.

11 CHAIRPERSON SCHWARZMAN: Thank you, Nerissa. It
12 was my mix up.

13 Oh, yes, please, Carl.

14 PANEL MEMBER CRANOR: I do notice -- excuse me.
15 I'm losing my voice. I do notice that there's a fair
16 amount of testing of metals. Is that for public health
17 reasons or for instrumentation reasons, or -- I mean, I
18 assume you're testing the things you are most worried
19 about, is that true? Can you speak to that?

20 DR. WU: I would say that there's a combination
21 of those reasons that you've cited. Yes, there are a
22 number of very acute health issues associated with metals.
23 And it's a clear public health message, which is easy to
24 convey to the public, and a concern to many different
25 communities.

1 It's also a panel that's a concern across the
2 State. So we were looking for things that were -- that
3 were not just region specific but statewide concerns. It
4 is also a method that's -- it's tried and true. It's a
5 very reliable method. The lab is great. They are able to
6 analyze large numbers of these quickly. And we do want to
7 get results back to people in a timely fashion.

8 CHAIRPERSON SCHWARZMAN: Maybe we can get back to
9 Carl in the discussion session, if there was something
10 else you had in mind, in terms of priorities.

11 Other questions from the Panel about the lab?
12 Sara.

13 MS. HOOVER: Hi. It's Sara Hoover, OEHHA. Hi,
14 Jianwen.

15 I thought people might be interested to hear a
16 little bit more about the MACOTA Study. You just said
17 very briefly that it's a collaboration with EHIB. I
18 thought maybe you could give a little bit more detail
19 about that study or maybe Nerissa could, I don't know.
20 Just who the collaborator is and --

21 DR. WU: Just to clarify, it is not biomonitoring
22 EHIB. This is Gayle Windham who is part of the
23 Environmental Health Investigations Branch at CDPH, but
24 it's not with the biomonitoring group, so I don't know a
25 whole lot about it.

1 DR. SHE: Actually, that's not -- I do not feel
2 comfortable to answer this question. I think we will get
3 back for the people have a specific interest, yeah.

4 CHAIRPERSON SCHWARZMAN: Any other questions
5 before we go on to the next part of the lab update?

6 Okay. Thank you so much.

7 (Thereupon an overhead presentation was
8 presented as follows.)

9 DR. PARK: Okay. I'm on, I guess.

10 Good morning. My name is June-Soo Park again.
11 I'm going to give DTSC lab update. I'm from Environmental
12 Chemistry Lab.

13 --o0o--

14 DR. PARK: So as usual, I'm going to start with a
15 status report, including status change of progress with
16 the sample analysis and method development, and some
17 findings from our recent publications and works; and then
18 update on our non-target screening work. Lastly, I'd like
19 to address -- like Jianwen did, I'd like to address some
20 capabilities and capacities we may lose soon.

21 --o0o--

22 DR. PARK: We have new staff. Dr. Ting Jiang.
23 She wanted to come here, but she -- all of a sudden, she
24 felt sick yesterday, so she couldn't join us in person,
25 but I'm sure she's right now listening to this through

1 webcast.

2 She joined us last month as a scientist funded by
3 CDC cooperative agreement. She studied -- she graduated
4 Duke University last December. She was a synthesis
5 chemist there, worked on organic dye molecules for solar
6 energy harvesting. Since -- this may be some change for
7 her from synthetic chemist to analytical chemist.

8 We have to see, you know, the how -- where --
9 how -- where she may fit herself in. So her tentative
10 assignment will include PFASs, and OPFRs, and some
11 non-targeted analysis.

12 --o0o--

13 DR. PARK: Since last June, we completed
14 California Teachers Study. This is the largest study we
15 have ever done. We reported PFAS, PBDEs, PCB/OCPs from
16 more than 1500 samples. We also done first ACE Study last
17 summer, and then second ACE Study early this year. From
18 about 100 samples each, we reported PFAS data only.

19 --o0o--

20 DR. PARK: Some other projects in progress. We
21 are currently MAMAs. This is archived maternal serum. We
22 already done first MAMAs 2015. We are doing -- currently
23 doing MAMAs II. For PFAS, we haven't started yet, because
24 we are waiting our new automated method established. For
25 the PBDEs, we completed 166, about 80 more samples to go.

1 And for FREES - this is intervention study to remind you -
2 we are halfway through for the PBDE analysis. For OPFR,
3 we are getting there.

4 For CARE Study, we are waiting for sample
5 arrival. We're expecting to receive 300 to 500 samples.
6 For firefighters, we are also waiting for the decision to
7 select how many samples to be analyzed for what chemicals.
8 I'm sure there will be little bit of a funding situation.

9 --o0o--

10 DR. PARK: We've been participating in round
11 robin for our two new method. What is called ENTACT.
12 This is U.S. EPA's non-targeted analysis collaborative
13 trial. Twenty-five international and U.S. labs been
14 participating. We are suppose to analyze human serum, and
15 wrist band, and house dust. So far, we were informed only
16 three labs have submitted the final report that includes
17 us.

18 So as soon as we uploaded our results to their
19 link, we received email feedback from them. The number of
20 chemicals we identified from our instrument that LC-QTOF
21 was very close to what they have, which was very
22 encouraging for us. But we still have to wait until they
23 finish their evaluation, and all the reports from the
24 participating labs.

25 Second on this is -- it's called external labs

1 validation study for PFAS in water samples. Again,
2 organized by U.S. EPA, this is a nationwide water method
3 validation study. To my understanding, we are the only
4 California lab among 10 labs selected nationwide. We will
5 be measuring 24 PFAS. So we'd like to take this
6 opportunity as an alternative way to validating our new
7 expanded serum PFAS method.

8 --o0o--

9 DR. PARK: Turning the page to recent findings.
10 I recall one of our colleagues, either Peggy Reynolds or
11 Myrto Petreas, introduced this publication on -- ES&T sent
12 a letter -- I'm sorry, I notice this morning, it's Hurley
13 et al. 2016. It was typo. My apology.

14 They showed the -- back then, they showed the
15 drinking water as a route for PFAS exposure. Briefly,
16 using the data from the California Teachers Study also
17 they're using the participant zip code to match with
18 the -- their public water system. We found the
19 participant who have the PFAS they detected in their water
20 system showed significantly higher PFOS and PFOA levels
21 compared to the participant who have not. So 29 percent
22 higher for PFOS, 38 percent for PFOA.

23 Then we followed up the study to take a closer
24 look. We collected 35 tap water -- actual residential tap
25 waters from all over the Northern California, Bay Area,

1 Sacramento area, even Lake Tahoe. We also had some
2 matched serum available in-house. So so far, out of seven
3 pairs, seven match samples, we found some newer PFAS, like
4 a short chain C4 to C6 PFAS, like butanoic acid, hexanoic
5 acid, and sometimes precursors, 6:2 fluorotelomer
6 sulfonate. They were frequently detected in both serum
7 and the drinking water samples.

8 So Dr. VillaRomero took this data -- preliminary
9 data to present at the last SETAC, November 2017. We are
10 planning to collect more matched serum, and also the -- we
11 are planning to expand this study to whomever interested
12 in, including our biomonitoring group first.

13 --o0o--

14 DR. PARK: This is another paper published early
15 this year. Again, using a large data set from California
16 Teachers Study, we reported PFAS time trend from 2011 to
17 2015. I took two figures, one for PFOS, PFOA on the
18 right-hand side. They are the two major -- two major
19 classic PFAS. So their annual percent change shows --
20 still show very nice declining trend, ten percent every
21 year. We've seen this happen to the -- most of the other
22 classic PFAS too we measured.

23 --o0o--

24 DR. PARK: But PBDE trend seemed a little
25 different. This is another paper we published early this

1 year. So when we look at the -- some of the five major
2 PBDE, the trend was -- they dramatically declined from
3 2008 to 2011. After then, they become a plateaued toward
4 recent years.

5 Of course, I have to point it out, this is
6 different in the population from teachers. Also, the
7 small scale, first time -- young and first-time mom from
8 San Francisco.

9 But, you know, the -- we also published PBDE
10 trend out of Teachers Study early last year. It does show
11 the PBDE trend very similar to this one.

12 --o0o--

13 DR. PARK: So we have the PFAS topics. Recently,
14 we've been invited to give a talk in various conferences
15 and workshops. The -- you know, the one thing I noticed,
16 the audience have been, you know, they're becoming more
17 diverse from Superfund Program, and the public health
18 folks to the solid waste management folks and even housing
19 developers.

20 That I can take a message from that, you know,
21 the -- it's more people are becoming more serious on the
22 PFAS issue nationwide.

23 --o0o--

24 DR. PARK: So update on the non-targeted
25 screening work.

1 organophosphate flame retardant detected higher in
2 hyperthyroid cat, and three PFAS, four drugs, and 14
3 personal care products, three pesticides.

4 But you may already notice the huge green piece
5 of pie, you know, that indicate the majority of those
6 features remained unidentified. That's why I -- we
7 collapse, you know, the old unknown compound into the big
8 group endogenous and unknown compound. They will stay
9 there until they are identified.

10 --o0o--

11 DR. PARK: So our current non-targeted screening
12 activities. We mainly focus on the -- focusing on serum
13 screening. The -- by using the similar method adapted
14 from the cat study.

15 So one is we've been exploring some novel
16 chemicals of health concern in maternal and cord blood.
17 And the other one is we will be looking into some chemical
18 markers for breast cancer among three female occupational
19 groups, woman firefighters, office workers, and nurses
20 study.

21 And we will be looking into screening firefighter
22 samples. Firefighters who participated in the Northern
23 California wildfire activities. The timing will be
24 dependent on the funding situation too. This is not a
25 biomonitoring study, but in parallel to the firefighters.

1 We also had stormwater collected right after the
2 wildfire, two time period. We will be screening them to
3 too to the -- investigate some bay ecological effect by
4 wildfires.

5 Of course, all this work based on the
6 collaboration with our folks, UCSF, UC Berkeley, and the
7 San Francisco Bay Estuary Institute, many others. We
8 cannot do it alone. But still, we still have a lot of
9 work to do. Really, really, you know, too many things are
10 on our plate.

11 --o0o--

12 DR. PARK: But we have a little bit of a
13 situation. As Jianwen mentioned, the situation is coming
14 ahead. We have our colleagues, two key biomonitoring
15 staff, they have -- their positions expire in a few
16 months. I still don't believe that's going to happen.
17 But in worst case, some sample analysis will slow down
18 considerably, unless they stop. That will include
19 persistent chemicals like PBDEs, OPFRs, PFAS.

20 And this will create some domino effect. You
21 know, the -- we won't be able to spend much time to
22 develop method to do chemicals. So non-targeted screening
23 will be the -- will have first hit, and then we won't be
24 able to measure any new chemicals identified from
25 non-target screening work.

1 We also won't be able to expand the -- our OPFR
2 method, also the PFAS method. That -- you know, the -- we
3 won't be able to be proactive against any new or
4 alternative replacement of these chemicals.

5 So one of the consequences, you know, that I can
6 see directly is that DTSC won't have information, you
7 know, the -- regarding exposures to toxic chemicals in
8 consumer products.

9 I think this is my last slide. Thank you for
10 listening.

11 CHAIRPERSON SCHWARZMAN: Thank you so much for
12 that update. Just to tell everybody where we are in the
13 plan. We have 10 minutes for Panel questions about this
14 last update. And then we'll have a public comment period.
15 So that's a reminder to everyone in the room and folks
16 listening on the web to, if you're in the room, get a pink
17 card from Duyen. And if you're online, you can email your
18 public comments to biomonitoring@oehha.ca.gov. And we'll
19 get to those after our Panel questions in 10 minutes.

20 Carl.

21 PANEL MEMBER CRANOR: I noticed in some of the
22 papers, and you mentioned it here, that some of the
23 substances for which you're testing have plateaued. It
24 may be beyond what you're doing. You're just telling us
25 what's in people's bodies. Any idea why they're

1 plateauing?

2 DR. PARK: I showed you it's -- plateauing means
3 the -- you mean, timing? Are you asking the timing?

4 PANEL MEMBER CRANOR: Also that's maybe not so
5 much the timing, but that suggests that there's a
6 background level that's going to maintain the
7 concentrations.

8 DR. PARK: I have to be --

9 PANEL MEMBER CRANOR: And the public health
10 question is how worrisome is that, if at all? But is
11 it -- is there -- is there background concentrations that
12 are keeping the body con -- bodily concentrations at a
13 constant -- at a comparatively constant level.

14 DR. PARK: I think that's a great question we
15 also are asking to ourselves. But that's definitely --
16 that level is definitely separate from the background
17 levels. You know, the many -- yeah, many people -- many
18 epidemiologists, also exposure scientists, they assess
19 risk against that level of PBDEs or lower. You will find
20 hundreds of papers, you know, they're doing it using the
21 data a lot below -- a lot lower PBDE levels than that.

22 So I can tell for sure that's different from the
23 background levels. California --

24 PANEL MEMBER CRANOR: It's higher than
25 background.

1 DR. PARK: Well, of course. Of course. PBDE in
2 California is always a lot higher than your background
3 levels. So some levels to the -- you know, for -- some
4 lab background -- not like us, but some -- you know, the
5 lab, they still can do that. They still can do that. You
6 know, the -- so I think I can tell for sure that's very
7 separating from the background levels. Thank you.

8 DR. WU: If I could add to that response. I
9 think with something persistent like PBDEs, you might find
10 that the exposure source is shifting over time, where now
11 there is this reservoir in the environment and it's become
12 more present in things like food sources. There's -- it's
13 in dust. It will change the exposure picture, but this is
14 a good argument for not putting very persistent chemicals
15 throughout the environment.

16 PANEL MEMBER CRANOR: Well and a piece -- a piece
17 of that too is that I don't -- some of the early papers
18 that I read suggested that the PBDE's deteriorate over
19 time, and they may become more toxic. I mean, maybe some
20 of the lower -- the PBDE 47 might be much worse than the
21 decas and things like that.

22 CHAIRPERSON SCHWARZMAN: Did you have something,
23 Sara?

24 MS. HOOVER: Hi. Sara Hoover, OEHHA. I was just
25 going to add to what Nerissa said. Agreed, that was one

1 thing I was going to say. And also, it's a classic
2 pattern, actually, for like PB -- PCBs. You know, you see
3 the decline and then you start to see it tail off, because
4 it's still out there for a really long time. So we're
5 starting to get into that part of the curve for PBDEs.

6 PANEL MEMBER CRANOR: Thank you.

7 DR. PARK: So also for your information, the
8 figure I showed you was the five major PBDEs, usually
9 found abundant, you know, compared to the other congeners.

10 CHAIRPERSON SCHWARZMAN: Tom had a question. Did
11 you?

12 Oh, no. Then maybe I could add on to that --
13 that same issue. I was wondering if you have -- these are
14 results that are specific to California, and you mentioned
15 in some of your publications on that topic. I'm wondering
16 if those include a comparison to national -- nationwide
17 data in NHANES biomonitoring? You mentioned that PBDEs,
18 for example, are typically always higher in California.

19 DR. PARK: Yeah.

20 CHAIRPERSON SCHWARZMAN: So -- but from -- I
21 don't mean a subset of the NHANES data, but rather the
22 analyses that you've done, does it include comparisons?
23 It's okay. I can look at the paper, but if you could tell
24 me, if it includes a comparison to NHANES biomonitoring
25 data?

1 DR. PARK: For this, we always include NHANES
2 data when we publish, you know, our data. So I think you
3 can -- you can refer to that paper.

4 CHAIRPERSON SCHWARZMAN: Great. Thank you.

5 DR. PARK: I can forward that to you too. Thank
6 you.

7 CHAIRPERSON SCHWARZMAN: Okay. Thank you.

8 Yeah, José.

9 PANEL MEMBER SUÁREZ: I had a quick question
10 about your cat case control study, which is pretty
11 interesting, and I like the approach. At the same time,
12 it opens a lot of questions, right, having 400 compounds
13 that are unknown is what they are ultimately.

14 Have you considered about kidney function in
15 relation to the cats? At least clinically, typically,
16 hyperthyroidism is associated with low glomerular
17 filtration rate kidney problems. And that could be
18 perhaps an explanatory reason for this. Maybe it's lower
19 clearance of these chemicals. Have you thought about
20 that? Did you look -- did you discuss that?

21 DR. PARK: We thought about it, but, you know,
22 our capability couldn't reach that kind of level, because
23 we are chemists and not toxicologists, but I think it was
24 a good point.

25 They -- we collect their blood samples while they

1 visit, you know, the clinics. You know, they tested all
2 the kidney function, of course, the thyroid function too.
3 So we do have some data for the kidney function. So I
4 think we may be able to associate some chemical levels
5 with the kidney function, at least some case control,
6 yeah.

7 PANEL MEMBER SUÁREZ: Yeah, I think that would be
8 very interesting, because otherwise it's the chicken or
9 the egg thing. And then because of these chemicals that
10 they're -- that they have developed thyroid problems or is
11 it because they have thyroid problems that they can't
12 excrete these chemicals that we're seeing here.

13 DR. PARK: A domino effect, yes.

14 CHAIRPERSON SCHWARZMAN: As long as we're on that
15 study, I had a question about it.

16 If we could look at the non-green compounds, the
17 ones that you were able to identify, you mentioned that
18 your filter was sort of -- that these are at least
19 two-fold higher than the non-hyperthyroid cats. And I
20 wonder if there were any that were significantly more than
21 two-fold.

22 DR. PARK: Yeah. Yeah, of course, you know, that
23 400 features include 69 uniquely detected in the cat --
24 hyperthyroid cat. Not only that, but also the minimum is
25 two-fold. Many other confounders are a lot higher than

1 that.

2 CHAIRPERSON SCHWARZMAN: I guess I was wondering
3 from the subset that you have identified, not the 400 that
4 are yet to be identified. Do you -- maybe you don't know
5 off the top of your head, but it's in the data, which of
6 those are significantly more than two-fold? Which are the
7 highest?

8 DR. PARK: Sorry, I think I --

9 CHAIRPERSON SCHWARZMAN: Okay.

10 DR. PARK: We do have a chemical list. I do have
11 it in my computer, but some -- the PFAS -- I remember the
12 PFAS with the amine group showed significantly higher. I
13 don't -- I don't even -- can pronounce the name of the
14 pesticide, so -- but I do have at least -- I'm willing to
15 share with you which at least, I have, yeah.

16 CHAIRPERSON SCHWARZMAN: I was just curious
17 whether there were ones that really rose to the top in
18 terms of a differential? And that would help us with that
19 question too that José had of are those renally excreted
20 chemicals or not?

21 Anyway. An interesting series.

22 Carl.

23 DR. PARK: Thanks for the good idea, yeah.

24 PANEL MEMBER CRANOR: I want to go back to your
25 exposure to PFASs and drinking water.

1 DR. PARK: Um-hmm.

2 PANEL MEMBER CRANOR: You may know this, and some
3 people in the audience may or may not know it, but there
4 was a major tort suit in Southern Ohio, West Virginia,
5 Northern West Virginia from the PFOA that DuPont dumped
6 into the environment with whole communities contaminated.
7 So there may be some interesting data there for
8 comparison.

9 It was sufficiently bad that people were
10 contrasting diseases. And DuPont finally settled for
11 two-thirds of a billion dollars for what they have done in
12 terms of contamination and damage to people.

13 So there's a database there. There was a science
14 advisory panel that looked at it. I don't know what the
15 concentrations are -- were, but it may be of interest
16 to -- given the studies that you saw.

17 DR. PARK: Sure. I just want to add what you
18 just commented. You know, we also tried to help other
19 state for these PFAS analysis. One of them is that we
20 help New Hampshire. They -- many people got contaminated
21 throughout, you know, the Air Force or the -- when they
22 tested their AFF in the fire pit.

23 So I think they -- you know, the Governor, you
24 know, announced all their citizens to be tested for PFASs.
25 And, you know, all of a sudden they are talking about

1 10,000 samples. You couldn't do that, because
2 biomonitoring has a -- biomonitoring sample -- the
3 California samples as a priority, so we helped a little
4 bit, but we couldn't do more, yeah. So but we are willing
5 to -- we're still sharing the -- as the CDC helped us, we
6 also consult to them, you know, the -- any technical
7 expertise they need or on the phone and sometimes they
8 come to us, yeah.

9 CHAIRPERSON SCHWARZMAN: Sorry about that.
10 Jenny.

11 PANEL MEMBER QUINTANA: Hi. This question is
12 really to you and also the other laboratory presentation.
13 So both of you pointed out some significant challenges
14 with reductions in funding and loss of positions. And
15 maybe this question is for the Chair here, but are we
16 going to have a chance to formally discuss options, and
17 will the Scientific Guidance Panel be able to formally
18 express concern about this?

19 CHAIRPERSON SCHWARZMAN: In terms of a chance for
20 a discussion, we're currently in the 10 minutes of
21 questions for the lab update. So we'll have a significant
22 time and I can bookmark that as a topic for discussion.

23 Other questions regarding the lab update?
24 Yeah.

25 PANEL MEMBER FIEHN: Yes. So you mentioned that

1 there are -- as there's an ongoing ring trial from the
2 national EPA on non-targeted screening that you have
3 uploaded results. Can you tell what the aims were of
4 study, and the questions they had, and a little bit
5 like -- you said that they were responding that your
6 results were similar to what they expected, if I
7 understood correctly. Can you elaborate on that?

8 And then secondly a little bit to that -- to the
9 question that you we -- that we just had about staff, I --
10 you hired new staff and the staff had worked on organic
11 synthesis, but not on analytic chemistry. So I wonder how
12 fast you can train this person to do this high quality
13 research that you do?

14 DR. PARK: For the second question, I think we --
15 that's why I said we have to see how fast she can fit in,
16 because she's not the only one, synthesis chemist in our
17 house. Our director, my boss, he's also the synthesis
18 chemist trained at UC Davis. Also, I have another
19 colleague with the same background. But they're doing
20 great. They're doing great.

21 So the question is, you know, how much she is
22 going to like it? That's the challenge for us. Yeah.

23 And for ENTACT, yeah, I think -- before I, you
24 know, joined the -- this round robin, we had the same
25 question. Also, I showed you how complex this round robin

1 is. You know, the EPA -- even though EPA organized this
2 one, but this is kind of too many variabilities. You
3 know, Dr. Fiehn, you have so many toys. You know, the
4 LC-QTOF, and orbitrap, and some people use a GC and LC.
5 Just kind of a flood that they -- I'm expecting they will
6 receive a flood of data -- the data from all the
7 participating labs.

8 One aim I understand is that -- that's why the --
9 they're trying to find some common ground, build some
10 common database they can refer to. At least that's one of
11 the goals they want to achieve from this round robin.

12 DR. SHE: Our lab -- sorry. Our laboratory
13 actually also participated, but a chemist immediately left
14 after we signed the contract with EPA. So I think for the
15 aims, like June-Soo said, they may want to see how they
16 plan to form -- different part to form and approach can
17 complement each other. Another is just like I remember
18 you gave a talk a few years ago about the quality control
19 issues in this unknown discovery process that make sure
20 that put no chemicals. Can you find it? And also maybe
21 try to develop some criteria what's the finding really
22 means through this survey. This is the point I'd like to
23 end.

24 CHAIRPERSON SCHWARZMAN: Sara Hoover.

25 MS. HOOVER: Thank you. I wanted to circle back

1 to the PBDE trend because I forgot to ask you a question.
2 And I, too, can go look at the paper, but if you can
3 remind us, between the last two data points, the 11, 12,
4 and 14, are those two different groups of women or the
5 same women that you re-sampled?

6 DR. PARK: Oh, no, that's two different groups,
7 yes.

8 MS. HOOVER: Okay. So that's another issue --

9 DR. PARK: Yeah, another issue.

10 MS. HOOVER: -- is you're actually comparing two
11 different groups of women.

12 DR. PARK: Thank you for pointing out, yes.

13 MS. HOOVER: And then do you know the N of those
14 two groups?

15 DR. PARK: N is between 30 to 50 each group.

16 MS. HOOVER: Okay. So it's small.

17 DR. PARK: Yeah, I told -- I mentioned that,
18 small -- much smaller scale, yeah. But we controlled the
19 same hospital, same -- the similar age range, and
20 first-time mom. Also collected blood samples from the
21 second trimester. Yeah, at least the people controlled
22 what they can control.

23 CHAIRPERSON SCHWARZMAN: I had a question related
24 to that study too.

25 DR. PARK: Yeah.

1 CHAIRPERSON SCHWARZMAN: So this is looking at
2 sort of the legacy perfluorinated compounds. And I know
3 that various studies are also looking at the newer PFASs.
4 And I wonder if, off the top of your head, from any of the
5 studies you've done, if you can say anything about
6 relative trends within the newer PFASs?

7 DR. PARK: Are you stalking about other people's
8 work or the -- our own data?

9 CHAIRPERSON SCHWARZMAN: Well, either if you know
10 about them or I could ask for other people's --

11 DR. PARK: Right now, the trend-wise, I don't --
12 I don't recall. I've seen many publications chasing the
13 trend for the newer -- you know, the more recent PFAS.
14 That's what we are trying to do. You know, the first try
15 to identify those -- you know, the short-chain PFASs and
16 some pre-cursors.

17 We will be eventually getting there, but I'm not
18 sure the other people also start to present some trend
19 paper for newer PFAS. If -- thank you for that. I think
20 I will -- as soon as I go home, I'll sit down, I will
21 Google it.

22 (Laughter.)

23 CHAIRPERSON SCHWARZMAN: I don't know if other
24 people have --

25 DR. SHE: May I?

1 CHAIRPERSON SCHWARZMAN: Yeah, please.

2 DR. SHE: For the time trend of PBDE or PCB or
3 other chemicals, I think you said you use the sum of 5
4 congeners for PBDEs, for example. Like Carl already
5 pointed out, maybe -- when the time is going, some PBDE
6 may have degraded, so may look for the individual PBDE,
7 instead of all five of them, because I saw your level
8 stable at slightly below the 50 ppb. And then previous
9 date that you show come from 90 ppb.

10 So now stable on the 50 ppb may allow you to look
11 at individual levels to see if that may give you some
12 indication. Is that secondary source, like Nerissa
13 mentioned or degradations or something else.

14 DR. PARK: You read our paper, right?

15 (Laughter.)

16 DR. SHE: Yeah, I got this from your paper.

17 DR. PARK: That's very great point. That's why
18 the -- we did analysis for the individual PBDEs too. I
19 think if you read our paper published earlier 2017, that
20 paper is quite interesting, because PBDE 47 showed that
21 similar pattern, you know, showing it plateaued. But we
22 actually observed 153 going up -- slightly going up at the
23 end.

24 So we kind of had a long discussion, come up --
25 yeah, came to the conclusion this is kind is a -- kind of

1 a sign for the shifting the source, instead of, you know,
2 the kind of direct exposure from the house dust. Maybe
3 it's coming from the -- some food intake, like fish. So
4 that's why we are carefully looking at that trend
5 individually.

6 Thank you for that. Yeah.

7 CHAIRPERSON SCHWARZMAN: Other questions before
8 we move to public comment, and then we'll go into
9 discussion. So we have more chance to review all this.

10 Okay. Why don't I -- I'm going to call for
11 public comment then. Anybody in the room has given you
12 comment cards?

13 MS. KAUFFMAN: No.

14 CHAIRPERSON SCHWARZMAN: No, nothing in the room.
15 Anything from the web? Who is looking at the
16 web?

17 MS. KAUFFMAN: No.

18 CHAIRPERSON SCHWARZMAN: Duyen also.

19 Okay. In that case, we're going to move directly
20 on to our discussion. And I would say this, we could --
21 this should be broadened beyond the laboratory updates,
22 also to the Program updates in general. And we have all
23 of our presenters from this morning here to help address
24 questions or reflect on these discussions also.

25 And I would add that this is not just a Panel

1 discussion, it's also open to all of the people here
2 present, so please feel free. And maybe we'll start with
3 this topic that Jenny raised.

4 You know, it's a perennial issue, which is the
5 resources, I always am just amazingly impressed by the
6 work that is done by Biomonitoring and by both labs in
7 light of limited and shifting resources, and the coming
8 and going of staff who take with them expertise about
9 panels, and how nimble you are able to be, and how much
10 you are able to preserve in light of limited resources.

11 And I think one of the things the Panel kind of
12 always considers is how can we support you, you know, both
13 in looking for obtaining funds or more kind of from a
14 advocacy support perspective. But anyway, maybe I would
15 turn it over to Jenny for the thoughts that were
16 triggering your nomination of this topic of discussion.

17 PANEL MEMBER QUINTANA: I guess I have a question
18 for all of you, which is have you had thoughts about best
19 ways to leverage it? And maybe this is already on the
20 website, and forgive me if it is, but if you remember the
21 National Children's Study collected a bunch of samples -
22 physical samples and biological samples - and then they
23 came up with a very -- a procedure, which is on the
24 website now, to how do you write grants paying for
25 analysis of these samples, and here's the process, here's

1 how you do it, here's how you collaborate.

2 And I'm wondering if we have a formal -- kind of
3 a formal process to encourage other researchers to perhaps
4 write grants, and then come up with the money for the
5 laboratory to perform analyses? Have you thought -- or is
6 that already in place in a formal fashion? I know
7 informally it happens a lot on a case-by-case basis, but
8 literally a link on the website. You're a researcher.
9 I'd like to investigate this question with your samples.
10 Here's how the process -- things like that.

11 DR. WU: I think I'm a little confused by your
12 question. Are you asking if we are applying to work on
13 the National Children's Study, or are we -- do we have a
14 plan to kind of model something after the Children's Study
15 to encourage collaboration within our program?

16 PANEL MEMBER QUINTANA: Sorry if that was
17 confusing. I was thinking of it more as a model of how
18 one can formally make it possible to get expertise and
19 money from other sources to contribute to the laboratory
20 to perform some analyses through a funded grant mechanism.

21 DR. WU: I think we have done some outreach in
22 the past --

23 MS. HOOVER: Get closer to the mic.

24 DR. WU: There has been a process in the past for
25 collaborators to apply to the -- sort of apply to the

1 program and propose collaborations. We haven't -- we
2 haven't had that outreach in a while. And, I mean, we do
3 get lots of, I guess, proposals being vetted by us -- or
4 run by us is -- like is this something we can participate
5 in?

6 One of the difficulties with our limited-term
7 Band-Aids has been that it's hard for us to project out
8 what our capabilities will be. So we have lots of
9 interesting work being proposed to us, but if we don't
10 know if we'll have the analyst in a year, it's really hard
11 for us to commit. And we don't want to say we'll do
12 something and then mess up the timeline of a project when
13 we can't -- when we just can't commit to it.

14 So it's a little bit of a cycle that we've got --
15 that we are forced into, because it would be really --
16 that is a really good idea to sort of put ourselves out
17 there and be participating as part of other studies.

18 Unfortunately, I think we're a little bit
19 hampered from doing that, because of our -- because of our
20 particular situation.

21 But maybe you guys -- I mean, I think there have
22 been a couple proposals that have come across our desks
23 recently, and I know the answer has been we don't know if
24 we'll have staff for this. But I don't know if you guys
25 want to comment on that a little, or Sara could comment.

1 MS. HOOVER: Yeah. Nerissa, I was just going to
2 add to what you said. Part of the issue that we have is
3 because of the nature of State funding. So it's not like
4 somebody can raise funding and easily give it to us and
5 then we can go on our way. So really the core issue for
6 the Program is sustainable State funding.

7 So we've had various sources of funding coming
8 in, including wonderful CDC funders. But always, the
9 concept was to build a sustainable program funded by the
10 State. And that's really what's necessary for us to do
11 our jobs effectively. So, you know, just recently, we
12 were approached -- I mean we were approached, because we
13 have great labs. We have great staff. People want to
14 work with us.

15 But it's not -- if somebody says I can give you
16 this money, I can't then produce the staff, you know, to
17 do that work. So we're very hampered with the limited
18 staffing. We cannot take on these new projects. We
19 don't -- we can't necessarily write the grants and have
20 the money come in. So it comes back to just it's a State
21 program. It needs to sustainably funded by the State.
22 Like that's -- that's essentially my conclusion after all
23 these years.

24 The only other side note I wanted to say in terms
25 of what's on the website, we do have information for

1 researchers about contacting us. Originally, we did a
2 bunch of RFIs. Part of the Request for Information about
3 people having archived samples that they might want to
4 work with us on, that was for laboratory development. So
5 that was kind of a pro bono situation, where we wanted
6 samples to help develop the lab. Again, we're kind of not
7 in the position to do that now.

8 CHAIRPERSON SCHWARZMAN: Can I ask a follow-on
9 question that you each might have something to contribute
10 to is, something that seems like that might enable the
11 Panel to help you is if -- do you have a wish list? Do
12 you have like the top things that you can't do right now,
13 because you don't have funding, or personnel? Because
14 that could enable -- I know that your -- the Program isn't
15 a position to advocate for itself, and -- but maybe
16 there's a role that, as Scientific Guidance Panel members,
17 we could take, if we had a more specific wish list of the
18 things that in particular the Program could be doing,
19 samples you already have, or cohorts you could expand, or
20 populations you're, you know, almost able to reach, or
21 sore of opportunities that are passing you by that we
22 could help make the case for.

23 DR. WU: We don't have a list like that as such.
24 It's a great idea though to sort of prioritize the things
25 that we are lacking, so that we could communicate that

1 better to you and other advocates. I think it's a list
2 that changes quite often depending on -- I mean, there's
3 so many things we would like to be working on that -- and
4 depending on particular staff that are -- you know, it's
5 kind of an ever-changing landscape. But as that changes
6 and as there are new chemicals that come across, and new
7 projects, that list does shift around quite a bit.

8 But I think that's a good idea. We do sort of an
9 annual reexamination of our priorities, and that would
10 be -- that would be a great product of that to communicate
11 out.

12 CHAIRPERSON SCHWARZMAN: One of the particular
13 reasons that I ask is, you know, we all may have contact
14 at various times with State decision makers who express
15 their priorities to us. And if we have an easy way of
16 tying what we believe about the Program's needs into State
17 decision-maker's priorities, that could -- you never know
18 which of those would payoff.

19 Carl.

20 PANEL MEMBER CRANOR: I want to echo though
21 Megan's and Jenny's comments, because it's not only
22 members of the Science Guidance Panel, but the public
23 interest groups that were behind the formation of this
24 Program that can provide some help. I mean, this is a
25 political issue, right?

1 My understanding is that the funding needed for
2 this program is actually pretty small. I mean, you do an
3 admirable job with what you have, but it wouldn't take
4 much more to expand those efforts. And I know that
5 they've been told this at the high levels of the
6 Governor's office. But given the picture of the budget
7 that was presented earlier, it does look like this is
8 reaching a point where that, as Sara put it, the baseline
9 really should be raised, because you need a reliable set
10 of institutions and staffers to run them that has been
11 pretty variable.

12 DR. WU: Yeah, I think that's true. And to add
13 onto what Sara has said, one of the challenges with
14 advocacy groups or an attention being paid to a specific
15 issue, like a top 10 list of what's hot now, is that it's
16 a slow moving boat. I mean, we are -- a lab method takes
17 a while to develop. It takes a long time to train staff,
18 and to do all the QA necessary to have a method ready to
19 go public with it.

20 So if something is raised to our attention, and
21 like great we have funding for it, it may be a couple
22 years down the road. And by then the attention has
23 shifted somewhere else. We constantly are being pulled in
24 different directions because we're very interested in
25 everything. And one of our challenges is to keep our eye

1 on things -- is to kind of weigh the chasing all these
2 different interests versus really sticking to what we're
3 pursuing at the cost of not being able to answer some very
4 proximal questions. But it's difficult, because it does
5 take a lot of time to raise that expertise and to get --

6 PANEL MEMBER CRANOR: I think I was suggesting
7 something slightly different. They -- obviously, they
8 have particular interests, but their -- the sum of the
9 support groups that led to the formation of this Program
10 could represent a political constituency, as it were, for
11 the -- to talk to the legislature, to talk to the
12 Governor's office, not for their particular projects, but
13 to give you better resources to do the various jobs you
14 can do, and maybe be able to respond to some of these
15 things.

16 To go back to Megan's point, that's why it would
17 be very important to have a list of what you couldn't do,
18 would like to do, is terribly important to do, so that you
19 have a set of talking points to go forward.

20 Years ago, I heard Dick Jackson give a talk about
21 how he ran things at CDC. And he said, always have
22 your -- always have your various kits with you, have them
23 prepared and ready to go. So think of the political kit
24 you might put together to serve these purposes.

25 CHAIRPERSON SCHWARZMAN: Yeah, just to echo

1 Carl's point a little bit, I wasn't meaning that you
2 should pick the programs you want, you know, the world to
3 fund you for. It's almost more like having examples.
4 That if we were to go out in the world and say here is
5 what Biomonitoring California would like to do, if they
6 had the funding. If that funding came through a year
7 later, you would have a different wish list, but it gives
8 us some specificity to say look at the power that's
9 sitting here untapped is kind of what I mean, rather than
10 committing to a specific project in advance.

11 DR. WU: Okay. That's a -- those are both
12 excellent points. And we have been told, both internally
13 and externally, that scientists are not the best message
14 writers, and I think it's something we need to work on.

15 PANEL MEMBER CRANOR: Or get people who can do a
16 better job of that. I really think that -- this is not
17 denigration, but you need to convey what you could do, and
18 not necessarily responding to particular projects, but
19 importantly public health things that could and can be
20 done, but you just don't have the personnel.

21 And then you need to find somebody that can --
22 that knows how to express that message in a way that
23 legislators, the Governor's office, and people like that
24 will respond to.

25 CHAIRPERSON SCHWARZMAN: Jenny.

1 PANEL MEMBER QUINTANA: Hi. I just had a
2 question to educate myself about funding. You said that
3 State funding is necessary, Sara, and to all of you. Is
4 it possible, just theoretically, if funding were set aside
5 under AB 617 for air monitoring communities, if they
6 wanted to do biomonitoring for air contaminants, can that
7 money transfer over? I just don't even know how it all
8 works. But can that somehow come across different silos
9 that way?

10 MS. HOOVER: I'm just pointing over to Lauren
11 to -- if -- and also just to note, we will be talking with
12 AB 617 this afternoon, you know. And I'll just say my
13 comment and get back to your question. Great idea. And I
14 want you all to know that -- what Lauren mentioned, we're
15 going to take our 10th anniversary pages, our various top
16 accomplishments, we're going to make them into like
17 one-pagers that can be used as little elevator speeches,
18 or little fact sheets to handout. So we're going to start
19 working on that after this meeting.

20 I think that we can look at what can we do in the
21 near term, what can we do in the long term, what's going
22 to take a lot more resources? We can sort of categorize
23 things like that. And that's some of the informal
24 discussion questions that we're going to talk about this
25 afternoon is what can we do, for example, to support AB

1 617 and show our value in the near term, what can we do in
2 the long term that requires more resources?

3 So that's kind of how we think about it. We're
4 always trying to say, yes, and jump in and help with
5 existing resources. And that's what we did with the
6 wildfire. You know, that was actually a huge, huge effort
7 on the part of Nerissa and others in EHIB, and the labs,
8 and I was part of it too. You know, we all just jumped
9 in. We wanted to do it, so we found a way to do it.

10 Now, we're hoping to set up a protocol going
11 forward so if it happens again, we'll be able to get out
12 in the field more quickly. But that's the kind of thing
13 that's going to take more resources. So I think that --
14 but we're going to try to, you know, kind of daylight more
15 of all of those things that we are doing, that we have
16 done, and what's possible with -- even with the existing
17 resources. I mean, we do a lot with our base funding.

18 And that's -- I guess, I'll also let Jianwen and
19 June-Soo comment on this. But I know that one thing
20 they're going to focus on now is a lot of cross-training,
21 so that as we, you know, lose analysts, more analysts will
22 be able to do more of the methods, which is actually
23 challenging. It's quite -- it takes a lot for a method to
24 be maintained. I've been educated over the years with all
25 that it takes.

1 So, you know, we're looking at -- I mean, we're
2 going to keep going, because we're very scrappy, and we
3 just, you know, go for it. But, yeah, the -- I appreciate
4 your desire to help us and support us. And we'll try to
5 give you what you need to do that.

6 CHAIRPERSON SCHWARZMAN: Tom.

7 PANEL MEMBER MCKONE: I want to follow up on the
8 wildfires. Was that -- so far you've only been able to do
9 firefighters though, right, when you mobilized, or have
10 you done communities?

11 MS. HOOVER: (Nods head.)

12 PANEL MEMBER CRANOR: So one thought I've had,
13 which happened during the fires, and I don't -- I haven't
14 thought of all the details, but from a public health
15 perspective, the exposures to those levels of particulate
16 matter in the communities is really significant. I mean,
17 Napa was really hitting high numbers. Southern
18 California, the same thing.

19 And, I mean, there's two things. It's very
20 important from a public health perspective to have good
21 information on what people were exposed to, and we don't.
22 I mean, basically if you follow -- we were following the
23 numbers that were being posted by the Bay Area Air Quality
24 Management District. What they're doing is they're
25 kriging from about, what, 10, 12 monitors.

1 And so even -- you know, so people were reading
2 that and thinking they had really accurate information on
3 their exposures, but they didn't. It's just computer
4 generated kriging, and we had some people doing actual
5 data.

6 But I think more importantly if there's
7 someway -- so there's two issues to this. One is it's
8 important from a public health perspective to really have
9 better information on the community's stress during these
10 events. And secondly, it might be a way to really enhance
11 the value of the Program, because I think a lot of -- I
12 mean, I got a lot of people asking me what do these mean,
13 what are these exposures, how high are they, how relevant
14 are they?

15 And better than having lots and lots of air
16 monitors would be having some people with some real
17 measurements.

18 Now, I know that's easy to ask for. It's
19 probably really hard to do, because in reality it would
20 take -- you can't just go out and get volunteers in 10
21 minutes or so. But at least one of the things we know
22 about fire events is unfortunately they have were quite
23 long, both the Southern California and Northern
24 California. The fires lasted for enough days that if we
25 had some ability to mobilize the communities and the

1 interest, we could have gotten people engaged probably in
2 giving some blood or urine samples.

3 Again, it's just something to think about as a
4 way to actually get some really valuable public health
5 information. And given that we have the experience with
6 the firefighters, it's not something, you know, brand new.
7 It's something that has to be extended to highly exposed
8 individuals.

9 DR. WU: Yeah. I think that's a really good
10 point. There is obviously a lot of concern for the
11 community members themselves, both the airborne
12 particulate matter, but then in the days ensuing, all the
13 ash. What's the exposure from the ash lying all over the
14 school yard, or on sidewalks, or on my house, with my dog
15 tracking all the ash into my house. So there are a lot of
16 these questions that really require more examination.

17 Biomonitoring has not been doing much with that,
18 but the -- there are others in the Department of Public
19 Health who are starting to examine some of those
20 questions.

21 And we would like to. I mean, I think our
22 emergency response IRB that we're trying to put together
23 with the protocol ahead of time will take some of these
24 scenarios into account, so that we are better prepared to
25 go not only to workers, but also to communities to try to

1 get a better idea of what the exposure looks likes.

2 We do have in CARE when we were writing up our
3 final questionnaire, the wildfires in L.A. were breaking
4 out, and so we did add a question on about what was your
5 experience in the fire? Were you actively evacuated?
6 Were you working on the fires? There were a series of
7 questions trying to gauge what people's exposure might
8 have been to those fires. And we will have -- we'll be
9 able to take a look at that once we have the analytical
10 data.

11 CHAIRPERSON SCHWARZMAN: José.

12 PANEL MEMBER SUÁREZ: Coming back to the budget
13 pieces. So starting for the next budget cycle, which
14 starts in the summer, what's -- given the budget cuts of
15 course, how much staff do you expect could be potentially
16 be reduced ultimately to be able to afford it?

17 DR. WU: So in this next budget cycle, the change
18 is that we lose the limited term positions that were
19 created in a budget change proposal which went from 2016
20 to 2018. So I believe it's one position from each of the
21 labs, which is following on -- or you have two positions
22 that are coming out and one from EHL. And this is coming
23 on the heels of this fiscal year, where EHL lost two
24 positions and ECL lost -- was it also two this last year
25 that you lost --

1 DR. PARK: We didn't lose any.

2 DR. WU: Okay. So a total of three per lab over
3 the last two years that's been reduced.

4 PANEL MEMBER SUÁREZ: And what does that
5 translate to with your capabilities ultimately? Does that
6 mean you won't be able to analyze certain compounds, or
7 there's some priority ones that you do want to keep or
8 what's your approach, your strategy?

9 DR. WU: Do you want to answer that?

10 DR. SHE: That's use the number --

11 MS. HOOVER: Microphone.

12 DR. SHE: Use a number of the total staff was an
13 estimate. Okay. And the baseline we have at the first
14 year, we have five staff, one administrator. So the
15 laboratory, four total staff. With limited term and on,
16 we ended three staff. So almost half capabilities or half
17 resources we lost. Total we have seven, and then -- plus,
18 I am a supervisor, I did not do so much, so the real
19 workers reassigned lost half of them. So that's the
20 estimate.

21 PANEL MEMBER SUÁREZ: So what's your strategy in
22 that regard? Are you planning on then offering to be able
23 to -- or reduce the number of compounds that you'll be
24 looking at, or just reducing the number of samples that
25 you can run? What does that actually translate too now in

1 the practice.

2 DR. WU: Well, I think both of these two reported
3 out there are specific panels that we were losing the
4 capabilities for. We lost our PAH analyst. We lost our
5 phthalates analyst recently. And it is difficult to -- I
6 mean, you -- just to maintain the instrument without doing
7 any analyses, there's a fair amount that has to be done,
8 plus the training of the analyst. And these guys can
9 speak more eloquently about this. So we can't just have,
10 well, you from over here go to over to this bench and run
11 these other samples.

12 It's a little difficult, but they will be doing
13 more cross-training so we don't completely lose that
14 capability, though there's still a time and, you know,
15 there is a resource of we don't have enough people to
16 cover all the instruments, but at least we won't lose that
17 institutional knowledge, and the actual method itself.

18 But there are things that we can't run when we
19 talk about projecting out what we can run for CARE, we
20 have the samples. So it should be great, we've done the
21 expensive part of collecting the samples, let's run them
22 now, but we don't have the people to run them for all
23 these analyses.

24 DR. SHE: Also, if laboratory lost staff under
25 the critical point, you may not be able to operate, and

1 then -- so I think with three staff or four staff left,
2 you barely can effectively operate. And then -- but on
3 the other hand, like -- so we do instead of passive
4 waiting within our own very limited capability, we try to
5 still create opportunity. Like Jenny mentioned, can we
6 write a small grant, which don't resolve the issue, but
7 supplementally.

8 So we try to work on the National Children's
9 Study we try to get the grant. Unfortunately we did not
10 get. So only laboratory can work as a small scale. For
11 example, we may get a fellow, we may get a visiting
12 scholar, temporarily maintain the program going. But it's
13 fundamental to make this program reach its original law,
14 required goals still need to be met.

15 DR. WU: If I could add, it is also not just
16 staff. The labs are very expensive to operate. The
17 instruments are very expensive, the maintenance contracts.
18 And so in order to keep a method up and running there's a
19 certain baseline funding you need to have, if you don't
20 keep those instruments running. If somebody comes and
21 says, well, I would like you to run these panels, and
22 here's some money for it, you still need to have the
23 capability to turn a switch on to start running them. So
24 there is a baseline amount of funding you need to keep
25 that capacity up.

1 PANEL MEMBER SUÁREZ: It sounds like there is --
2 there could be potentially that amount of funding. I
3 mean -- so I'm trying to get back to Jenny's original
4 point, so how difficult would it be or how much would you
5 favor having supplementing your budget with a
6 fee-for-service type approach?

7 I know it's dif -- a little bit difficult,
8 because it is a State institution. But take the CDC
9 laboratories, they do a lot of subcontracting out through
10 their CDF foundation, which then channels the fund into
11 the laboratories. Could that be a potential model to help
12 you, you know, through these times?

13 DR. WU: Well, I think there are limits on how we
14 can charge for services. We can't profit off of services.
15 And we are not a commercial lab, and so there are
16 limits -- you know, the money that is charged if somebody
17 brings samples like New Hampshire asked us to run some
18 samples. That money might pay for the actual analysis,
19 but it doesn't pay for all the overhead that goes into
20 maintaining that equipment and the space for the
21 laboratory and send everything else that goes into, you
22 know, like the lights, you know, electricity, all the
23 stuff that goes into running a lab is quite expensive.

24 But the State, as a State institution, can't
25 really bill for that kind of stuff. We're not -- we're

1 not a private institution, so there is that challenge.

2 PANEL MEMBER SUÁREZ: Yet, somehow -- and this is
3 just a question. I don't really understand the finances
4 behind it, but I know that, as I was saying, the CDC
5 laboratory, they do huge contracts all the time, because
6 they're very well known to do -- to do some excellent
7 work.

8 And I think that that's something that your labs
9 have that capabilities of that, and has that reputation as
10 well. And it could be something that could be perhaps
11 followed as a model that they're doing, because they do
12 channel a lot of funding through their foundation, and
13 they have different methods to do that.

14 CHAIRPERSON SCHWARZMAN: Yeah. Great. Just one
15 second. I just wanted to follow up on that issue of
16 overhead. I'm surprised that the State can't charge it
17 like the university -- the state university can charge
18 overhead.

19 DR. WU: I am not the correct person to be
20 answering this question.

21 CHAIRPERSON SCHWARZMAN: Okay. Okay.
22 (Laughter.)

23 PANEL MEMBER FIEHN: I would also -- I would also
24 like to second that, you should really explore that. I
25 mean, we run the same model. We have grants, but we also

1 have a huge arm of service -- fee-for-service costs. And
2 they really supplement the running costs, the maintenance
3 costs. The worst is not running the instruments, right,
4 because you don't have the staff or so.

5 So I think it is a good model to do. And, of
6 course, you can also say for a certain -- you know, for
7 every sample we run, there is a certain fraction of
8 maintenance cost. There's a certain fraction of energy
9 costs. This -- you know, so that is definitely possible,
10 at least at university, to charge.

11 DIRECTOR ZEISE: So I think this is -- this is
12 something that the Program can go back and explore more.
13 It's an excellent set of suggestions.

14 CHAIRPERSON SCHWARZMAN: Yeah, Martha.

15 DR. SANDY: Martha Sandy with OEHHA. I just
16 wanted to say, I agree this is something to think about,
17 but I think there's a certain level of baseline funding
18 you need. You need the position authority, and you have
19 to have the funds to have those positions, in the first
20 place. And then once you're running, pretty well, then if
21 we could come up with some fee-for-service or work and
22 collaborate and get the money in, then that helps.

23 But we -- I think that we're worried about the
24 critical baseline funding that we haven't really achieved
25 with the staff that can do the panels -- the analyte

1 panels.

2 CHAIRPERSON SCHWARZMAN: Thank you for
3 reiterating that Martha. I think it's helpful for us to
4 keep in mind.

5 Sara.

6 MS. HOOVER: Yes. Sara Hoover, OEHHA.

7 Meg, I just wanted to circle back to one thing
8 that you and Jenny asked about which is what could you
9 guys do? And I wanted to let you know that in the past,
10 SGPs have written letters. And, you know, you can't share
11 it, you know, the way that it works, because it's a
12 Bagley-Keene issue, but you could have one or two of you
13 work on it, draft it, and then show it at a public
14 meeting, and have you all sign it at a public meeting.
15 That's an option that you could consider doing.

16 And then I don't know if there's anything more on
17 this, but I wanted to segue into another announcement.

18 CHAIRPERSON SCHWARZMAN: Sure. Thank you. That
19 is the kind of thing I had in mind, and I was specifically
20 sort of asking for input on that. Like, if you all have
21 examples that we could then use on our own to do that kind
22 of thing.

23 MS. HOOVER: Yes, we do have past examples. And,
24 in fact, we have, I think, an example that actually went
25 into one of our leg reports. Then there's other examples

1 where just letters were directly sent to like the heads of
2 the departments. So I think there's various options, and
3 we can kind of refresh what current procedures are with
4 that, and let you know.

5 CHAIRPERSON SCHWARZMAN: Great. Thank you.

6 I also had one question or thought about. I'm so
7 glad to be here that the program is thinking about this sort
8 of anticipatory approval and plan for emergency projects.
9 And one of the things that occurs to me is it was sort
10 of -- the thought was triggered by one of the publications
11 in -- I think it was in June-Soo's -- no. It was in
12 Jianwen's laboratory update. This last one on the
13 publication list, that's looking at particulate matter
14 exposures, and lipid peroxidation when cabin filters are
15 used among drivers.

16 We've talked on this Panel a bunch about our
17 interest in intervention studies - thank you. That's the
18 word I was looking for. And it occurs to me, whether
19 that's something we could keep in mind for other, whether
20 it's responding to wildfires or other environmental sort
21 of emergencies that would be -- have relevant
22 biomonitoring aspects to keep the intervention study model
23 in mind to do with air filters in child care facilities,
24 or schools or work places, or homes as a potential element
25 that could be planned for in advance, and therefore maybe

1 possible at the time.

2 Jenny.

3 PANEL MEMBER QUINTANA: I just had a follow-up
4 comment or question about the IRB process. You talked
5 about getting emergency IRB, but I don't -- if it's -- I
6 believe you can get samples and analyze them if it's not
7 for research purposes and not being published. So, I
8 mean, you can have -- go and get -- I believe I'm correct,
9 but I may not be correct. You should check, but I think
10 if you're just doing it for public health reasons, like
11 you said, public health emergency, if a wildfire, I
12 believe you can get samples, and analyze them, and display
13 their results with -- if it's not for -- specifically done
14 for research, but if you have any comments on that.

15 DR. WU: Yeah. And actually I did have a
16 conversation with our State IRB about this, and they would
17 have -- they would have reviewed and likely approved an
18 emergency response IRB for us. I think because we did
19 also want to collect exposure information and we have a
20 results return obligation, so there is -- we wanted to
21 collect participant information, it sort of triggers a
22 higher level of review, which might have taken a little
23 longer.

24 So, yes, we could have gone out to get those
25 samples, but because we -- we anticipated wanting to add

1 on a fair amount of information, we chose not to go that
2 route. And I think with what we're talking about, with
3 preparing it, having a number of questionnaires where
4 we've thought through carefully, well, what might be the
5 exposures we're concerned about in a fire, or in a flood,
6 or in, you know, these different types of emergency
7 response situations, it will help us be a little more
8 prepared for like what panels might be appropriate, and
9 what kind of questions we want to ask, and who is the
10 population we're looking for. So I think it will help us
11 actually design it a little better to do so ahead of time.

12 PANEL MEMBER QUINTANA: My point was actually
13 that it's the intent for research that triggers IRB, I
14 believe, or human resources -- I mean, human research
15 protection programs.

16 DR. WU: That's right.

17 PANEL MEMBER QUINTANA: So if you literally do it
18 for public health reasons, I don't -- I'm just curious. I
19 don't know the answer, but I'm thinking that we might be
20 thinking are there times when you're not doing for it
21 research reasons, and could that be a pathway that you
22 might activate for this program, if that makes sense?

23 DR. WU: I believe the requirement that the
24 program has of getting participant identifiers triggers
25 the research -- it triggers the check box for research.

1 So if we were to do it as an emergency response, not
2 research, and an expedited review, we would not be able to
3 get participant information, and then we wouldn't be able
4 to fulfill our obligation to return results.

5 So we've gone through -- we've tried that route a
6 couple times with other types of projects, not emergency
7 response, and we always end up back in the research box.

8 PANEL MEMBER QUINTANA: Okay. That's different
9 than universities handle it, but yeah.

10 CHAIRPERSON SCHWARZMAN: Yes.

11 PANEL MEMBER MCKONE: Yeah. I want to follow up
12 on Dr. Schwarzman's comment about air filter deployment,
13 and -- in emergency events or wildfires. And there is a
14 protocol, the Aliso Canyon event -- well the State didn't
15 provide the air filters, but the State provided what I
16 thought was really good information about the kind of air
17 filter to get.

18 And we're on video, I won't mention product
19 names, but there are products that really work and there
20 are products that don't. And it's important for people to
21 know, just having that information and having access to
22 them.

23 The other thing is if it's particulate matter,
24 and you give somebody a new air filter that has a HEPA
25 filter around the outside, and a carbon core in the

1 middle, so the chemicals are in -- and then some have
2 permanganate and other chemicals in the center, but the
3 outer core, if it's new, you can take a core sample out of
4 that HEPA filter. And if you know how long it's been
5 operating, you can get a good estimate.

6 If you have biomonitoring, even very limited
7 biomonitoring, you have those two things together, you
8 have some information to start talking about population
9 exposure. So it's a very powerful merging of two pieces
10 information, neither one of which would be all that
11 powerful alone. So there's some advantages to having just
12 a little bit of biomonitoring, and a little bit of -- or
13 even more air filtering, and some understanding of how it
14 was deployed. And it's a great public health service to
15 communities. And we know how to do it, because we did
16 it -- or, I mean, we have -- roughly, the State knows how
17 to do it, because it was done at Aliso Canyon.

18 DR. WU: We'll put it on our list.

19 CHAIRPERSON SCHWARZMAN: I also think -- I would
20 kind of vote for -- not that you really get to choose any
21 of this right now, but just to raise the issue of an
22 intervention study that particularly targets people who
23 wouldn't otherwise be able to afford an air filter, which
24 was, you know, like the focus of the intervention study
25 with couch replacement and foam replacement in public

1 housing. And it may also open up other opportunities for
2 funding.

3 I'm sort of trying to play through in my head
4 right now whether there's a way it could tap into AB 32,
5 disproportionately affected communities funding. The link
6 to AB 32 maybe a little bit difficult, unless you're just
7 doing wildfire -- increased risk of wildfires, et cetera.
8 But anyway, it may be worth thinking about a little bit.

9 And likewise, from a funding opportunity
10 question, I was thinking about whether this -- look at
11 sort of pre-setting up emergency response protocols might
12 also help you access emergency planning funding, which I
13 think is generally more available.

14 DR. WU: It's something we're looking into.

15 CHAIRPERSON SCHWARZMAN: Okay. Good. Great.

16 Okay. Sara.

17 MS. HOOVER: So just to add one little thing
18 about the intervention, we are going to talk about, you
19 know, intervention studies as a possible long-term effort
20 this afternoon.

21 I'll also say that as part of the East Bay Diesel
22 Exposure Project, we're actually going to be trying to
23 look at ways to engage with participants about improving
24 air quality, including finding ways with air filters and
25 that kind of stuff. We are doing air monitoring, paired

1 with biomonitoring in that study. So we're pursuing some
2 of these ideas.

3 But I want to segue real quickly before we end
4 into some good news. Yea. We just posted, and this
5 morning the listserv went you -- you may not have seen it,
6 but we posted all of the data from Pilot BEST and Expanded
7 BEST. So those entire data sets are now available on the
8 web.

9 And I want to especially credit, we didn't --
10 forgot to announce some of our new staff as part of
11 Nerissa's talk. So I want to really credit Jennifer Mann
12 who's here. She's a new Research Scientist IV. She came
13 from UC Berkeley, but she used to work at DPH and OEHHA,
14 so we all -- everybody knows her, and she's been
15 enormously helpful. So Jennifer, with Dan in my group,
16 they worked really hard, really quickly to get that data
17 set posted. So that's really exciting.

18 And then I also wanted to acknowledge Russ
19 Bartlett, who joined my group as a Senior Environmental
20 Scientist. And we got him from CDPH, so it's all in the
21 family.

22 (Laughter.)

23 MS. HOOVER: Russ is working really hard with
24 Duyen on the East Bay Diesel Exposure Project. So we're
25 still doing a lot of great things with some really great

1 new staff.

2 CHAIRPERSON SCHWARZMAN: Thank you, Sara. Could
3 you just refresh everybody's memory about what BEST means?

4 MS. HOOVER: BEST is the Biomonitoring Exposures
5 Study. And it was conducted in the Central Valley in
6 collaboration with Kaiser.

7 So did you want more than that? If so, I'm going
8 to defer over to --

9 CHAIRPERSON SCHWARZMAN: Maybe just key analytes.

10 MS. HOOVER: It's a huge long list of analytes
11 actually. So basically at that point, we were measuring
12 every panel. So I can't rattle it off the top of my head,
13 but if you go to the website -- go to your listserv
14 notice, click on the button, you can see all of the
15 analytes, but -- you know, metals, pesticides, PFCs,
16 phenols. Just everything we can measure, we measured in
17 BEST, basically, I think that's fair to say.

18 Nerissa -- Duyen is nodding her head. So Duyen
19 said --

20 (Laughter.)

21 MS. HOOVER: Okay. Yeah, so it's an incredibly
22 rich data set. And Jennifer -- we've done -- initial, we
23 did quite a lot of analysis of the metals and PFCs data,
24 so the listserv talked a little bit about that. And we
25 have some posters and presentations. But Jennifer is

1 actually going to delve even more deeply into that data
2 set and look at more of the analytes.

3 And we're hoping in November to have two talks,
4 one will delve into the ACE Study, which is the
5 Asian/Pacific Islander Community Exposure Project. And
6 we'll have a lot of analysis of that. That's been an
7 incredibly interesting study, elevated metals in
8 disadvantaged communities. And then Jennifer will present
9 on BEST.

10 So we're making a lot of progress in looking back
11 at the results we already have.

12 CHAIRPERSON SCHWARZMAN: That's wonderful.
13 That's great to hear. It's time to break for lunch.

14 A couple of announcements before we do. So we
15 have an hour and 15 minutes for lunch, but that's what --
16 that we're going to resume at -- promptly at 1:30, so
17 please be back by 1:25. There is a nearby quick dining
18 option. Scrubs Cafe is a five-minute walk away, and there
19 is a map to that in your meeting folder. Come back by
20 1:25.

21 And then just as a reminder for Panel members,
22 please comply as usual with Bagley-Keene requirements and
23 refrain from discussing Panel business during lunch and
24 the afternoon break.

25 So with that, we'll conclude the morning session

1 and resume right at 1:30 thank you.

2 (Off record: 12:16 p.m.)

3 (Thereupon a lunch break was taken.)

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1 A F T E R N O O N S E S S I O N

2 (On record: 1:31 p.m.)

3 CHAIRPERSON SCHWARZMAN: All right. I think
4 we'll restart the meeting. Thank you, everybody for
5 coming back.

6 This afternoon, we have this special session on
7 community exposure to air pollutants, and the role of
8 biomonitoring. We're going to kick off the session with
9 a -- with a presentation by Yana Garcia, who -- and she's
10 going to give us an overview. She was appointed by
11 Governor Brown in June of 2017 to serve as Assistant
12 Secretary for Environmental Justice and Tribal Affairs at
13 the Environmental Protection Agency, CalEPA.

14 And prior to joining CalEPA, Yana was an
15 associate attorney at Earthjustice in San Francisco, and a
16 staff attorney at Communities for a Better Environment
17 serving in Huntington Park and Oakland.

18 Her legal practice areas have focused on
19 environmental justice issues, civil rights, land use,
20 toxics and chemical disclosure, oil and gas extraction,
21 and crude transport.

22 (Thereupon an overhead presentation was
23 Presented as follows.)

24 CALEPA ASSISTANT SECRETARY GARCIA: Hi. Good
25 afternoon. After lunch panel is always fun.

1 (Laughter.)

2 CALEPA ASSISTANT SECRETARY GARCIA: Thank you for
3 having me. My name is Yana Garcia, Assistant Secretary
4 for Environmental Justice and Tribal Affairs at the
5 California Environmental Protection Agency. I was here at
6 the November meeting. And I've been very excited to come
7 back to you all to talk to you a bit about some of the
8 intersections, some of the complementary programs that we
9 have at CalEPA, and in particular today to talk to you all
10 about AB 617.

11 Just waiting for the slides.

12 AGP VIDEO: They're loading.

13 CALEPA ASSISTANT SECRETARY GARCIA: Okay.
14 Thanks.

15 So before I start, I just want to pull back for
16 a moment and just give a little context for the role of
17 the Office of the Secretary and CalEPA with respect to all
18 of our boards and departments. The Office of
19 Environmental Health Hazard Assessment and Air Resources
20 Board who's here to talk to you a bit more about AB 617.

21 --o0o--

22 CALEPA ASSISTANT SECRETARY GARCIA: Out of the
23 office -- I don't love this graphic, so I apologize for
24 the intimidatingly large Governor bubble.

25 (Laughter.)

1 CALEPA ASSISTANT SECRETARY GARCIA: But out of
2 the Office of the Secretary, we oversee and coordinate the
3 activities at five boards and departments, which includes
4 the Air Resources Board, but also the Department of Toxic
5 Substances control, which shares a relationship with the
6 Biomonitoring Program -- has a relationship with the
7 Biomonitoring Program, the State Water Resources Control
8 Board of course, Department of Pesticide Regulation,
9 CalRecycle -- and I feel like I'm forgetting another one.
10 OEHHA.

11
12 (Laughter.)

13 CALEPA ASSISTANT SECRETARY GARCIA: Of course.
14 Hello.

15 (Laughter.)

16 CALEPA ASSISTANT SECRETARY GARCIA: But as I'm
17 sure you could imagine, biomonitoring has a lot of
18 complementary, I think, aspects to the data that we're
19 gathering. Biomonitoring California inputs the
20 interventions studies. Some of the baseline data that
21 we're building is very relevant to the work of not only
22 Air Resources Board, but Department of Toxic Substances
23 Control, as we're updating and enhancing permitting regs;
24 the State Water Resources Control Board, as we're
25 continuing to refine and enhance how we look at delivering

1 the human right to water across the State; certainly, the
2 Department of Pesticide Regulation, as we approach risk
3 management decisions and mitigation guidance on
4 agricultural chemicals and pesticide products.

5 So I say this just because I hope that we can
6 continue this conversation, and that we can come back and
7 revisit how some of the biomonitoring data is also
8 relevant to other programs.

9 --o0o--

10 CALEPA ASSISTANT SECRETARY GARCIA: Now, I want
11 to ground some of today's conversation and what we talked
12 about back in November. As I'm sure you'll remember,
13 Deanna Rossi had a really interesting presentation that I
14 was able to join - I was really grateful for that - about
15 some of the surveys that she did, some of the input that
16 she got from environmental justice stakeholders throughout
17 the State. And so I summarized some of the big picture
18 points that she found, and that her colleagues found
19 throughout their work in surveying 64 individuals, 48
20 organizations throughout eight regions. Air quality
21 concerns, and an interest in air quality issues by far
22 rose to the top, 73 percent, closely followed by air -- by
23 water quality and then pesticides at 56 percent interest.

24 I think this is not a huge surprise. When we
25 think about environmental justice issues and cumulative

1 health burdens throughout our State. I think air quality
2 is among the top concerns, because it's so tangible, and
3 it also leads to such kind of clear health effects for
4 many environmental justice communities.

5 And we've seen a lot of that with respect to AB
6 617. The negotiations, of course, that led to the
7 adoption of this bill, that led to the Governor signing it
8 into effect, clearly had to do with hopefully listening to
9 some of the environmental justice stakeholders bringing
10 into consideration some of the issues that affect groups
11 on the ground, front-line communities as we're continuing
12 the Cap and Trade Program.

13 --o0o--

14 CALEPA ASSISTANT SECRETARY GARCIA: And coming
15 into some of the common recommendations that the groups
16 made, and that Deanna Rossi reported in the last meeting,
17 they had a lot of input on research and methods for the
18 Biomonitoring California project, and many of the programs
19 that we're doing. And those were to use community-based
20 participatory methods in our studies; to add more
21 chemicals to the CARE Study specifically, but I think
22 probably throughout; and to consider studies that will
23 lead to policy change.

24 And I want us to really focus on this when we
25 think about how we're approaching AB 617.

1 --o0o--

2 CALEPA ASSISTANT SECRETARY GARCIA: The
3 requirements of AB 617, which I'll go into in a second,
4 are very much based on monitoring and air pollution
5 reduction. And we're emphasizing in many of our -- in
6 much of work and many of our meetings with key
7 stakeholders the need to take the data inputs that we're
8 getting in AB 617 and create immediate policy change, push
9 for immediate actions to actually reduce community level
10 air pollution.

11 So this is kind of a text-heavy slide, but I just
12 wanted to lay out some of the key requirements from AB
13 617. And those are, first, to develop an emissions
14 inventory. And this would be a public-facing inventory
15 that anyone would be able to access, that deals with
16 criteria -- toxic air contaminants, and criteria air
17 pollutants. And by October 1st, which is very rigorous, a
18 rigorous schedule, as you'll hear from Heather in a few
19 moments, to prepare a statewide monitoring plan for
20 community level air monitoring, and also to prepare a
21 statewide strategy to reduce emissions, and to update that
22 strategy every five years.

23 The final point that we'll emphasize throughout
24 this presentation -- I'm going to leave probably four and
25 five off -- or to Heather to sort of answer questions, but

1 our stories really matter, and should matter to
2 regulators.

3 And more and more particularly what we see with
4 projects like Biomonitoring California, our stories are
5 becoming data stories. And the last thing we want to do
6 is create a sentiment among community residents, and I
7 think some of this we heard back in November from some of
8 the EJ stakeholders, that we're being studied to death.
9 That we just have study after study, and data and more
10 data to show that the problems are persisting.

11 And I think that one of the things I'd like for
12 us to think about as we keep -- as we continue into
13 thinking about AB 617 and the potential overlap with some
14 of the Biomonitoring California work is that the data
15 stories really need to push that action. We really need
16 to start pushing for reductions, and using our studies,
17 our intervention studies in particular to show the
18 effectiveness of some of our efforts to reduce air
19 pollution over time.

20 I think there are some data points that we can
21 use in the more immediate future with respect to AB 617,
22 but I'd also like us to keep thinking about how we can
23 think of the Biomonitoring California work over the longer
24 term

25 As AB 617 is implemented, not just in this first

1 year, but over time in the years to come, how we can use
2 continued data inputs over that same time.

3 --o0o--

4 CALEPA ASSISTANT SECRETARY GARCIA: Now, these
5 are some ideas that I've had about how we could
6 potentially use the Biomonitoring California information
7 and projects in the context of AB 617. And I'm just
8 throwing those out there as nascent ideas - hopefully,
9 we'll be able to build upon them - but really focusing on
10 prioritizing communities.

11 So one of the things that Heather will talk to
12 you more about are the processes that we're undertaking,
13 the analytic processes that we're undertaking to
14 prioritize communities for both air monitoring and
15 community reduction plans.

16 And some of the data that we currently have, for
17 example, the data from the West Oakland Diesel Particulate
18 Matter Study and the Southern California CARE Study can
19 really be used for that purpose. I think one of the --
20 one of the -- going back to the theme of moving forward
21 and not studying our communities to death, I mean, these
22 are communities that have already had quite a bit of
23 studies done. We have air monitoring information. We now
24 have health-based information. And this has been
25 information that's been gathered over a long period of

1 time. So not waiting for new monitoring data or new
2 information to come to light, but really taking early
3 actions now.

4 And this one of the things that the Air Resources
5 Board is really working on with all of the air districts.
6 The role that the air districts play in the implementation
7 of AB 617 is key. So the relationship between not only
8 the State and the air districts, but community
9 stakeholders and the air districts is going to be very
10 important.

11 Equipping communities with better information,
12 and actually supporting the use of this information to
13 push for early actions. This was also something that was
14 asked for, of course, in the November meeting, and using
15 community level baseline data to measure the effectiveness
16 of existing programs, and to measure the effectiveness of
17 our community air pollution reduction strategies that will
18 come down the line.

19 Informing what we can and should be monitoring
20 for. This is something that I hope we can -- we can
21 enhance down the line as well. The monitoring data that
22 we're gathering through AB 617 I think should enhance what
23 we currently know, based on current monitoring data, but
24 also fill in data gaps. So where we're seeing that there
25 may be health impacts that may not be immediately

1 answerable by existing data, how we can figure out where
2 the missing links are in terms of information I think will
3 be really important.

4 --o0o--

5 CALEPA ASSISTANT SECRETARY GARCIA: And I want to
6 leave just a couple minutes for any questions that you
7 might have for this particular introduction. I know
8 Heather will go into much more detail. But if anybody has
9 any questions for me, I'd love to take them.

10 CHAIRPERSON SCHWARZMAN: Yeah. We have five
11 minutes or so for questions before we move on to the next
12 presentation.

13 Sara -- oh, Jenny, sorry, go ahead while Sara
14 gets to the microphone.

15 PANEL MEMBER QUINTANA: I guess I had a general
16 question about how 617 might play out for communities that
17 don't have a voice. What I've seen on some early reaching
18 out to communities was the well-organized communities were
19 being, you know, encouraged to come forward and do
20 monitoring. But even in my own County of San Diego, we
21 have several environmental justice well-recognized
22 communities with -- well organized, including the one
23 where I work in San Ysidro, but there's other ones looking
24 around that I was going to take to the local air district
25 and say these are -- I think, these are environmental

1 justice communities, but right now they don't have a
2 voice.

3 I mean, is there like an agency or a group within
4 the agency that might kind of take on being their
5 representative or keep them involved in the process, or if
6 you have any comments about that?

7 CALEPA ASSISTANT SECRETARY GARCIA: So the Office
8 of Community Air Protection, which Heather is a part, is
9 doing a lot of work on not just reaching out to
10 communities, but really making sure that some of the ideas
11 that are coming from environmental justice stakeholders
12 are being reflected in how we're implementing AB 617.

13 At this stage, we have some pretty general
14 concepts about how we want to see the requirements of AB
15 617 unfold over time.

16 I think one of the things that we hope will grow
17 in the future are the community air grants. The community
18 air grants, I believe, are flexible enough to allow for
19 some really creative work to be done on the -- at the
20 ground level.

21 One of the challenge areas I think for us will be
22 to fund groups that may not already be sort of
23 administratively equipped to take that kind of money.
24 They are substantial grants. I run an environmental
25 justice small grants program out of the Office of

1 Environmental Justice at CalEPA that's \$50,000 grants, and
2 those are difficult for small groups that are struggling.
3 And that may not have the existing infrastructure to take
4 that.

5 But one of the ideas that we've kind of played
6 around with a bit is thinking about having more of a State
7 presence, whether that be a physical body, a physical
8 staff person in some of the air districts to really work
9 with communities over time, not just on sort of one-offs
10 to build a community air pollution reduction plan or to
11 develop a monitoring plan, but actually be there to answer
12 questions, be there to work over the longer term with air
13 districts.

14 I think another thing that we can and are looking
15 to do is flesh out what some of the process requirements
16 are going to be for each air district. I think that will
17 be really important. Some air districts have, you know,
18 environmental justice process requirements already
19 incorporated into how they operate. Whether those are
20 working well or not is an open question, but some air
21 districts have nothing at all. They have far less
22 stringent public process requirements.

23 So I think the other thing that we're hoping for,
24 and really working with the air districts to implement are
25 better public process requirements, better requirements to

1 do outreach, better requirements to bring in community
2 voices, and actually bring in community solutions. I
3 think community ideas for what solutions they want to see
4 with respect to not just stationary source air pollution
5 reductions, but also mobile source air pollution
6 reductions, what programs they want to see in their
7 community, what changes in land use they might want to
8 see. And so those will require a lot of State input over
9 time

10 CHAIRPERSON SCHWARZMAN: Sara.

11 MS. HOOVER: Hi. Sara Hoover, OEHHA.

12 Thank you so much for coming. And it was great
13 to see you reflecting back on, you know, some of what
14 Deanna talked about in terms of our EJ listening sessions.
15 And I just was curious to know if -- in your role, if
16 there's any specific community priorities you're already
17 aware of, you know, high priority air pollution issues
18 that you're hearing about in your role, or if there's
19 anything surprising in Deanna's talk or other things you
20 might add just from your own perspective.

21 CALEPA ASSISTANT SECRETARY GARCIA: Nothing
22 necessarily surprising in Deanna's talk. I like -- I
23 found it to be pretty consistent with what I hear on a
24 regular basis.

25 I think in terms of priorities, the priority that

1 we're placing on addressing cumulative health burdens,
2 cumulative air pollution issues is something that's
3 reflective of what we hear from the community. That's
4 certainly there, I think, in our approach to AB 617.

5 Dealing with pollution around the ports is huge.
6 That's really big. And I'll say that what I hear from
7 many environmental justice stakeholders is that we
8 shouldn't have to wait for -- to, you know, address
9 port-related and freight infrastructure-related air
10 pollution. And I think that's true. I think we see that
11 in West Oakland. I think we see that in Long Beach and
12 Los Angeles.

13 And then slightly less so, but we still have some
14 good data out in some of the inland ports, like the
15 warehouse centralized areas in Riverside and San
16 Bernardino. It's no surprise that, you know, the Mira
17 Loma monitor that's administrated by -- or administered,
18 I'm sorry, by South Coast Air Quality Management District
19 has been giving us a lot of information about how poor the
20 air pollution issues are out there. And they likewise
21 shouldn't have to necessarily wait. So I hear a lot of
22 that.

23 I also hear a lot of interest in looking at
24 pesticide related issues through the AB 617 lens, and also
25 looking at some of the oil and gas related issues that we

1 see in San Joaquin Valley through the AB 617 lens, whether
2 that be from a land-use perspective, using the data that
3 we have in AB 617 as one more tool to push for buffers --
4 health protective buffers, particularly around sensitive
5 receptors in the San Joaquin area, or, you know, looking
6 at ways that we can reduce pollution otherwise coming from
7 those sources.

8 And the pesticide issue is also interesting. I
9 mean, I think from a cumulative health burden perspective,
10 it's hard to deny that there are existing problems there,
11 that there are existing data sets that we have that show
12 how serious the issues are with respect to pesticide
13 exposure, particularly for children, for some of the most
14 vulnerable among us.

15 And, you know, when I talk about how our
16 environmental justice sort of stories or community-based
17 stories matter, I mean, often times those are stories of
18 our health, of our children's health, our family's health.
19 And those are data points certainly, but it's also -- it's
20 human beings. And I think that's where the Biomonitoring
21 California Program really comes into play, because we have
22 that human-centered focus.

23 Although, it is incredibly scientific and
24 sometimes difficult to explain to communities, I think
25 that many community residents respond to the

1 human-centered focus of the Biomonitoring California work,
2 so that's where I think the great synergy could really
3 come from.

4 CHAIRPERSON SCHWARZMAN: Thank you so much, Yana.

5 I have -- I have a couple questions that we'll --
6 I'll defer until the discussion, because they're more
7 appropriate. But I'm particularly -- maybe I'll just hint
8 at one key question, which is, you know, I hear you -- one
9 of the things I hear you saying very strongly sort of on
10 behalf of communities is -- was also from the November
11 session about the need for action rather than study. And
12 yet, Biomonitoring California is a studying program.

13 And so that doesn't mean that there aren't useful
14 things that biomonitoring can do, and that's what this
15 session is about. But I guess I want to ask us to try to
16 think really critically about how study can be designed to
17 inform action, even where it doesn't necessarily look like
18 action on its own, and/or who biomonitoring can partner
19 with to make action come out of the studies that
20 biomonitoring performs.

21 Maybe there are some links we need to do more
22 specifically there. So maybe I could just seed those as
23 questions for a later discussion.

24 CALEPA ASSISTANT SECRETARY GARCIA: Thank you.

25 CHAIRPERSON SCHWARZMAN: Thank you.

1 I'd like to introduce Heather Arias -- sorry --
2 who will talk about transforming California's approach to
3 community air pollution. Heather is Chief of the
4 Community Planning Branch in the newly created Office of
5 Community Air Protection at CARB.

6 Her previous experience at CARB includes serving
7 as Chief of the Freight Transport Branch, where she
8 oversaw the development and implementation of CARB's
9 portion of California Brown's -- Governor Brown's -
10 sorry - California Sustainable Freight Action Plan, and
11 other freight-related programs aimed at reducing
12 emissions.

13 In her more than 16 years at CARB, Heather also
14 served as Deputy Director in the Legislative Office, and
15 began her career working on strategies to reduce statewide
16 criteria pollutant admission -- emissions.

17 Thank you.

18 (Thereupon an overhead presentation was
19 Presented as follows.)

20 MS. ARIAS: Thank you.

21 Thank you for having me here today. My name is
22 Heather Arias, and I work at the California Air Resources
23 Board. So Yana has given us a little bit on AB 617. Some
24 of it also shows up in my slides, so I won't be
25 duplicative and I will try and spend as much time for

1 questions than just going through the presentation. But
2 we wanted to make sure that we gave you a little bit of
3 details on where we're going. We are trying to get a lot
4 accomplished in a very short amount of time.

5 --o0o--

6 MS. ARIAS: So let's start with why. Why is AB
7 617 even here today?

8 Historically, my agency as well as other air
9 quality agencies have looked at air quality, particularly
10 criteria and toxics, more from a regional perspective. We
11 have had a lot of improvement in that, as you think back
12 look at our criteria and toxics impacts to the residents
13 in this State, but there is still a huge disproportionate
14 burden that remains.

15 And you can see on the slide here a recent graph
16 that our Research Division provided that shows you the
17 difference, the delta, between EJ communities in our state
18 and non-EJ communities.

19 So we do have the data to show and prove that at
20 a community level, there are the disproportionate impacts
21 throughout California. Therefore, we need to readjust and
22 we need to provide a community lens on how we are looking
23 at criteria and toxics.

24 We also need to be thinking about the cumulative
25 exposure. So in the past, as we've worked through all of

1 our different requirements, we may have put together state
2 implementation plans for particulate matter, or state
3 implementation plans for ozone, or the scoping plans for
4 GHG. So it's very compartmentalized. More recently,
5 obviously, we have been trying to look at it as a more
6 holistic standpoint, because as you are very well aware,
7 as you move to course correct in one area, you could
8 inadvertently be causing problems in others.

9 So we need to be looking at not only the
10 cumulative impacts of all the pollutants, but at a very
11 granular level in the communities themselves. And we need
12 to take advantage of all the advanced technologies that
13 we're moving forward. And the biomonitoring is one
14 example that we'd like to think about as we're moving
15 forward and trying to figure out how we can show what it
16 is within the communities from the direct public health
17 indicators of how what we're doing and what is happening
18 in the human big questions right now. And we don't have
19 the answer. So hopefully you guys can help us.

20 --o0o--

21 MS. ARIAS: AB 617 has a lot in the bill itself.
22 There's a lot that it's asking. It's asking for emissions
23 reporting, as Yana mentioned. There is best available
24 retrofit control technologies for stationary sources. We
25 are asked to put together a clearinghouse. There's

1 penalties. There's requirements for monitoring plans.
2 There is the requirement for state strategy emission
3 reductions plans. We need to identify communities. We
4 need to do assessments of sources. The districts need to
5 do assessments of their risk reduction audits. And then
6 there is an opportunity for grants. And we're going to
7 get into each one of these.

8 --o0o--

9 MS. ARIAS: First and foremost is the
10 communities. So this bill is all about the communities,
11 and it's all about trying to hear from them and help them.
12 And help them means immediate actions. It doesn't mean,
13 as Yana stated, the concern of don't keep studying me,
14 don't keep studying me. My family has dealt with this for
15 generations.

16 And if you've had the opportunity, then you've
17 heard these stories. You've been able to walk through
18 their neighborhoods. If you haven't, I really encourage
19 you to do so.

20 And prioritizing communities with the highest
21 exposure burdens for two things. The bill is seeking
22 deployment of community air monitoring and development of
23 community emission reduction programs.

24 We are required to focus on disadvantaged
25 communities and sensitive receptor locations. The

1 disadvantaged communities definition refers back to the
2 definition that you are familiar with in CalEnviroScreen.

3 --o0o--

4 MS. ARIAS: There we go.

5 Right now, we are working on trying to identify
6 what we're calling year one communities. We are required
7 at the staff level to provide a recommendation to our
8 board in September of which communities - and I'll go back
9 one slide just real fast - we're recommending for the
10 deployment of community air monitoring, and the
11 development of community emission reduction programs for
12 year one.

13 Now, what we're doing to get information to help
14 us formulate that recommendation is we have released a
15 document that we're seeking input. We're seeking input
16 from the air districts themselves, who will be required to
17 actually implement those programs. We are seeking input
18 directly from community members throughout their state,
19 and we are also doing our own technical assessment.

20 So to try and help answer the question earlier in
21 regards to what about communities that may not have a
22 direct voice, we are doing technical assessments to try
23 and make sure we identify all those communities. One of
24 my colleagues, Vernon Hughes, is here in the room with me.
25 His team is heading up that technical assessment, and we

1 assessment that Vernon's team is conducting, and that the
2 local air districts are conducting as they're putting
3 together their recommendations.

4 --o0o--

5 MS. ARIAS: The bill, along with our requirement
6 to bring to the Board recommendations for selection of
7 communities also requires that we put together a statewide
8 monitoring plan and a statewide strategy.

9 We are collectively calling that the Community
10 Air Protection Program Framework. So right now, we're
11 putting together one document that will meet both of the
12 requirements you see on the screen in front of you. And
13 in the monitoring plan, we are required to talk about
14 current technologies, the existing systems throughout the
15 State, and criteria for the monitoring programs that the
16 districts will deploy.

17 For the statewide strategy, we're required to
18 talk about various methods for assessing the exposure, and
19 contributing sources to the communities. We need to
20 identify strategies that we are going to implement to
21 provide those immediate actions for reducing emissions.
22 And we also need to establish a criteria the air districts
23 will need to follow when they're putting together the
24 emission reduction programs.

25 --o0o--

1 MS. ARIAS: So in order to help that
2 conversation, we released the draft concept paper. It is
3 now last month, because we are in March now. We've been
4 traveling a lot, and I'm really tired. But it is the next
5 month. So last month, we released a concept paper, which
6 is available on our website in both English and Spanish,
7 and we are seeking input on some -- really our initial
8 proposals on how we're going to move forward with all of
9 things I just talked about.

10 Obviously, we're still in the very early stages
11 of this program. We will tell you that we are the first
12 to say that we're not going to get this right the first
13 time around. We know that we're going to go to the Board.
14 We're going to get the Board's input. We're going to put
15 out the requirements of these programs. We're going to go
16 through the first year, and we are going to learn a lot.

17 And the bill itself asks us to update this
18 document once every five years, but it's highly unlikely
19 we will wait that long, because we think we're going to
20 learn a lot, as we're implementing.

21 However, we would like to be able to minimize how
22 wrong we are, so we're working really hard to talk with
23 communities all throughout the state, air districts
24 throughout the state, lots of different government,
25 academia, and others who will be involved in the process

1 moving forward.

2 --o0o--

3 MS. ARIAS: The concept paper itself talks about
4 how we might identify and select communities moving
5 forward. That is an annual process. We will be required
6 to go back to our Board every year for them to determine
7 the next year's of committees -- or, I'm sorry,
8 communities. We are talking about the strategies we will
9 bring forward for reducing the exposure issues. And as I
10 mentioned earlier, both the criteria for the emission
11 reduction programs and the monitoring. There's a few
12 other elements that we'll talk about as well.

13 --o0o--

14 MS. ARIAS: For the strategies that we're
15 considering, we are looking at what has the agency already
16 committed to. We have most recently gone through a few
17 planning processes. Our Board has adopted a statewide
18 implementation plan with a lot of new measures. The
19 Governor's Freight Action Plan was out that also commits
20 us to many new measures.

21 The Board recently adopted the scoping plan. But
22 all of those were done, as I mentioned earlier, with that
23 regional or global focus. So now we're taking a step back
24 and we're thinking about communities specifically
25 throughout the state, and what can we do at the State

1 level to help those communities.

2 We are discussing things like which regulations
3 should we be asking the Board to consider, providing us
4 the guidance to go forth and start promulgating regs.
5 We're looking at what sort of tools can we provide that
6 will help the process moving forward, how can we leverage
7 existing authorities and come up with new innovative
8 strategies.

9 As Yana mentioned, land use is one of the more
10 complicated ones that we're working hard on trying to
11 figure out how we might be able to help make some progress
12 there.

13 The community emission reduction programs are
14 probably the most important to many of the communities
15 themselves. They see these as real opportunities to get
16 that reduction within their communities. So we're trying
17 to figure out how and what are the elements to ensure
18 those reductions, and make sure that they get progress
19 quickly.

20 The bill itself requires that these programs have
21 quantitative emission reduction targets. It requires that
22 there are specific strategies that are deployed within the
23 community. There's an implementation schedule for that,
24 and an enforcement plan for that.

25 We are proposing that additional elements include

1 air quality goals that are reached, that there are metrics
2 identified to help track progress, possibly tie in here
3 with biomonitoring. One of the most important elements
4 that we're proposing that we've been hearing from our
5 community members is that they would like a community
6 steering committee.

7 So we're proposing that both for the emission
8 reduction programs, as well as the monitoring. And then,
9 of course, public engagement plan. Those two last bullets
10 are extremely critical to making sure that these programs
11 work well, and that the community members have a voice.
12 They have a seat at the table. They can inform this
13 process, and they can feel ownership and feel like they
14 have a say.

15 The bill requires that these programs go to the
16 local air district board for approval. So the community
17 steering committee doesn't have the final vote, if you
18 will. However, we want to make sure that they have a lot
19 of say in how it's developed.

20 Of course, they then have the opportunity to go
21 to the air district board and make sure that if they have
22 any concerns, those are expressed. Then the programs
23 themselves come to my board. So after the local air
24 district adopts the program, it has to come to the
25 California Air Resources Board for adoption. So that is

1 definitely -- we need to make sure that these plans
2 clearly articulate how they're going to get to action.

3 --o0o--

4 MS. ARIAS: Community engagement I mentioned
5 earlier. That is a corner stone of all of this. It is
6 very important and key. We started this process last year
7 with informational meetings at night. This is a picture
8 of one of them throughout the state. We did have an
9 informational meeting at our board. We've been partnering
10 with the local air districts who were also doing community
11 meetings at night throughout the State.

12 We just finished three informational summits
13 throughout the State. And I think thus far, we've gone to
14 and had approximately 60 plus meetings with various
15 communities, business, academia, air districts, and others
16 in this process. But we recognize that we still need to
17 do a lot more to make sure that everyone has a voice in
18 this process.

19 The community engagement that you see here are
20 the requirements that we are considering of the local air
21 districts when they're going through their process. We
22 are suggesting that they form a community steering
23 committee, that they have regional workshops, that they
24 have community level informational meetings, that they
25 ensure that those -- information is translated in the

1 appropriate language, they designate a contact, there's a
2 website, and that they have specific board hearings.

3 So we are trying to recognize and implement what
4 we've been hearing from the community members, that they
5 need to have more opportunities to voice their concerns.

6 --o0o--

7 MS. ARIAS: Other items that we're working on
8 include resources for outreach, land use, and
9 transportation. On this slide, it shows you what we are
10 committing to do this year. Right now, because we're
11 putting together the framework document, and we're trying
12 to work on selecting the first year communities, really we
13 are only going to have an opportunity to compile some
14 existing resources.

15 After though this year, we hope to be able to
16 develop some new tools, and look at some of the existing
17 tools, see where we can go on land use, see what we can
18 provide some help on.

19 --o0o--

20 MS. ARIAS: In the air monitoring, we're also
21 looking for opportunities to build on and deploy some
22 newer technologies. As part of that, we are building an
23 air monitoring resource center. It will have various
24 tools and criteria for the plans, best practices, and most
25 recent updates.

1 We are also working on a data display and
2 communication portal that will take the data from all of
3 the different air monitoring, from the emissions
4 reporting, the air quality data that we have, and put it
5 in one place that is hopefully accessible and
6 understandable from all residents in the State. That's
7 the objective. This is going to be a longer term thing as
8 we're working with contractors to do this.

9 --o0o--

10 MS. ARIAS: We touched briefly on the enhanced
11 emissions reporting. Right now, some of the larger
12 sources in our State do report to the local air districts.
13 Depending on which rule we're looking at, it can be
14 somewhere as every four years.

15 The bill does require that there be annual
16 reporting now of many of these sources. So we are working
17 with the local air districts to figure out what is the
18 best way to move forward and meet this requirement. Our
19 staff back at Sacramento are working on a reporting
20 regulation that will most likely go to our board later
21 this year.

22 --o0o--

23 MS. ARIAS: The technology clearinghouse, we are
24 working on another resource that will be online. The
25 objective here is to be able to provide one place that a

1 community resident can go to. Eventually, the vision is
2 that they could go to their street, they could click on a
3 source, they could pull up a visual tool that will show
4 them what controls are being deployed at that source. It
5 can then show them how that compares to other sources
6 within the State, what rules are applicable, and who has
7 the regulatory authority associated with that particular
8 source.

9 --o0o--

10 MS. ARIAS: So we are working on incorporating
11 the stationary components that exist now from the local
12 air districts, the mobile, then area rules. But
13 obviously, our long-term vision is going to take a little
14 while.

15 --o0o--

16 MS. ARIAS: Funding has also been a big key
17 critical component of this. Last year, the legislation --
18 legislators gave \$250 million for incentives for mobile
19 sources with the majority of it going to Bay Area, San
20 Joaquin, and South Coast, as you can see on the slide.

21 Those funds are being spent through our
22 traditional Carl Moyer programs, and our Proposition 1B
23 program. And those are to upgrade or replace existing
24 diesel equipment.

25 As a side note, the Governor has actually

1 proposed another 250 million this year, but not just for
2 mobile sources, also stationary. So we'll see how that
3 moves forward.

4 Five million dollars was also provided for the
5 community assistance grants, as Yana mentioned earlier.
6 The solicitation is open for that now, and applications
7 are being accepted until mid-April. And that's also
8 available on our website both in English and Spanish.

9 Ongoing public engagement. As I mentioned, it's
10 key. We'll just keep going, and we'll always say yes.
11 We're very concerned that we're not going to be able to
12 really get to all of our community members. So it's great
13 to be able to talk to folks like you who have also had
14 those opportunities and hear your opinions.

15 --o0o--

16 MS. ARIAS: Moving forward, as I mentioned, we
17 already released our draft concepts. We just finished up
18 our summits. The air districts are in the process of
19 doing some community meetings now. We are providing our
20 board and informational update later this month. That is
21 on webcast, if you are interested. March 22nd is right
22 now where we're planning on.

23 May we will be releasing the next version of that
24 framework document I mentioned. In June, we will be doing
25 workshops and community meetings throughout the State. So

1 if you have communities that you aren't sure if they're
2 being heard, we would ask that you send them our way. And
3 we'd love to talk to them, not only then but now.

4 And then in September, our board is going to
5 consider our recommendations for the communities
6 themselves as well as the planning documents.

7 --o0o--

8 MR. ARIAS: Last, this is our website. So all
9 that information I talked about, if you're interested in
10 reading it, here is where it is, as well as a lot of other
11 materials.

12 We also have an email in English and Spanish, so
13 if you have and are aware of community members that we
14 should be helping or talking to, please send them our way.
15 We'd love to talk to them. And I don't know if we have
16 any time --

17 CHAIRPERSON SCHWARZMAN: Yeah, we do.

18 MR. ARIAS: Okay.

19 CHAIRPERSON SCHWARZMAN: Thank you very much,
20 Heather.

21 MR. ARIAS: Ten minutes for questions.

22 CHAIRPERSON SCHWARZMAN: Yeah, we have 10 minutes
23 now for questions, starting with the Panel.

24 I have some, but I'll wait.

25 Okay. I'll start.

1 MS. ARIAS: Okay.

2 CHAIRPERSON SCHWARZMAN: One is you know we talk
3 a lot about communities, but I have a question about what
4 scale of community you're talking about, and I imagine
5 there's a range. But, you know, there's the census tract
6 level that's in CalEnviroScreen, or there's a specific
7 neighborhood, you know, within a certain zone of a
8 agricultural field, or a CAFO, or whatever, or there's
9 communities organized around -- that aren't geographic,
10 but there are organized around particular, you know,
11 exposures or sources. So how are you thinking about that
12 and working at the different scales?

13 MS. ARIAS: So I have a very unsatisfactory
14 answer for you, and that we don't have an answer, and
15 we're not planning on answering that. And the reason
16 we're not planning on answering that is because we think
17 that's best defined by the communities themselves. And so
18 we have asked the air districts, when they're putting
19 together their recommendations, and they're working with
20 their communities to be able to define that for each of
21 the recommendations they put forward.

22 We're also asking for the community members
23 themselves to do that. We've learned very quickly, as we
24 travel around, that everybody defines community very
25 differently. And they -- we need to hear from the

1 communities themselves as to what they believe is that
2 geographic boundary, and how is that defined.

3 So we are looking for those in the
4 recommendations. And when we go to our Board and provide
5 the recommendation, obviously at that point, we will have
6 a geographic boundary, a description of the community, so
7 on and so forth.

8 CHAIRPERSON SCHWARZMAN: I appreciate that sort
9 of primacy for community self-identification. I wonder
10 though, you know, you had -- you presented in your piece
11 about how you're identifying communities. This piece of
12 like CARB's own criteria, particularly addressing this
13 issue like that Jenny raised about which communities are
14 not necessarily self-identifying and coming forward.

15 MS. ARIAS: Right.

16 CHAIRPERSON SCHWARZMAN: And so that still feels
17 like a relevant issue to me, not just to leave to people
18 to come forward.

19 MS. ARIAS: Right.

20 CHAIRPERSON SCHWARZMAN: And so that was really
21 my question is when you're looking at a community other
22 than the way that they're defining it themselves, you
23 know, in --

24 MS. ARIAS: Right.

25 CHAIRPERSON SCHWARZMAN: -- to try to find based

1 on the knowledge that already exists about who is
2 disproportionately exposed, what scales are you thinking
3 about?

4 MS. ARIAS: Yeah. So I think all the different
5 data sources, as you mentioned, there are different scales
6 for the different data sources as well, all the way down
7 to the census tract, county, so on and so forth. So our
8 objective with the technology assessments work is to make
9 sure that we're not missing any of those hot areas, if you
10 will.

11 We can't verify that, until we get in all of the
12 recommendations from the communities, and the air
13 districts, but what we are trying to do now is go through
14 all that analyses and have that ready, so that once we get
15 through that process there isn't anybody that we've seen
16 through all the different analyses that we've been that's
17 not showing up.

18 The other thing to keep in mind is these
19 first-year communities, we would expect a number of them
20 to be pretty small, as we're going through and starting
21 and learning. So the fear of missing a community, we are
22 very concerned about it. Looking for new data sources.
23 Not so much that what if I don't have them for year one,
24 but what if I get to two or three and somebody who has an
25 extreme high level of cumulative exposure still hasn't

1 shown up on our list.

2 So we're always looking for new ways to find new
3 data to help us with that, and to reach out to communities
4 that may not be aware.

5 CHAIRPERSON SCHWARZMAN: One of the things I have
6 in mind, if you don't mind --

7 MS. ARIAS: Yeah.

8 CHAIRPERSON SCHWARZMAN: -- is using the science
9 that we have to think beyond geographic communities. You
10 know, certainly you're aware of and trying to target, you
11 know, sensitive receptors. And I just think about like
12 the science that we know about how kids who have asthma,
13 if they're from a low socioeconomic status, the
14 implications of any given level of air pollution exposure
15 are going to much more severe.

16 MS. ARIAS: Right.

17 CHAIRPERSON SCHWARZMAN: And so that's not a
18 geographic community. It's kids with asthma who have a
19 low socioeconomic status.

20 MS. ARIAS: Right.

21 CHAIRPERSON SCHWARZMAN: And those -- that's not
22 necessarily like a well-defined community that's going to
23 come to the process.

24 MS. ARIAS: Right.

25 CHAIRPERSON SCHWARZMAN: So anyway, I just wonder

1 maybe that's year two or year 3. But if that's --
2 has a -- if that -- if there's a way that that's working
3 into the identification of communities.

4 MS. ARIAS: Yeah. No, that's a great question.
5 And, yes, so the way we're thinking about that is because
6 that is a -- that is a community that is more of a
7 statewide community. So when we're thinking of the
8 strategies that we need to bring to the table, we're
9 thinking about strategies that we should be deploying that
10 can help all communities statewide. So hopefully, the
11 strategies that we are thinking about will help that
12 definition of community, if you will.

13 For the emission reduction programs, it is a much
14 more narrowed granular focus of a smaller geographic area.
15 So we are trying to take both approaches, but that's a
16 good point, and we should make that more clear. And when
17 we are -- come out with the May version, if there are
18 other ideas that you think we should be considering or
19 even now from that statewide perspective, we'd love to
20 hear it.

21 CHAIRPERSON SCHWARZMAN: Great. Other questions?
22 Tom.

23 PANEL MEMBER MCKONE: Kind of a couple questions.
24 One is do you have a target? I mean, I know communities
25 is a different issue, but do you have a target for how

1 many mobile source trackers and stationary source trackers
2 you have that you can set up a resolution, like what level
3 of resolution.

4 MS. ARIAS: Yeah, that's a -- no targets are set
5 yet. The emission reduction programs for a particular
6 community will have targets for them at a granular level.
7 And we would expect that to be developed in conjunction
8 with community members and others with that steering
9 committee. So we're not looking at a target per se for
10 each community, other than certainly we have a statewide
11 target of eliminating that Delta that we showed you in
12 that first screen, right, in order to make sure that all
13 communities are on the same playing field. So that's our
14 overarching target at this point.

15 PANEL MEMBER MCKONE: Another sort of follow on
16 the same topic. There's -- since about, I think, 2014,
17 the Google street-view cars have been doing air quality
18 monitoring.

19 MS. ARIAS: Right.

20 PANEL MEMBER MCKONE: Is there any thought that
21 you could work with them or is that a usable option?

22 MS. ARIAS: Yeah. Actually, we are working with
23 them. And our Research Division has some contracts with
24 them. In fact, we are often thinking about how else can
25 we use some data, working with them to get more data. So

1 the short answer is, yes, we are working with them. If
2 there are particular ideas that you think we should maybe
3 even bring to the table in our work we'd love to hear it.

4 PANEL MEMBER MCKONE: Just one quick thought --

5 MS. ARIAS: Sure.

6 PANEL MEMBER MCKONE: -- is they record a lot
7 more than air quality.

8 MS. ARIAS: Um-hmm.

9 PANEL MEMBER MCKONE: There's a lot of visual
10 information --

11 MS. ARIAS: Right.

12 PANEL MEMBER MCKONE: -- that they pick up. I
13 mean, like, you can see gas stations, you can see
14 factories and everything --

15 MS. ARIAS: Yeah.

16 PANEL MEMBER MCKONE: -- on the same street-view
17 camera. So it might be an opportunity of not only looking
18 at what it's measuring, but also doing attributable
19 sources --

20 MS. ARIAS: Yeah.

21 PANEL MEMBER MCKONE: -- so that you might do
22 some enhancements -- modeling enhancements --

23 MS. ARIAS: Right.

24 PANEL MEMBER MCKONE: -- once you have that kind
25 of data.

1 MS. ARIAS: That's a good point. Thank you.

2 CHAIRPERSON SCHWARZMAN: José.

3 PANEL MEMBER SUÁREZ: Yeah. What's the funding?
4 How much funding is there yearly for AB 617?

5 MS. ARIAS: Yeah. So the first year of funding,
6 as I, mentioned the 255 million, the air districts also
7 received 27 million. That was only one year of funding to
8 help them start the program, and we at ARB also received
9 \$11 million of one year in funding. So there's not
10 continuous funding for either us or the air districts, and
11 the 255 was a one-year proposal as well.

12 In this year's proposal, the Governor has
13 proposed, as I mentioned, another 255 million, and some
14 funding to help us support moving forward.

15 PANEL MEMBER SUÁREZ: How much of that -- so
16 there are a lot of different components to it. One, of
17 course, monitoring, and then dissemination and
18 implementation really is one of the biggest chunks, right?
19 So how is that -- so what proportions of the budget are
20 allocated for that roughly?

21 MS. ARIAS: Actually, the 27 -- or you're talking
22 about the 27 million the air districts are using or are
23 you referring to --

24 PANEL MEMBER SUÁREZ: From the -- yeah, from the
25 yearly budget for --

1 MS. ARIAS: Okay. So the 27 million that the air
2 districts received, most of that is being used just to
3 start the initial implementation of getting this program
4 moving forward.

5 The outreach getting ready for the emission
6 reduction programs and the monitoring. Some of the bigger
7 districts already have some monitoring funds that they
8 will be putting forward to start the initial launch, if
9 you will. But they are already in the process of trying
10 to quantify, and that's something we ask of them to
11 quantify what would be the resource needs for monitoring.

12 In our particular budget, we did receive some
13 funding for staffing, as well as some of the contracts.
14 Walter, did you want to speak to the contracts that we
15 received funding for?

16 MR. HAM: Is this on?

17 Not on?

18 On. Okay. Hi. So I'm Walter Ham with CARB.

19 AGP VIDEO: Raise the mic.

20 MR. HAM: Oh, sorry. I should know that.

21 So we had number of contracts. We have one
22 contract to fund a community based participatory research
23 program in IVAN, Imperial, that's to continue
24 community-based monitoring for another year, while also
25 building materials for best practices and guidance that

1 can be shared with other communities.

2 We have a contract for a data portal. So as
3 Heather mentioned, all of this information needs to get
4 somewhere and be displayed, and to help share information
5 statewide, so that those who don't know how to get to the
6 data have better accesses and better transparency to it.
7 So there is a contract for that as well.

8 We have a few smaller research contracts to
9 develop some technologies. We have a contract to fund a
10 black carbon sensor that can be used -- that's been used
11 in West Oakland actually previously, but to advance the
12 science there, and that --

13 PANEL MEMBER SUÁREZ: And that's under the grant
14 program that you have --

15 MR. HAM: Oh, do you mean the --

16 PANEL MEMBER SUÁREZ: -- or is that separate?

17 MR. HAM: Which grant program?

18 PANEL MEMBER SUÁREZ: So there's a component for
19 this actually grant -- providing grants to communities,
20 and is it also for development of technologies, or is that
21 separate?

22 MR. HAM: Right. So that's -- I think that's
23 Veronica's program, and I think Heather would be better to
24 speak to that.

25 MS. ARIAS: Yeah, I can -- I can talk to that.

1 So what Walter is talking about is the funding that we
2 received, that ARB received, for implementation. What
3 you're asking about is the \$5 million for the community
4 air grants. And that's the solicitation that's open now.
5 And it is for the communities and nonprofit organizations
6 to be able to apply. And, yes, monitoring is one of the
7 applicable funding sources.

8 CHAIRPERSON SCHWARZMAN: Great. Thank you very
9 much. We need to move on and I have a very quick
10 question. Is all of the monitoring outdoor?

11 MS. ARIAS: Yes. Walter is nodding yes.

12 CHAIRPERSON SCHWARZMAN: Okay. Thank you. Thank
13 you.

14 Okay. I'd -- thank you so much to both of you.

15 MS. ARIAS: Thank you.

16 CHAIRPERSON SCHWARZMAN: And we'll be coming back
17 to you in the discussion session.

18 I want to introduce the next speaker, who is
19 Victor De Jesús, who will present on the advances in
20 biomonitoring methods for volatile organics. Victor is
21 the Chief of the Volatile Organic Compounds Laboratory,
22 Tobacco and Volatiles Branch at the CDC. His lab
23 characterizes human exposure to harmful VOCs as part of
24 CDC's National Biomonitoring Program.

25 Victor has published over 50 peer-reviewed

1 articles and coauthored three book chapters. His work has
2 earned him two CDC/NCEH/ATSDR Honor Awards for Excellence
3 in Public Health Practice. He holds a Ph.D. in analytical
4 chemistry from the Georgia Institute of Technology.

5 Thank you.

6 (Thereupon an overhead presentation was
7 presented as follows.)

8 DR. DE JESÚS: Thank you And go Jackets.

9 Good afternoon, everybody. It is my pleasure to
10 be here with you. And thank you for the opportunity to
11 share some of the work that we do at the VOC laboratory at
12 the CDC, and how this work supports the nation's
13 biomonitoring efforts.

14 --o0o--

15 DR. DE JESÚS: So as a quick refresher, everybody
16 here probably knows NHANES very well, for -- but for those
17 of you who may not, NHANES is the National Health and
18 Nutrition Examination Survey which is conducted by the
19 National Center for Health Statistics, part of CDC.

20 This survey, it's very unique, and arguably the
21 foremost biomonitoring effort in the world. And we follow
22 approximately 10,000 individuals in two-year cycles. And
23 some folks may consider this a bit intrusive, because we
24 ask just about everything.

25 And this is done in an effort to truly understand

1 what the status of the nation's population is. And not
2 just that, we also want to understand what is -- what are
3 the different environmental exposures. And this is where
4 our laboratories come in to support this effort. Over 150
5 analytes that are presented as part of the NHANES reports
6 are analyzed within our Division of Laboratory Sciences.
7 Our VOC laboratory provides support for approximately 120
8 of these analytes. And I'm going to share with you some
9 of the methodology that we use to provide these invaluable
10 data.

11 --o0o--

12 DR. DE JESÚS: So our laboratory has the
13 capability for five analytical methods, three of which I
14 will discuss in the time that I'm here with you today.
15 I'm going to start with the volatile organic compounds in
16 blood assay, which currently includes 44 different
17 analytes. And we use gas chromatography mass spectrometry
18 to detect these compounds in blood.

19 The second assay that I'm going to discuss is the
20 volatile organic compound metabolites in urine.
21 Currently, we can detect about 30 different metabolites of
22 parent VOCs. And I'll go into a list in a little bit.
23 And we do this by liquid chromatography mass spectrometry.

24 The last method that I'm going to actively
25 discuss today is a fairly new method that we developed to

1 look at analytes, metabolites of diisocyanate exposure.
2 And this is somewhat the oddball, if you will, within the
3 mission of the VOC laboratory, But I'll explain how this
4 came to be, and how it really fits within our mission.

5 We have two other methods that I will not discuss
6 today in the interest of time, but we -- but certainly, I
7 can provide more information upon request. And one of
8 them is aliphatic diamines. This includes some
9 diisocyanates. And also by liquid -- performed by liquid
10 chromatography mass spectrometry.

11 And we also looked at aldehydes in serum. This
12 we actually performed for one NHANES cycle. And again,
13 more information on that upon request. These assays are
14 truly meant to be complementary. And the kind of picture
15 we can provide to the National Center for Health
16 Statistics, so that we can better explain what some of the
17 VOC exposures are and may be -- will be in the future for
18 the population.

19 --o0o--

20 DR. DE JESÚS: So let me start by the seminal
21 assay that came out of our laboratory, which is volatile
22 organic compounds in blood. And here represent the
23 reference for the method. As a side note, all of the
24 methods that I'm going to be discussing with you today
25 have been published, and are available in -- and I believe

1 I sent them all to Sara, so they're all online.

2 This assay -- well, the latest variation of it
3 was published originally in 2006 and has been used -- has
4 been presented in NHANES for approximately 12 years, 14
5 years now. So we have a lot of data where -- and we --
6 where we can really study what the population's exposures
7 to VOCs has been.

8 --o0o--

9 DR. DE JESÚS: So I'm going to bore the
10 non-chemists in the crowd a little bit with some of the
11 specifics of what we do. This assay, while it's perhaps
12 one of the most simple assays that we have, really
13 requires a lot of preparation. Namely, we are all used --
14 if you have ever given blood, you are used to seeing
15 Vacutainers with EDTA, or heparin, or some other stuff.
16 Our Vacutainers are especially cleaned in our laboratory
17 for a period of three months to ensure that they are truly
18 VOC free.

19 So the compounds -- the concentrations that we
20 report, they are very, very accurate. And this is
21 certainly a point of pride for our laboratory. We spend
22 the time and the effort in cleaning the Vacutainers,
23 removing -- of course, it's not completely VOC free, but
24 it's pretty dang low. And we also coat them with the
25 anticoagulant. So we are the only unit actually handling

1 these Vacutainers.

2 We ship these Vacutainers to the mobile
3 examination units that NHANES uses, and then they come
4 right back to us. From that blood sample, we then take a
5 three milliliter aliquot, which we then introduce an
6 internal standard. And our internal standard contains
7 stable isotope labeled compounds for every single analyte
8 that we test. So we are truly doing perhaps the most --
9 exacting, the most accurate determination of these
10 concentrations in blood.

11 This assay has about a runtime of about 30
12 minutes or so. We are fortunate to have enough equipment
13 to be able to process approximately 2,000 samples a year
14 in our laboratory without any significant backlog of
15 samples, as they come in. So they're analyzed fairly
16 quickly. That way we can preserve the integrity of the
17 samples.

18 This assay has been in existence, as I mentioned
19 earlier, for well over 12 years. And it offers a lot of
20 advantages. This assay really looks at acute exposure.
21 In other words, if those participants that come into the
22 examination unit and give blood, we can tell their
23 exposure perhaps in the past 30 minutes to one-hour,
24 before they walk through the door.

25 The examination centers are actually very low in

1 VOCs. We work with NCEH to ensure that there are no
2 confounding exposures while people are there. And if
3 there are, we could actually tell, but that's a story for
4 another day.

5 (Laughter.)

6 DR. DE JESÚS: So this method is really, really
7 useful to the determine in the short-term, or, you know,
8 exposures that have occurred very -- just preceding a
9 person's visit. So that's very unique. Now, on the flip
10 side to that, we cannot really tell whether a particular
11 result has been the result of a chronic exposure. And I'm
12 going to get to that in a minute. But I just want to show
13 you what, as a chemist, really gets me going.

14 --o0o--

15 DR. DE JESÚS: And that's just a typical output
16 from our analysis. Every single peak on that slide
17 represents one compound that we can analyze with this
18 method. And we are -- again, by using stable isotope
19 labeled internal standards, the results are very accurate.
20 And we've got years of experience with this method that
21 really helps us analyze the data, and provide scientific
22 insight into what a particular exposure may have been.

23 --o0o--

24 DR. DE JESÚS: Now, as I mentioned, this really
25 is good -- this method that is very good for looking at

1 DR. DE JESÚS: So very briefly, our assay only
2 requires about 50 microliters of urine. So it's a very
3 easy -- there are no significant sample preparation
4 requirements, unlike what I just described for the blood.

5 So any collection cup will do. We essentially
6 examine people whether they've been smoking all kinds of
7 combustible products or whether they have been in
8 occupational environments, that they may have been
9 exposed, et cetera. And we just collect their urine and
10 analyze it. So it's very, very simple, what we call in
11 the lab dilute and shoot. Take a little bit of urine,
12 dilute it, add the internal standard, and voilà, you get
13 urinalysis. Folks it really is that simple. So that's
14 what's so unique about this assay.

15 And we have been able to adjust the assay, so
16 that it is extremely high throughput. We have four
17 instruments, and we can analyze thousands of specimens in
18 a year. And I'm going to get into that later on. But I
19 just want to emphasize the simplicity of the assay, and
20 certainly an assay that could be adapted by any laboratory
21 with a mass -- with a UPLC and mass spec system.

22 So wink, wink.

23 --o0o--

24 DR. DE JESÚS: Here we go. So since I like
25 looking at chromatograms, here's another sample

1 chromatogram for this assay. And every peak corresponds
2 to one particular metabolite. A lot of these metabolites
3 are mercapturic acids. Some of them are not. We've been
4 able to leverage the chemistry of mercapturic acids to try
5 to capture as many of these metabolites as we possibly
6 can.

7 Right now, as I mentioned, we're looking at 20
8 parent VOCs. We are getting ready to add three more into
9 the suite with the same assay. So we're very excited
10 about that. This is definitely not a static assay. And
11 it offers truly complementary information to the blood
12 VOCs assay.

13 --o0o--

14 DR. DE JESÚS: The third assay that I'd like to
15 discuss is the aromatic diamines in urine. And this is
16 what I referred to earlier as the diisocyanate exposure
17 metabolites. Diisocyanates are products that are present
18 in polyurethane foams. The metabolite chemistry is very
19 interesting. And this is -- it's sort of a fortuitous
20 cascade of events. Our previous laboratory chief had an
21 interest in some amine compounds. And as we started
22 looking more at the literature, we also found some reports
23 of babies in NICU units that had been exposed to some of
24 these compounds.

25 So we're like, whoa, this is really cool, and

1 I'll bet we can do this. So we have a fantastic chemist
2 who spent a significant amount of time developing this
3 assay to look at these metabolites. And right now, these
4 assays -- there's one of them actually that's found in
5 hair dye. So those folks that dye their hair black, for
6 example, get a significant exposure to one of these
7 compounds. So there's actually a few literature reports
8 out there.

9 So we really wanted to look at this. And while
10 technically not a VOC in the classical sense of the word,
11 meaning not really volatile, these are compounds that,
12 given their chemistry, present very unique opportunity to
13 study particular exposures from either consumer products,
14 or furniture, or some other environments. So this was
15 sort of a long way around to say our laboratory certainly
16 has the capability of looking at different types of
17 exposures in biological matrices.

18 --o0o--

19 DR. DE JESÚS: So this one is almost just as
20 simple. The sample requirement again is very low. We
21 only use 250 microliters of urine this time, but the
22 sample prep is significant. We have to acidify, and then
23 treat with ammonia, and all these kinds of things. So
24 it's kind of a time-consuming and labor-intensive assay.

25 We added these analytes on to the NHANES suite.

1 And I'll get to that in a minute. We continue to perform
2 the assay, and we are learning a lot about the
3 population's exposure to these diisocyanate compounds.
4 And it's quite interesting.

5 --o0o--

6 DR. DE JESÚS: So this is the least interesting
7 chromatogram, seeing that we are only looking at five
8 analytes even. Sixty day. These are toluene diisoamines,
9 which are the metabolites of toluene diisocyanates. And
10 PPDA is paraphenylenediamine. That's the biomarker --
11 that's the metabolite of the product found in black hair
12 dye. So, yeah, this was actually a very interesting assay
13 that we developed.

14 --o0o--

15 DR. DE JESÚS: Further evidence of the capability
16 of the laboratory to be able to assist different types of
17 biomonitoring investigations. So these three assays are
18 currently active and in use, and we are providing data to
19 NHANES to look at the population levels of these
20 biomarkers of exposure.

21 However, we are continually looking at ways to
22 improve not just the data that we provide, but, you know,
23 the opportunity to look at different compounds, different
24 metabolites that may help paint a clearer picture of what
25 the population's exposure truly is to some of these

1 compounds.

2 And one compound in particular we're paying a lot
3 of attention to is benzene. Benzene, of course, everybody
4 is familiar with it, carcinogen. Ubiquitous. And benzene
5 also gets metabolized upon exposure. So we're focusing
6 our efforts for the VOC metabolites assay into two
7 metabolites that have been reported in the literature,
8 muconic acid and phenylmercapturic acid.

9 So these compounds, we are developing a separate
10 assay to really drill down on a person's exposure to
11 benzene, because the current assay does not really work
12 for muconic acid. The chemistry is just a little
13 different. And for a phenylmercapturic acid, our
14 colleagues in Canada are actively measuring their
15 population's exposure to benzene using phenylmercapturic
16 acid. And we have -- we're trying to learn from them how
17 they're doing, because they seem to be doing it just
18 right.

19 So there's certainly a lot of room for
20 improvement in some of the activities that we undertake,
21 and we certainly want to collaborate with other
22 laboratories, so that we can do a better job of
23 characterizing the exposure.

24 In addition to that, we are looking, as I
25 mentioned earlier, to a few new metabolites. And I want

1 to share those with you. The parent -- the first parent
2 compound is methylpyrrolidone which is, of course, found
3 in paint and coating removal products.

4 Furfural and 5-hydroxymethylfurfural which are
5 compounds that are found in e-cigarette vapor. So these
6 compounds are also metabolites. Well, their metabolites
7 can also be found in urine. So the next version of our
8 VOC metabolites assay is going to include these
9 metabolites, so that we can really start painting a
10 picture of what vaping activities actually entail, because
11 most people think, well, you're not actively burning
12 something, therefore the exposure to combustion products
13 does not exist. And while there is some truth to that,
14 does not necessarily mean that it's a safe exposure,
15 but -- and I'm going to leave it right there, because then
16 I'll get into trouble.

17 (Laughter.)

18 DR. DE JESÚS: And one other class of compounds
19 that we have a keen interest in is, is terpenes. As you
20 know, any -- in many places that you walk into, people are
21 employing plug-ins, fragrances, Lysol, all of these kinds
22 of products. They can contain a lot of terpenes.

23 Also, burning different natural products produces
24 terpenes. And there's very little information about the
25 population's exposure to these kinds of compounds. So for

1 the NHANES 19 -- 2019 to 2020 cycle, we're going to start
2 looking at some of these terpenes. And it is my hope that
3 we can also adapt some of it. We're looking at it to see
4 how it gets metabolized in vivo. And hopefully, we can
5 identify a metabolite that we can follow using our assay,
6 so that we can get a more complete picture -- and I just
7 spilled water here. Sorry -- from exposure to these
8 compounds.

9 We also need to find out how they behave upon
10 combustion. So I'm hoping our laboratory can perform some
11 of those studies as well.

12 --o0o--

13 DR. DE JESÚS: So I hope I have convinced you
14 that we're doing really cool stuff in the VOC laboratory.
15 And I want to share with you some of the successes we had
16 in this last fiscal year.

17 We were able to report over 600,000 analyte
18 results for the population. We are involved with NHANES
19 as I mentioned. And some of you may know the Population
20 Assessment of Tobacco and Health Study that FDA and the
21 National Institute for Drug Abuse are performing together.
22 As you know, FDA received regulatory authority to issue
23 regulations on tobacco products. And part of that mission
24 involves, well, generating the numbers that are needed to
25 promulgate regulations.

1 Our laboratory provides a lot of that data. And
2 for us specifically, that means over 11,000 samples a year
3 from a different cohort of people, for which we provide
4 data on VOC metabolites. So our laboratory keeps a little
5 busy, because we -- we look over 20,000 samples a year.
6 And we are very fortunate that we have the ability to
7 perform high throughput testing. Frankly, it's the only
8 way we could do it. Otherwise, we would be drowning in
9 blood and urine, and that just does not sound fun.

10 (Laughter.)

11 DR. DE JESÚS: So not only can we do this for low
12 levels of metabolites in VOCs, we also get involved in
13 occupational and other environmental studies. And here, I
14 have some examples on this slide. I would like to
15 highlight the Gulf Coast residents study that we
16 performed, because something really cool came out of that.

17 You all may remember the Deepwater Horizon
18 incident that happened in the Gulf of Mexico a few years
19 back. And a lot of the Gulf residents complained of
20 exposures to the petroleum that was washing up. Our
21 laboratory was able to analyze some of those specimens,
22 and issue the results, which unfortunately I cannot really
23 go into a lot of detail about.

24 But suffice it to say, that it gave us a perfect,
25 perfect, perfect set of numbers, so that we could build an

1 artificial neural network, a statistical approach, where
2 we could essentially create a profile or a signature, if
3 you will, of petroleum product exposure.

4 We were able to successfully apply that concept
5 to NHANES. And we identified indeed a few participants
6 that, after we looked at the questionnaire from NHANES, we
7 were able to unequivocally determine that, yes, they had
8 indeed been exposed to petroleum. Now, part of NHANES,
9 our laboratory does not have access to a lot of those
10 questions. The answers to the questions, it's all
11 basically anonymous. All of these samples get
12 de-identified, so we were pretty stoked about it. We
13 published that method, and I think I sent that to you
14 also, Sara.

15 MS. HOOVER: Yes.

16 DR. DE JESÚS: So read the paper. It's actually
17 really cool. So unique data sets do enable us to provide
18 significant intellectual input into the characterization
19 of exposures. And we also help out some laboratories
20 around the world. And specifically, we helped out these
21 folks in Sweden, where they were -- they had a cohort of
22 people working in a factory where diisocyanates were
23 prevalent.

24 And indeed, these urine samples lit up like a
25 Christmas tree once we analyzed with our assay, and we

1 were able to provide some input into the remediation steps
2 that they took. So this was a very successful
3 collaboration.

4 --o0o--

5 DR. DE JESÚS: So, in summary, I hope I've been
6 able to convince you that the methods that we have
7 developed and used in biomonitoring in general really
8 provides good information about the population's exposure
9 to VOCs, as well as other compounds. We are always
10 looking for ways to improve how we do what we do. In
11 meetings like this, and other scientific meetings where we
12 have the opportunity to chat with our colleagues are
13 always welcome. And hopefully, out of these meetings, we
14 can find ways to develop methods that suit a particular
15 program's needs.

16 So all that to say that our laboratory is
17 certainly open to collaboration. We are certainly open to
18 supporting efforts for laboratories to bring up some of
19 these assays and provide expertise as needed, and as
20 requested, of course. We're not just going to show up and
21 tell you what to do.

22 So anyway.

23 --o0o--

24 DR. DE JESÚS: These are the folks that do the
25 real job. I just get to stand up here and talk about

1 them. And I consider myself incredibly fortunate to lead
2 a group of 22 bright and motivated scientists that make
3 all this work possible. And, of course, my boss, Dr. Ben
4 Blount, who many of you know. And funding, of course,
5 from CDC and the FDA Center for Tobacco Products.

6 --o0o--

7 DR. DE JESÚS: So if you take anything home after
8 this presentation take this, biomonitoring does provide
9 useful information about exposure to VOCs.

10 Thank you very much.

11 (Applause.)

12 CHAIRPERSON SCHWARZMAN: We have some time -- I'm
13 sorry. We have some time for questions, and then we'll be
14 moving into a larger discussion about all of the three
15 talks. Lots of question. I saw Oliver's hand first.

16 PANEL MEMBER FIEHN: So thank you for your
17 fascinating presentation. There are many, many exposure
18 studies in the United States from many, many laboratories.
19 I'm wondering how to keep quality controls across those
20 laboratories for -- you know, some of them we are involved
21 or we are tangentially involved, or we heard about.
22 What's the process if somebody would like to see input
23 expertise in quality control or even implementing certain
24 protocols?

25 DR. DE JESÚS: Right. That's a great question.

1 Let me try to describe some of the current efforts that
2 are available to anybody right now on that particular
3 subject. For blood VOCs, to our knowledge, there is no
4 other laboratory performing that assay. So such a program
5 does not exist, except what is offered by the LRN-C
6 Program, which is the chemical terrorism.

7 MS. DORTCH: It's Laboratory Response Network for
8 Chemicals.

9 DR. DE JESÚS: What Kristen said.

10 So Laboratory Response Network. So this is
11 different public health laboratories and some others too
12 that are able to respond in cases of emergency or, you
13 know, an event. We actually participated in that
14 proficiency testing program. But the levels that are
15 provided are such that we have to dilute our -- those
16 samples, you know, thousands of times -- a thousand-fold
17 times to be able to be within QC. So that's our -- really
18 our only measure -- external measure of quality.

19 Of course, we have a very thorough QC program
20 inside CDC. We are a CLIA certified laboratory. And we
21 go five steps above and beyond the requirements of CLIA.
22 So for that particular assay, just give us a call and
23 we'll be happy to talk one-on-one.

24 For VOC metabolites, there's actually an external
25 quality assurance program out of Germany in laboratories

1 that perform VOC metabolite testing. And there are a few.
2 Minnesota comes to mind for example. They participate in
3 this. The LRN-C does not have a PT program for that.

4 Our performance is within the mark. So we're not
5 above/below the means. The main differences between
6 different methods is the way that the urine gets treated.
7 You know, we don't essentially treat it. We dilute it.
8 That presents some issues sometimes to some other
9 laboratories. They clean up the samples even more. So I
10 really can't answer a universal way to ensure quality. I
11 can assure you though that at least within the CDC
12 laboratories, our QA requirements are so strict that we
13 are very confident about data that we produce. And 9
14 times out of 10, our results compare very favorably to
15 what other researchers put out.

16 So that's a long way to go around answering your
17 question. But I compare that to, for example, numerous
18 screening programs where there is one provider that
19 everybody compares themselves against that does not really
20 exist yet with some of these assays. So does that answer
21 your question?

22 PANEL MEMBER FIEHN: Yeah.

23 (Laughter.)

24 CHAIRPERSON SCHWARZMAN: Carl.

25 PANEL MEMBER CRANOR: Thank you.

1 Two questions. I guess maybe this is the easier
2 one. When people think about occupations --

3 MS. HOOVER: Carl, mic.

4 PANEL MEMBER CRANOR: Pardon?

5 Oh. For occupational exposures, it seems as if
6 that's one of the most poorly protected subpopulations in
7 the country. Are you seeing that in your occupational
8 biomonitoring?

9 DR. DE JESÚS: Well, we don't perform
10 occupational biomonitoring.

11 PANEL MEMBER CRANOR: You don't. Oh.

12 DR. DE JESÚS: We do not.

13 PANEL MEMBER CRANOR: I thought this was on the
14 list.

15 DR. DE JESÚS: We perform the assay on some
16 selected occupational sets of folks, specifically through
17 NIOSH. We work with NIOSH. They have -- they respond to
18 different activities. We perform the analytical
19 capability. In those instances, we do not provide any
20 interpretation of the results.

21 What I can share with you though is --

22 PANEL MEMBER CRANOR: You don't have a population
23 average versus occupational average?

24 DR. DE JESÚS: All we -- right, well, we have the
25 population average, and that's the data from NHANES. And

1 we do provide that, and say this is the
2 non-institutionalized U.S. population presumed
3 non-occupationally exposed. And that's about the extent
4 of the input we can provide. It's up to the NIOSH
5 investigators then to take it further.

6 What I can tell you though is that in many of
7 these studies, yes indeed, we do see very elevated levels
8 of some of -- of whatever the compound of interest is.

9 The last one that we did was for carbon disulfide
10 for example. And this is one metabolite that if you look
11 at the NHANES data sets, population levels are very, very
12 low and the samples that we examine indeed exhibited very
13 high levels of that particular metabolite. So it is
14 responsive. But since those are occupational exposures,
15 our laboratory does not --

16 PANEL MEMBER CRANOR: I see. Okay.

17 DR. DE JESÚS: That's not our lane.

18 PANEL MEMBER CRANOR: Okay. Second question.
19 Can you talk about some of the substances in the Deepwater
20 Horizon profile that you did and -- or not?

21 DR. DE JESÚS: Well, I can talk about the --
22 perhaps the most common ones, the BTEX compounds, you
23 know, benzene, toluene, styrenes. Those are ubiquitous
24 compounds. But our study actually examined -- reported
25 levels of these compounds from different petroleum

1 sources, if you will.

2 And it's very, very difficult to tell apart -- to
3 tell an exposure like that from just regular outside air
4 breathing, because our method is so sensitive to those
5 compounds. And notice I'm trying to dance around that.

6 (Laughter.)

7 DR. DE JESÚS: So the BTEX compounds, we were --
8 the profiles were very unique across different types of
9 petroleum products. And that's what I think was perhaps
10 the most unique finding of that particular study. So --
11 and that's unfortunately about all I can say on that
12 particular set of samples.

13 CHAIRPERSON SCHWARZMAN: Yeah. Jenny, please.

14 PANEL MEMBER QUINTANA: Hi. Relative to our
15 previous two speakers, have you been participating in
16 studies that look at either traffic exposure or polluted
17 areas versus less polluted areas in relation to the VOCs?

18 DR. DE JESÚS: No, we have not.

19 PANEL MEMBER QUINTANA: And what about endogenous
20 sources? Have you looked endogenous versus exogenous --

21 DR. DE JESÚS: Indirectly --

22 PANEL MEMBER QUINTANA: -- which imagine there's
23 going to be some.

24 DR. DE JESÚS: Indirectly, we do. Our
25 laboratory's Congressionally-appropriated funding however

1 only provides for us to look at NHANES samples, if you
2 will, at just regular population monitoring. So we are
3 somewhat limited in our ability to participate in
4 toxicological studies, if you will. Most of our NIH
5 collaborators, in collaboration with some universities,
6 actually perform that. So we are sort of on the periphery
7 of that.

8 I can tell you that within the past five years or
9 so, we have not been involved in such a study, and
10 something that specifically involves outside air, because
11 many times that's sort of seen as the EPA's purview. And,
12 you know, as a fellow federal agency, we have to be
13 extremely mindful of the intent of our
14 Congressionally-appropriated funds to perform activities.
15 So not to say that we cannot do it, but traditionally we
16 have not.

17 PANEL MEMBER QUINTANA: But just to follow up, in
18 NHANES itself, do they collect traffic density at the
19 address or anything? Because like, I mean, someone could
20 potentially --

21 DR. DE JESÚS: Right.

22 PANEL MEMBER QUINTANA: -- look at this issue in
23 your data.

24 DR. DE JESÚS: So NHANES, of course, they decide
25 the locations they're going to do the sampling. To my

1 knowledge, they do not perform any like criteria air
2 pollutant sampling, is that right, Kristen?

3 MS. HOOVER: Come to mic?

4 DR. DE JESÚS: While she gets here, NHANES -- a
5 lot of the data that NHANES actually collects, we are not
6 privy to. So it's a dance we dance within CHS.

7 MS. DORTCH: Kristin Dortch with CDC. I'm the
8 Project Officer for the State Biomonitoring Cooperative
9 Agreement Grant.

10 But one of our -- or another program that we have
11 is the Environmental Health Tracking Program. And so with
12 that program they get data from ambient -- or air sources
13 and different things like that. And I was even going to
14 mention that with the other program, with the grant-funded
15 program is that the Environmental -- Environmental Health
16 Tracking Program has a portal for data to put all of that
17 type of air exposure, water exposure type data versus
18 biomonitoring, which comes from the NHANES program.

19 So we have other programs within CDC that look at
20 environmental exposures and tracks that data.

21 CHAIRPERSON SCHWARZMAN: I have a question that
22 came in online, specifically for you, from Mark Spence.
23 He says on slide 15 of your slides, you state that the
24 VOCL reported results are for 10,000 NHANES specimens for
25 several analyses. How can a member of the public --

1 members of the public access these results or at least a
2 summary of them?

3 DR. DE JESÚS: So all of these results are
4 published on the NHANES website. I can tell you that last
5 year that number was the number of reported analytes. And
6 this -- those analytes included data sets going back to
7 2011/2012.

8 So right now for VOC metabolites, the latest
9 published cycle was 2013/2014. We have reported
10 2015/2016, but that is in active review. And the process
11 that we follow, we report the data to NCHS. They conduct
12 their internal QC. Then they apply the creatinine
13 corrections and the different weights. And then all of
14 that -- those data come back to us for a final review.
15 And then it gets published.

16 All that to say, so from the moment our
17 laboratory says here's the complete data set to the moment
18 where those data are public may take two to three months.
19 So by the end of the year -- actually, I expect it to be
20 in the next couple of months, all of the data from all the
21 sets that we reported last year will be public.

22 And I guess I don't have the website for NHANES
23 with me. Just Google NHANES, and you'll get to the
24 home -- to the home page. And all of the data are divided
25 by cycle. So you just go to whichever cycle you have, you

1 find volatile organic compound metabolites, and you can
2 download an Excel file essentially, as well as all of the
3 descriptors for the different variables, as well as all
4 the different analyte codes and whatnot. So all of that
5 is available to anybody who goes to the NHANES website.

6 CHAIRPERSON SCHWARZMAN: Thank you. So we're
7 going to move into our group discussion, and I'm going to
8 open that with a comment period. And I have a few public
9 comments here. So, first, Tom Jacob.

10 MR. JACOB: Thank you. Tom Jacob, here on behalf
11 of the Chemical Industry Council of California.

12 I have a general comment about the 617 program,
13 and then a specific question for Heather. I'll just say
14 I've been very encouraged in looking over the concept
15 paper with the approach that's being taken there. I think
16 it's fair to say that industry has been very uneasy about
17 this law. It promises change to rules that are already
18 among the most stringent faced by any industry around the
19 globe.

20 We've been trying to sensitize our members to the
21 dynamics of the EJ challenges that we face, and the steps
22 that the State is taking to face those. Our view is that
23 industry is part of the solution to this problem to the
24 these challenges. In fact, the chemical industry for
25 several decades has had a community awareness program in

1 their Responsible Care Initiative specifically aimed at
2 trying to encourage our facilities to become closer to
3 their communities, and to integrate the concerns of those
4 communities into their own planning. This is certainly
5 going to spur that.

6 My sense, by the way, having taken a closer look
7 at the Sustainable Freight Program, is that we're in good
8 hands because of the fact that 617 pirated Heather away
9 from that.

10 I have a personal interest in land-use planning.
11 That's part of my checkered history. And I had a
12 conversation with Yana about a conspicuous absence of
13 local governments from these conversations around
14 environmental justice, around SB -- AB 617. I believe
15 it's conspicuous because of the role of land-use planning
16 in establishing the conditions out of which many of our
17 environmental justice programs have arisen.

18 And my question for Heather is simply to note
19 that the local governments are identified in that
20 document, and land use is specifically going to be looked
21 at. Do you have a sense, at this point, as to how they
22 may have fit into the picture?

23 MS. ARIAS: Yeah, that's a good question. As we
24 move forward with the communities and the air districts in
25 implementing the whole program, not just the emission

1 reduction programs, local city planners, counties will be
2 critical in all aspects of that. So we are interested in
3 trying to figure out the best ways to engage them. We are
4 working with the air districts, reaching out to them now.
5 As we're putting together the requirements for the
6 emission reduction programs and the monitoring, we have
7 identified them as key members to the steering committees
8 that would help implement the programs.

9 And we are seeking advice on the best way to
10 include them, and to help them be able to have the
11 resources necessary to make a difference as we figure out
12 how to reduce the exposure in criteria in these areas.

13 CHAIRPERSON SCHWARZMAN: Sara.

14 MS. HOOVER: Okay. I just want to make one
15 clarification about this discussion period. The focus of
16 this discussion period is the intersection between
17 Biomonitoring California, 617, VOC biomonitoring. So we
18 really -- we're not actually having a big discussion about
19 617 specifically in those provisions, but we really want
20 to focus on some of our informal discussion questions that
21 we've posed to our Chair.

22 You know, what are some of the possible ways in
23 the near term that Biomonitoring California could support
24 CARB's efforts under 617, what are some of the highest
25 priority air pollutant issues that are already known to

1 communicate -- communities across the state? That's what
2 we were just touching on with Yana. What are some of the
3 possible ways in the longer term that Biomonitoring
4 California could engage with and support efforts to
5 address these exposures by CARB, local agencies, and
6 community groups?

7 So we really want to keep -- there's many, many
8 workshops on 617, but we want to really keep this focused
9 on how can we work together.

10 CHAIRPERSON SCHWARZMAN: Thank you.

11 And with that in mind, I have another request to
12 speak from Kathleen Attfield, CDPH.

13 DR. ATTFIELD: I'm afraid my comment is a bit off
14 that requested topic. My question was for Victor. And
15 another hat I wear at the Exposure Assessment Section is I
16 do a lot of work on e-cigarettes. So I -- as many people
17 may know or may not know, there are thousands of flavoring
18 chemicals in e-liquids and e-cigarettes. We are,
19 ourselves, doing some toxicity testing on 40 with NIOSH.

20 But I was wondering how fufural got chosen, and
21 if, you know, had a wider slate that you were wanting to
22 prioritize for other method development?

23 Thank you.

24 DR. DE JESÚS: So furfural was chosen because of
25 a couple of publications I came across late last year.

1 And those were focused on trying to identify some of the
2 components in these flavored e-liquids, which is a
3 personal area of interest.

4 And furfural, back from my days in graduate
5 school, I remember being a particular challenge
6 analytically. So I just started looking in consultation
7 with my team lead, who leads the day-to-day operation for
8 this assay, and lo and behold, some of the metabolites
9 that have been reported in the literature, specifically in
10 rat models, were mercapturic acids.

11 So this was very fortuitous in how it happened.
12 So this wasn't -- this was just a very quick initial look
13 into some different compounds. Also, furfural and the
14 other one the, n-methylpyrrolidone, some request for
15 review came through from EPA for some paperwork for some
16 tox profiles that we're working on. So we quickly decided
17 that these were compounds of interest.

18 And we then examined the literature, and we found
19 them to be present -- reported to be present in tobacco
20 smoke as well.

21 So that was the lens through which we chose these
22 compounds to start with. That is certainly not a terminal
23 list so if there are any other compounds that your program
24 or yourself consider to be of importance lets' chat, so...

25 (Laughter.)

1 CHAIRPERSON SCHWARZMAN: Okay. Thanks very much.
2 I want to return us to the topic for the afternoon's
3 discussion that takes advantage of our three guests here.
4 And as Sara Hoover just mentioned, what Biomonitoring
5 California is really particularly interested in exploring
6 is how biomonitoring can support the goals under 617. And
7 some of those might be short-term projects like using data
8 that the studies are already generating like CARE --
9 within CARE or in the Diesel Exhaust Study to help
10 identify communities of high priority, or longer term like
11 designing a targeted intervention study for a -- you know,
12 once there are exposure reduction plans implemented, then
13 it's an interesting set up potentially for a before and
14 after study. And then the third piece that I think Sara
15 just mentioned is attendance and Panel ideas about
16 priorities for air pollutants to study or take action on.

17 So with those to sort of seed the discussion, I
18 want to see if the Panel members have any comments on
19 those topics.

20 Jenny, looks like she's ready. Yeah? Please.

21 PANEL MEMBER QUINTANA: Hi. Thank you, all three
22 of you, for interesting presentations.

23 So I guess my question to you is maybe how you've
24 already thought -- it sounds like you've already thought a
25 bit how Biomonitoring California might interact with our

1 programs. I'd like to hear something about that. And I
2 also would like to hear you comment on kind of the scale
3 where you see the Biomonitoring Program interacting -- and
4 just as an example, I think, as you said very obvious on
5 helpful use of biomonitoring is to show the impact of
6 policies, you know, clean diesel, reduces, you know, this
7 carcinogen in people's urine. You know, 1-nitropyrene
8 metabolites. Very powerful example of policy being
9 effective.

10 But also it could be that CalEnviroScreen, and
11 air pollution control districts, and CARB use models, you
12 know, of diesel. And would it be of interest to kind of
13 validate the models that are used by looking at the
14 absorbed doses.

15 My last part of my question - sorry this is going
16 so long - is to also ask you about large-scale
17 applications like model validation, as well as getting
18 down to a question you asked about indoor exposures. So
19 are you interested in communities in drilling down to
20 disparities that housing might cause in exposure to
21 external air pollution? Like, there's a huge amount of
22 scale from local, to large scale, to between individuals'
23 differences, and have you any comments on that, I guess?

24 CALEPA ASSISTANT SECRETARY GARCIA: I can start
25 since I think my responses might be a little broader than

1 Heather's. So in terms of thinking about how
2 Biomonitoring California and some of the data that we're
3 already gathering can inform AB 617, I had few ideas. I
4 mean, I think in the short term, the information that we
5 have from West Oakland and from the CARE Study I think
6 would be really critical in prioritizing communities.

7 And since the -- since shortly after this came
8 into law, I think communities were concerned that there
9 would be a delay in action, that, you know, continued
10 studies, additional monitoring would only delay the need
11 for reductions immediately.

12 So I heard a lot of interest in kind of pushing
13 for communities to be eligible for reductions immediately,
14 notwithstanding the monitoring piece of the legislation.
15 And so in that vain, I think if we look at the data points
16 that we already have, that would be really important to
17 inform where we prioritize our efforts for immediate
18 community reductions for the eligibility criteria for
19 those selected communities and the first sort of tranche
20 that we're looking at in this first year.

21 In terms of scale, I think from a timeliness
22 perspective, my understanding of the timeframe for getting
23 a sort of statewide baseline is that it's pretty long.
24 And I think for our purposes in AB 617, maybe looking at a
25 more granular scale. As Heather mentioned, we're still

1 thinking about how we're defining communities for the
2 purpose of AB 617. But if we're looking at sort of
3 block-by-block radius, much smaller than even the census
4 tract around a particular facility or around a high
5 concentration of facilities, or, you know, CAFO, as Dr.
6 Schwarzman mentioned, I think we can look at the
7 biomonitoring criteria there, a lot more granular, not
8 necessarily waiting for that statewide baseline data, but
9 looking at community baseline data.

10 And then for model validation on diesel, I'll let
11 Heather take a stab at that, since she's quite a diesel
12 expert herself. Thanks.

13 MS. ARIAS: Actually, I'll defer to Vernon on the
14 model.

15 (Laughter.)

16 MS. ARIAS: So while he's walking up to the
17 mic -- there's your cue, Vernon --

18 (Laughter.)

19 MS. ARIAS: I will talk a little bit about the --
20 we have been talking about biomonitoring, how maybe it
21 might fit into this larger program. One, of course, we
22 are scientists. We love data. The more data we can get,
23 the happier we are.

24 That being said, we don't want it to slow down
25 any of the emission reduction programs. It's hard for us

1 to say specifically how it would fit. But one of the
2 things that I think would be good for us all to
3 collectively be thinking about is how might biomonitoring
4 be used as a potential metric for tracking progress of any
5 one of the programs that we move forward with.

6 I don't know about timing opportunities, and how
7 we can work together to try and fold that in. But
8 certainly as we move towards September and identifying the
9 communities, once those communities are identified, we'll
10 understand what the problem is at that point, and which
11 communities we're thinking about.

12 That's probably a good time for us to be circling
13 back and saying, okay, here's where we're at. This is the
14 communities that have been identified, and the scope.

15 As those communities are working with the air
16 districts and us to think about what their program is,
17 they're going to be talking about metrics. And that's a
18 good opportunity to be thinking about where and how can
19 biomonitoring be put into the program, specifically in the
20 community scale level.

21 As far as the modeling is concerned, I'll let my
22 colleague Vernon Hughes answer.

23 CALEPA ASSISTANT SECRETARY GARCIA: Can I
24 actually add really, really quick before we move on?
25 Sorry.

1 MS. ARIAS: No.

2 CALEPA ASSISTANT SECRETARY GARCIA: Just very
3 quickly, the other thing that I think would be helpful
4 from the community grants perspective, on the community
5 level, I think one of the things that communities will be
6 looking for are sources of data as well that they -- that
7 they can use.

8 So to the extent that we have accessible
9 information about what biomonitoring is, what it can do,
10 and I think we have those sorts of fact sheets and
11 materials that we use to approach communities when we're
12 going to engage in a biomonitoring project, those would be
13 extremely helpful, building partnerships with community
14 based organizations, where we've had biomonitoring
15 projects in the past would be really good as well.

16 The Community Grants Program again will rely very
17 heavily on those sorts of partnerships on that kind of
18 collaboration. So that over time will also be helpful.

19 MS. HUGHES: Okay. Well, thank you. Vernon
20 Hughes, Chief of the Community Assessment Branch in the
21 Office of Community Air Protection. Heather and I are
22 both branch chiefs in that program.

23 So in terms -- I would echo everything that Yana
24 and Heather just mentioned.

25 Part of the challenge I guess would be to looking

1 at the objectives of a particular community and what
2 they're -- they've identified a problem, the objectives of
3 the Community Emission Reduction Program, and how
4 biomonitoring can mesh with those specific objectives. I
5 think we're going to find, again as Heather said, as we
6 start this program, we're going to learn quite a bit as we
7 move forward. We're going to have a few communities
8 selected in this first year. We'll learn from those. And
9 moving forward, how do we improve this program?

10 So to some extent, given a profile of a certain
11 problem, how can biomonitoring fit in, so developing
12 standards, methods to meet certain needs or objectives of
13 a particular community would be useful. As to the models,
14 currently, and again going to some of Heather slides, our
15 programs have been focused on regional air pollution,
16 these tools that we have, our emissions inventory, air
17 quality modeling, the models that we use are primarily
18 focused at the regional scale.

19 They're also focused on data that are fixed
20 locations. And so the challenge with biomonitoring is you
21 have a moving human that's exposed to different things
22 inside and outside of a community. Again, I think this
23 goes to the protocols of what's the objective in a
24 particular community, and how can biomonitoring be used.
25 Certainly on a longitudinal basis, and maybe given the

1 scale of long-term reductions, and say diesel or gasoline
2 exposure, biomonitoring is definitely a tool. But getting
3 down to the local scale, we're struggling with this
4 ourselves. Collecting data at the local scale for our
5 models, again both emissions inventory and air quality
6 modeling, that is one of the challenges that we face, and
7 that we're going to be working through.

8 So I hope that helps to some extent address your
9 question.

10 CHAIRPERSON SCHWARZMAN: Please.

11 DR. DE JESÚS: I'd like to provide an example
12 that speaks specifically to your question about
13 biomonitoring actions that can track the results of policy
14 changes. We are getting ready to publish a study that we
15 performed looking at levels of methyl tert-butyl ether in
16 the U.S. population. And, of course, that used to be an
17 additive into gasoline, which was effectively banned in
18 2006.

19 And data from NHANES tracks an almost perfect
20 linear correlation between decreasing levels of MTBE in
21 the U.S. population versus the production of MTBE in the
22 U.S. So that's one specific example of these kinds of
23 studies being able to track the effect of specific policy
24 changes. So hopefully that could be incorporated into
25 some of the discussions for AB 617.

1 CHAIRPERSON SCHWARZMAN: Oh, go ahead, José.

2 PANEL MEMBER SUÁREZ: This is a question for
3 Victor actually. So as technology advances, there's more
4 interest on minimally-invasive biomonitoring in general.
5 So give your expertise on VOCs, can -- do you have much
6 experience -- or can you tell me much about exhaled VOCs,
7 how well they correlate, for example, with urine or blood
8 levels? And what are your thoughts of the use of that?

9 DR. DE JESÚS: Right. So we have examined
10 exhaled breath. And it presents a very interesting
11 challenge, in that the presence of moisture really
12 confounds the analysis.

13 Right now, we have a study where we're looking at
14 nail salon workers' exposures. And unfortunately, this
15 study looks at both exhaled breath and blood samples. So
16 it's a directly paired comparison. We have not been able
17 to make such a comparison because the analysis from the
18 exhaled breath is not where it needs to be to be able to
19 do that kind of comparison. So it's -- right now, exhaled
20 breath, in my, opinion can only be used for, you know,
21 super high exposures, and only for a few specific
22 compounds.

23 You know, the -- in case of nail salon
24 workings -- workers, ethyl acetate, because that's a
25 solvent that's present everywhere. And that we can see

1 very well. But beyond that, it is very, very difficult to
2 properly examine exhaled breath, because of the moisture
3 issue. And we're actively working on that, and hopefully
4 in the not-so-distant future, I can provide a better
5 answer for you. But right now, that is technically
6 challenging.

7 CHAIRPERSON SCHWARZMAN: I had a question, maybe
8 mostly for Yana and Heather about. I'm sure you're aware
9 of the article that came out about two weeks ago in
10 science looking at volatile chemical products, sort of
11 outpacing mobile and stationary sources of, you know,
12 exhaust and petroleum, or at least combustion product --
13 sources of urban organic emissions not suburban or rural.

14 And it's one of the things that led me to think
15 about monitoring beyond just like stationary outdoor air
16 monitoring as part of the monitoring that happens under
17 the scope of 617. And I just wanted to pose that to you,
18 and see where that is in your thinking and whether, you
19 know, particularly the sources they called out are
20 pesticides, coatings, printing inks, adhesives, cleaning
21 agents, and personal care products.

22 And some of those are very much indoor exposures,
23 and some of them are very personal level exposures, and
24 there are certainly -- I'm no expert in the quality of
25 personal level air monitoring or -- yeah, VOC and air

1 monitoring devices, but there certainly are some. And I
2 would defer to anybody who knows more about them than I
3 do.

4 But anyway, I just wanted to raise that category
5 of exposures and ask you how you're relating to that idea?

6 MS. ARIAS: So I will give time for Walter now to
7 walk up to the mic. And he can talk about the monitoring
8 itself.

9 Certainly, we are aware of the data and for the
10 consumer products like all of the different emission
11 sources that are under our jurisdiction, if you will.
12 Obviously, we're constantly looking at the data. We're
13 constantly watching the use from the public looking at any
14 new exposure data that we can get. As that data becomes
15 available, than we always look back at our existing
16 regulations to determine whether or not we need to either
17 amend regulations or are we on the right track?

18 So I can't speak to that directly in this
19 particular case, but I do know that the staff are aware of
20 this, and I'm sure are, you know, looking to see whether
21 or not there needs to be any changes in the regulatory
22 aspect. If, in fact, that is true, then I'm sure they'll
23 move forward with that. How that relates to -- go ahead.

24 CHAIRPERSON SCHWARZMAN: I just mean specifically
25 in the monitoring aspect.

1 MS. ARIAS: Right. So now that Walter is
2 there --

3 CHAIRPERSON SCHWARZMAN: Oh, okay.
4 (Laughter.)

5 MS. ARIAS: -- he can talk about any of those
6 technologies that are available.

7 MR. HAM: Walter Ham, CARB.

8 So one of the things we're trying to do in the
9 monitoring plan, which I think you've highlighted is, is
10 that we're trying to give districts and communities
11 options as far as different tools for monitoring, because
12 stationary long-term monitoring using very advanced FAM
13 FRM equipment has some -- may not be able to capture the
14 granularity that we need to assess personal exposure and
15 things like that.

16 So one of the assignments that we have is to
17 review different technologies. And some of the
18 technologies that we're looking at are things like remote
19 sensing satellite-based, aircraft-based sensing air
20 sensors. So we have -- we see a lot of communities now
21 that are using air sensors. And that technology has come
22 a long way in the last few years. There's mobile
23 monitoring which was alluded to with the Google study, and
24 there's fence-line monitoring, and different other -- all
25 kinds of tools that are now available.

1 And so one of the objectives that we have for the
2 monitoring plan is to give the districts the flexibility
3 to use the appropriate tool for the question that the
4 community or the district want to ask.

5 As far as VCPs - and I'm -- I appreciate that you
6 brought up that article. It's a good article that we're
7 reviewing very closely. As far as personal exposures to
8 VOCs, most of the -- there are some sensors that are
9 available. These are VOC sensors. They're PID based.

10 But the big question that we have as a regulatory
11 agency and from a personal exposure standpoint is what is
12 the data quality? Technology is advancing very quickly.
13 And it's very difficult for agencies and groups to keep up
14 with how well they are performing. So one of the things
15 that we are doing as an agency is we are setting up an
16 evaluation program similar to South Coast's AQ Spec
17 Program, where we'll be doing both laboratory and
18 chamber-based evaluations of these sensors to see if they
19 could be used for personal exposure and other
20 applications.

21 CHAIRPERSON SCHWARZMAN: Great. Thank you. It's
22 just a -- it makes me think about sort of with this
23 connection between biomonitoring and 617 processes that
24 are taking place under 617 about, you know, if there are
25 particular sources of exposure that sort of rise to the

1 top or become of interest under 617, that it would be
2 interesting to have that connection between biomonitoring
3 and CARB, because the chem -- the biomonitoring chemicals
4 of interest would be different, right, depending on the --
5 on the source -- the exposure source of interest.

6 CALEPA ASSISTANT SECRETARY GARCIA: I was just
7 going to mention right now we are at the input stage. So
8 we've put out the concept paper on some of these concepts.
9 And we'll be developing a lot of this in a lot more
10 detail.

11 I think one of the things that will helpful is to
12 consider this exactly. I think we'll see -- I would not
13 be surprised if we see requests to include indoor air
14 monitoring around agricultural sites in farm worker
15 housing, for example, around refineries. We've seen some
16 of that already done in Richmond and other areas. So I
17 would not be surprised if we continue to see that. And I
18 certainly hope we do prioritize that, and want to keep
19 that as a top priority.

20 CHAIRPERSON SCHWARZMAN: Great. Tom.

21 PANEL MEMBER MCKONE: In terms of community scale
22 trends, I don't know if looked at the -- a year ago, I
23 heard a talk from somebody from Australia who was actually
24 looking at drug use. And, of course, nobody gives you
25 good urine samples or anything. So he went to the waste

1 treatment facilities, and he could see trends -- very
2 clear trends of drug use in different communities going up
3 and going down by biomonitoring basically the urine and
4 feces of the whole community.

5 Is that, I mean, something that Anyone's thought
6 about. Again, it's not person-by-person. It's like whole
7 communities, but he claimed that what's going into a waste
8 treatment plant is a pretty good integrated sample for
9 what's coming out of people and going down the drain. I
10 don't know about retention and all the other. He did a
11 lot of work correcting and learning how to do it. But his
12 only interest was not in who, but how much, and what the
13 trend was, and to see patterns. And he said it was really
14 good for that, and helpful to law enforcement.

15 CHAIRPERSON SCHWARZMAN: It's intriguing.

16 Carl.

17 PANEL MEMBER CRANOR: This is a quick follow-up
18 to something Meg mentioned -- Megan mentioned. I've read
19 an article about houses that have been around for a long
20 time on the southern Texas/Mexico border, that -- I'm not
21 sure what they were used for, but they were filled with
22 long-lasting substances. So if there are communities that
23 have that kind of housing for, for example, farm workers
24 and so forth, might be very interesting to see what's
25 inside, what shows up on the monitoring.

1 CALEPA ASSISTANT SECRETARY GARCIA: As I
2 presentation at the outset of my presentation, I mean,
3 biomonitoring is, of course, instructive in the activities
4 of so many of our boards and departments. And the
5 Department of Toxic Substances Control and the State Water
6 Resources Control Board have been jointly really thinking
7 about how to approach some vapor intrusion issues in
8 buildings, throughout the Central Valley. So I think
9 that's something that we're approaching in somewhat of a
10 different context, but could definitely have some overlap
11 as well with AB 617 if go there into the sort of indoor
12 air monitoring realm, and start thinking about some of
13 those things. But I thought I'd mention that.

14 CHAIRPERSON SCHWARZMAN: Sara.

15 MS. HOOVER: Yeah. Hi. Sara Hoover, OEHHA. I
16 just wanted to also -- because I talked about the link to
17 617, but I want to talk about the link to Victor's work,
18 because we were so lucky for him to arrive. And I'm
19 really excited about the stable urinary metabolites of
20 VOCs. It's extremely powerful as a way to get at exposure
21 directly, and not indoor air monitoring, not personal
22 monitors, but directly.

23 So we're actually in discussions - it's very
24 exciting - to try to write a proposal to do a pilot where
25 he can take some of our samples, our urine samples, from

1 the East Bay Diesel Exposure Project and run the VOC
2 metabolite.

3 It also links up to this huge report we just
4 finished at OEHHA for gasoline-related exposures over 1996
5 to 2014. And one of the compounds of concern is acrolein,
6 which Victor's assay covers. So I feel like that's a
7 really great opportunity to start to look at some of --
8 compounds of significant concern in a way that we haven't
9 been able to do before.

10 So that's -- I just wanted to give a plug for
11 Victor's excellent work there. And I hope we have a
12 chance to collaborate with him in the future.

13 And the only other thing I wanted to mention with
14 regard to the question that was raised about how do you
15 define community, so 617 actually does link to a statutory
16 definition of disadvantaged community. So that seemed
17 maybe relevant to talk about in response to the question
18 of how you define community.

19 MS. ARIAS: It links to the definition of
20 disadvantaged, but not necessarily community as a whole.
21 So we are using, as I mentioned, the definition that is
22 articulated with -- in respect to CalEnviroScreen for
23 disadvantage. But the community itself is not defined,
24 and we are seeking input on that.

25 CHAIRPERSON SCHWARZMAN: Great.

1 Yes, please. Jianwen.

2 DR. SHE: This could be a question or a comment
3 to Victor. And just like Sara said, I really admire you
4 give us opportunity to learn five different method for
5 accurate exposure assessment in blood, and the chronic
6 exposure of the VOC exposure in urine samples.

7 As everyone know, VOC in a chemist's point of
8 view is most simple chemicals. The simplest -- simplicity
9 of the chemical doesn't make the analytical work easier.
10 So that's one area from my 30-years career I tried to
11 avoid, so -- to analyze VOC.

12 But for me, is ask advice, for example, I see the
13 analytical challenge must lie on VOC because of
14 vapor pressure -- it's easily vaporized. It's everywhere.
15 You know, analytical lab like the blood sample even
16 cleans, very clean. But my laboratory set-up may need to
17 be also cleaned. This is one challenge.

18 Second part the stability of the VOC may be --
19 you know, the blood sample or urine samples need a special
20 attention. So follow that one I think for State
21 Laboratory to do the VOC in blood is hard. But just like
22 Sara noticed already, for the metabolite in urine and
23 maybe very easier for us to do that -- but that easy still
24 may require us to collaborate with you differently. So
25 the long term if the State needed the capability, for

1 example, the standard you have for 30 of the VOC may be
2 hard for State got them -- even we get them, then maybe
3 degraded very quickly.

4 So that from all of this point of view, what's
5 your recommendation if for the laboratory require
6 capability to do this kind of thing any advice you have
7 for us?

8 DR. DE JESÚS: Sure. So let me start with the
9 physical space. For VOC -- I agree with you 100 percent
10 on the blood VOC assay. I think that while the assay
11 itself is simple, it is certainly subject to all of the
12 environmental conditions that come with running a
13 laboratory. And I'll give you a specific example. One of
14 the analytes that we monitor is methylene chloride or
15 dichloromethane.

16 Down the hallway from us is the cotinine
17 laboratory for the Branch, and they started doing an assay
18 where one of the solvents was methylene chloride. And all
19 of sudden our QCs just went all of whack.

20 So, we have a truce right now.

21 (Laughter.)

22 DR. DE JESÚS: But -- because, you know, work has
23 to continue. But we certainly have to be very mindful
24 about the physical condition and the physical cleanliness
25 for that particular assay.

1 VOC metabolites in urine is certainly more
2 forgiving. It's -- it's also a simple assay, and your
3 existing equipment could certainly do it. In terms of
4 standards, every standard that we use is actually
5 commercially available. I believe we have just one custom
6 synthesis. We are certainly willing to share some of our
7 material with you, if you are interested in developing the
8 capability, as well as the method and, you know, the ins
9 and outs, if you will.

10 In terms of again physical constraints, very --
11 no different than any other BSL-2 laboratory that -- or
12 actually your existing laboratory from what I saw
13 yesterday. So I strongly encourage you to explore that --
14 establishing that capability, and we'll be more than happy
15 to help.

16 DR. SHE: Thank you very much.

17 CHAIRPERSON SCHWARZMAN: Excuse me. I'm sorry --
18 it's just about -- we have to take a break but we have one
19 person who's really been waiting to make a comment or
20 question. Go ahead June-Soo. And then we'll break

21 DR. PARK: I'll make it very short. Actually, my
22 question is very short. As we've shared with you Victor,
23 you know, I'm the person who's most excited. You know,
24 more excited than Jianwen was --

25 (Laughter.)

1 DR. PARK: -- because you -- I told him we shared
2 the information. We just -- our department kindly got us
3 a GC/Q-TOF and GC-MS/MS. We do pair function, so we can
4 put the STME -- SPME on it. So I think -- I know where
5 to -- you know, the -- I know where to find you.

6 (Laughter.)

7 DR. PARK: So that's the excitement there.

8 One thing I was a little bit shocked, you know,
9 you use so much blood, 3 ml for the SPME. I wonder if you
10 do anything after the SPME experiment, because 3 ml is
11 kind of a -- it's a -- we can do -- you know, the 100
12 chemicals of using the 3 ml, that's one question.

13 You know, I also liked this opportunity. You
14 know, it doesn't matter, you know, that we are short
15 hand -- you know, our supervisor can go back to lab to
16 operate, you know, the QTOF MS/MS. It's a lot of fun
17 there. So that's why the -- we want to expend -- the first
18 thing, you know, that we purchased -- or we asked to
19 purchase that instrument was -- we have our priority list
20 for the Biomonitoring Program, the cyclosiloxane is one,
21 you D-5 D-6, and some fragrance chemicals.

22 You know, we know the sorrow, you know, the how
23 difficult to analyze those volatiles. You know, the one
24 time we done the experiment for the, you know, the musk --
25 you know, the -- all of sudden, musk was kind of hit the

1 top, you know, saturated. You know, well, something --
2 are you wearing the perfume this morning? So I think
3 there are -- we know the nature of, you know, the -- of
4 difficulty, you know, how hard it is.

5 So but we still -- it's very challenging, but we
6 don't want to give up that opportunity, you know, that we
7 still -- after the -- we got the methods down with musk
8 and cyclosiloxanes. We want to expand it to the -- we
9 just stopped after we analyzed their phthalate -- urinary
10 phthalate. You know, a lot of opportunity there.

11 Also, the -- we've been having -- meeting with
12 the Department. I don't know if you guys are interested
13 in some exposure by -- also, the -- one thing, you know,
14 that we collaborating with the Pesticide Regulation, you
15 know, the -- we're looking at some opportunity, you know,
16 to look into the current used pesticide in the wastewater
17 stream.

18 I think definitely, we can expand that to the
19 occupation of the -- some personal exposure labels. So I
20 think we can work with CARB too.

21 So I just want to let you know that we are so
22 excited.

23 CHAIRPERSON SCHWARZMAN: Thank you all three of
24 you so much for your work, and also for coming to talk
25 with us about it. And we're going to take a break and

1 resume at just five minutes of 4:00.

2 MS. HOOVER: You can make it 4:00.

3 CHAIRPERSON SCHWARZMAN: Okay, 4:00 o'clock.

4 Great. That's what I was hoping you would say. We'll
5 resume at 4:00.

6 (Off record: 3:45 p.m.)

7 (Thereupon a recess was taken.)

8 (On record: 4:01 p.m.)

9 CHAIRPERSON SCHWARZMAN: Can we reassemble.

10 Let's restart.

11 So our next -- I'd like to restart the meeting as
12 soon as we can. If you're in a conversation, please wrap
13 it up. We're going to restart the meeting.

14 So the next item on the agenda is a presentation
15 and demonstration of an upcoming website feature that's
16 designed to increase awareness of Biomonitoring California
17 findings. And I'm happy to introduce Amy Dunn, who's a
18 Research Scientist in the Safer Alternatives Assessment
19 and Biomonitoring Section at OEHHA. Amy has been with
20 OEHHA since its inception in 1991, and has been part of
21 the Biomonitoring California Program since the Program
22 began in 2006.

23 And I would also like to welcome Uli Weeren,
24 who's a web designer and developer at Studio Weeren, which
25 he founded. Uli and his team created the main OEHHA

1 website, as well as the Prop 65 Warnings website. And
2 they also partner with many non-profit organizations and
3 businesses to develop custom web applications.

4 Amy and Uli played pivotal roles in the
5 development of Biomonitoring California's widely lauded
6 website, and continue to implement improvements to the
7 site. So we'll be hearing about one of those improvements
8 today. And we're going to have a brief presentation with
9 demonstration, and then a bit of discussion and feedback,
10 and then a little final piece of the presentation.

11 (Thereupon an overhead presentation was
12 presented as follows.)

13 MS. DUNN: So good afternoon, everyone.

14 We're excited to be here to share with you this
15 upcoming website feature that we have been building to
16 help increase awareness of the Program's findings.

17 --o0o--

18 MS. DUNN: Briefly, I'll be describing the
19 purpose and format, and then we'll do a demonstration, and
20 as Meg said, have a pause for some feedback on the
21 structure of the website. And then we'll turn to a little
22 bit of discussion about the findings to fill out the
23 website, and get your feedback on our approach to doing
24 that.

25 --o0o--

1 MS. DUNN: The purpose of this addition of -- to
2 the website, as has been mentioned, is to increase
3 awareness of Biomonitoring California's findings. Our
4 current website already has information about our findings
5 in the form of publications from our studies, as well as
6 information in the results database.

7 However, this is only reaching some of the
8 audiences who potentially are interested in what our
9 program is finding. And so we wanted to create a way in
10 for people who may not be scientists to better understand
11 what is coming out of the Program, and why it might be
12 relevant to their concerns.

13 Uli and I, with the help of Laurel Plummer in the
14 initial stages of the development, considered how we might
15 best serve up this information in a form that would
16 capture people's interests. The original idea centered
17 around the fact that people tend to be interested in
18 what's happening in their own communities, and so we were
19 approaching it geographically.

20 However, because most of the findings are not
21 location specific, we also wanted to broaden the approach
22 to include other avenues that would make sense to people,
23 as you'll see in a moment.

24 The format of the feature is to have multiple
25 layers and to have an intuitive -- or what we hope will

1 be, an intuitive interface. We plan to do some testing
2 once we have the feature fully built and populated to make
3 sure that people can find their way to and understand the
4 findings that we're putting into it.

5 And we're building it in such a way that existing
6 website content will be interwoven with the feature, so
7 that people can easily dig more deeply, once they find
8 something they're interested in.

9 Uli.

10 --o0o--

11 MR. WEEREN: Yeah. So, hello, everybody. So
12 this is kind of the structure of the findings feature. We
13 have a home page or a landing page where you have like
14 three ways to dig into the findings. So one finding --
15 one pathway is through the chemicals. So if you know the
16 chemical you're looking for, you can select the chemical,
17 and then go this pathway.

18 We also have these group of people. So if you're
19 looking for like a group of people, you can go through
20 this way, and that's -- you want to check it for children.
21 You can see the findings for children and find these, or
22 you can also explore the findings through the regions. So
23 if you know your region you're looking for, you can click
24 on a map.

25 And then you see, let's say, the San Francisco

1 Bay Area. You click on this, and then you get all the
2 findings within the San Francisco Bay Area, and also
3 additional information about this area.

4 And then in the end, you end up, if you want to
5 dig deeper, at the specific finding with all the
6 information about this finding.

7 --o0o--

8 MR. WEEREN: And now we -- we can start the demo.
9 There you go.

10 Here we go. So this is the landing page. So
11 here we have the chemicals. Here you can search for a
12 chemical. List of all the chemicals we have in the
13 database. You can also -- you could start typing for a
14 chemical and then can search for it.

15 CHAIRPERSON SCHWARZMAN: Can you speak a little
16 more closely into the mic.

17 MR. WEEREN: Oh, sorry.

18 And then we also list like the most searched
19 chemicals. So if you -- like popular chemicals in the
20 database.

21 And then we have a list of group of people, you
22 know, that might be interested in, and then these are the
23 areas we -- or the regions within California you can
24 search for.

25 MS. DUNN: So we assume that some of our audience

1 will be interested by chemical. So just to show you --
2 give you a little tour of the feature. And I might have
3 forgotten to mention earlier, this is under development.
4 And so it's not filled out, but we have examples in there
5 to give you a feeling for what it would look like.

6 So, for example, if you click on the
7 polybrominated diphenyl ethers under chemicals, you reach
8 a page like this. And this will give you a little bit of
9 information about this class of chemicals, connect to more
10 information about this class of chemicals, that -- for
11 information that's already on our website.

12 And then beneath that, you have these -- are
13 clickable icons that will take you to each of the studies
14 within the program that are measuring this class of
15 chemicals. Beneath that, you'll see some of the findings
16 related to measurement of this chemical in people.

17 And this is a summary finding. Firefighters have
18 elevated levels of PBDE flame retardants compared to the
19 general population. So that's a findings statement, a
20 simple, clear, understandable to someone potentially, PBDE
21 flame retardants, not necessarily that easily understood.
22 But this is what we're aiming for is some succinct
23 statement.

24 And then this summary gives you a little
25 information about the project, the people who are studied

1 and what the chemicals are. But if you click on it, then
2 you'll go to a page that's going to give you more
3 information, so you can dig more deeply, where did this
4 come from, you know, some of the caveats that might be
5 there for the results, and what the studies are that
6 support this finding. And then links to more information
7 for -- like I said, so people who want to dig more deeply
8 can do so.

9 If you then are -- maybe possibly coming in with
10 a different set of questions, and you're thinking about
11 who are the people that I'm interested in, if you start
12 instead with firefighters, you'll come to this page,
13 which, you know, currently is -- just has this one study,
14 but as you heard earlier today, there's another study
15 happening right now.

16 And you can learn about all the studies that we
17 have that might relate to this group of people, and you
18 can see that this finding that we just looked at, you can
19 also reach it through this page, so that people can find
20 the same information regardless of how they climb in.

21 --o0o--

22 MS. DUNN: As was mentioned earlier, there's
23 also -- we have as part of the example children. So just
24 to give you a flavor of this in kind of a different
25 population group. So we have a number of studies that

1 have included children. And right now, we only have this
2 one -- oh, we have a couple -- just a couple example
3 findings. But it's the same concept. You would click on
4 this, and it would take you to more details about this
5 particular finding, including the studies that came -- it
6 came from.

7 And then last, but not least, the regional
8 approach. As you Uli mentioned, there's -- each of these
9 regions you can go in through the regions. And these are
10 the same eight regions that the CARE Study, which Nerissa
11 described earlier have used to divide up the state. So
12 once we have the data from the CARE Study, they'll fit
13 right into this tool that we're building.

14 And to show you what it looks like, we have the
15 San Francisco Bay area. So you can see, we have a little
16 bit of information about the area, the population, the
17 counties included, and approximately how many participants
18 in our studies were drawn from this area.

19 We have this interactive map for people who
20 are -- okay. Yeah. People know how this works.

21 So people can play around and figure out, you
22 know, if their region is included -- if their community is
23 included in this region. We have the studies conducted as
24 we have on the other pages. And the findings -- we have
25 this one example finding, and then we also -- on this

1 page, we're showing the partnerships that we have with the
2 studies that have been conducted in this area. So we're,
3 you know, connecting back up with who -- who are we joined
4 up with in this community in this region.

5 So that, in a nutshell, is the structure and the
6 approach that we're taking with this feature. I think we
7 could go back to the slides.

8 Oh, okay. Oh, wait. Go ahead, Uli.

9 Could you go back to the browser?

10 Yeah, sorry. This is the slide.

11 AGP VIDEO: Did you close it?

12 MS. DUNN: I didn't close it, no.

13 It's the left one.

14 AGP VIDEO: He had it on Chrome.

15 MS. DUNN: No, it was there.

16 MS. WEEREN: Yeah.

17 MS. DUNN: No, the far one. No.

18 Oh, no. He just closed it.

19 CHAIRPERSON SCHWARZMAN: Maybe it would be --
20 since the next thing we're going to do is do feedback and
21 discussion maybe you guys could be getting back it up --

22 MS. DUNN: Yeah, exactly.

23 CHAIRPERSON SCHWARZMAN: -- while we do that and
24 we can see whatever.

25 MS. DUNN: So just go to the slide.

1 concerned about, like exposures in the home?

2 PANEL MEMBER CRANOR: Well, that would be a
3 fourth way.

4 MS. DUNN: Okay.

5 PANEL MEMBER CRANOR: But what I was -- without
6 going -- without having four columns there, maybe you
7 could combine with the chemical acronym, "typically found
8 in" or "typically found around" or something like that, so
9 that that jumps out. And I don't know.

10 MS. DUNN: Yeah. Yeah. No, I --

11 PANEL MEMBER CRANOR: It seems to me that that
12 would be a way to grab the general public's attention more
13 than with the chemical name, which some people would find
14 attractive?

15 MS. DUNN: Right, the chemical name avenue really
16 reaches an audience that is the technical audience, as
17 you're -- as you're saying.

18 PANEL MEMBER CRANOR: Yeah.

19 CHAIRPERSON SCHWARZMAN: Jenny.

20 PANEL MEMBER QUINTANA: Just to follow up, maybe
21 you could have different ways to search for the chemical.
22 You could search by alphabetical name. You could search
23 by use, I think a lot of chemicals are solvents,
24 pesticides, you know, fragrances or something -- search
25 by -- you know, maybe there's different ways you could add

1 a search feature in the chemical to get a little more user
2 friendly like you're saying.

3 CHAIRPERSON SCHWARZMAN: I think there are some
4 places that already do that to some degree like the
5 Chemical Data Commons or Pharos that you could look to a
6 little bit for the multiple ways a chemical is listed. I
7 think they don't have as many of this sort of use or
8 application information, which I totally agree would be
9 really helpful of like how would someone naturally group
10 chemicals, not just chemical classes like PBDEs, but flame
11 retardants, or something, to look them up. Did you have
12 an issue, José?

13 PANEL MEMBER SUÁREZ: Sure. Well, first of all,
14 I want to say this is phenomenal. I think this is the way
15 that you've been working, and this is the direction
16 definitely to go. This is great. I'm really amazed that
17 we can have this access and that you grouped it by groups
18 of people and what we know about those. And I think
19 that's excellent. So I wanted to give you kudos on that.

20 I agree with what we have been talking about here
21 with having an additional way. So people can just click.
22 I want to know about diesel exposures and then that gives
23 them the list of the diesel ones and they can look at
24 that, right?

25 Another thing that may be interesting is looking

1 at trends. Maybe down the line after you've developed
2 this, putting a trends piece. So an important piece of
3 biomonitoring is are things getting better or are things
4 getting worse. So then by a trends time, we can see what
5 has been happening over the years for some of the studies
6 that we do have longitudinal information. So that could
7 be something that could be informative as well.

8 CHAIRPERSON SCHWARZMAN: Oliver.

9 PANEL MEMBER FIEHN: Well, especially for people
10 who are then finding -- they're clicking on children.
11 They're finding something is higher in children they would
12 like to know what it means. I know that is difficult. I
13 know that it's difficult to put it into a context and so
14 on.

15 But, you know, just saying that my -- children in
16 this region are higher exposed to chemical X. Should I be
17 worried? Should I move out? Should I contact the
18 authorities? Call 911?

19 I don't know.

20 (Laughter.)

21 PANEL MEMBER FIEHN: What do I do with that
22 information, right, and how high is higher, you know? So
23 I know that these are all very delicate questions, but
24 this is the obvious next question a person would ask.

25 CHAIRPERSON SCHWARZMAN: Just to go from that

1 point, Oliver, and I agree I would echo what José said
2 about this is wonderful as the first pass, is to say, you
3 know, Biomonitoring does so much with results return, I
4 imagine you already have a tremendous amount of
5 interpretive material.

6 And so maybe that's a relatively easy place to
7 start answering those questions is by drawing on the
8 results return material that you already have developed
9 painstakingly that interprets results. A question for
10 that -- I mean, this is maybe -- this is probably asking
11 too much. But to put it within the context of NHANES data
12 for the same chemicals, along those lines of like where
13 does this sit relative to X? Like is this high, is it
14 low?

15 And one place that we have data on that is from
16 national biomonitoring. So I don't know if that's in the
17 realm of possibility, but it would be interesting if it
18 could be.

19 My main suggestion, which seems like it might not
20 be possible is that orienting the results by study, speaks
21 to those of us who know what the studies are. But if I
22 were just going in and wanting to know biomonitoring
23 results, I would want the results, not the study. And I
24 wouldn't want to have to click through the individual
25 studies to find the results.

1 So like if I go into a chemical or into children,
2 what I get is a list of studies that have been done that
3 biomonitored for that chemical or those people. What I
4 would want to see in -- then I wouldn't -- then you have
5 to click in each individual study to find the results.

6 What I would want to see when I click on PBDEs is
7 what are PBDE levels in whom, and it would be like a data
8 table. But it would be an understandable data table, not
9 necessarily for -- you know, that would require science --
10 to be a scientist to interpret, but I would want the
11 actual data there not to have to click through a study,
12 and then come back out and go into the next study, and
13 then come back out and go into next study. Do you see
14 what I mean?

15 MS. DUNN: I understand what you're saying. I
16 think one of the complications -- so, I mean, people can
17 get to our data tables for each study by clicking through,
18 or on the PBDE page, for example, we would link to the
19 results for PBDEs. But it's not -- we've explored before
20 the possibility of combining across studies. And
21 currently, the studies are too disparate. It's not really
22 a possibility to combine across studies.

23 So I think it might be more possible once we have
24 more data, for example, from the CARE Study where things
25 are more comparable, but --

1 CHAIRPERSON SCHWARZMAN: Yeah, I don't actually
2 mean combining the studies' data --

3 MS. DUNN: Okay.

4 CHAIRPERSON SCHWARZMAN: -- because I recognize
5 why you can't. I mean that the -- that what you land at
6 is the results. And then if you want, you can link to
7 what was this study. Like, oh, I want to know about the
8 CYGNET study, but I would want to see what were the
9 results, what did they find?

10 PANEL MEMBER SUÁREZ: I thought that was
11 though -- like if you click on the Children, I thought
12 there was a summary in addition to listing the different
13 studies.

14 CHAIRPERSON SCHWARZMAN: Well, there's a summary
15 of a couple things, like hi -- like what have we learned?
16 It says one thing maybe that --

17 MR. WEEREN: So like these studies are kind of --

18 CHAIRPERSON SCHWARZMAN: Yeah.

19 MR. WEEREN: -- additional information here.

20 CHAIRPERSON SCHWARZMAN: Yeah. Like one thing is
21 pulled out about mercury poisoning, and then what's the
22 second thing, higher levels of PCBs. But that's not all
23 the information that's included in those -- in, you know,
24 CHAMACOS, CYGNET, et cetera, et cetera, HERMOSA. There's
25 lots more in those studies than is summarized in the what

1 we've learned.

2 MS. DUNN: But -- so the idea -- that's the idea
3 of, for example, if we went to CHAMACOS, we would -- I
4 mean, I'm -- I'm a little hesitant to go there, because
5 we've just, you know, had trouble getting back here,
6 but --

7 (Laughter.)

8 MS. DUNN: If you clicked on this page, you
9 would --

10 MR. WEEREN: I think it should be fairly safe.

11 MS. DUNN: Okay.

12 (Laughter.)

13 MR. WEEREN: Do it.

14 MS. DUNN: Okay -- you would immediately get
15 information. Here's -- you know, here's what this --
16 here's what this study was about, here are the data
17 tables. So like that's already built in.

18 CHAIRPERSON SCHWARZMAN: I'm not dismissing that
19 this is helpful information.

20 MS. DUNN: Yeah.

21 CHAIRPERSON SCHWARZMAN: I just -- it's been my
22 experience going to the Biomonitoring site that all of the
23 information is accessed through the studies, and it's not
24 how I want the information.

25 PANEL MEMBER SUÁREZ: So if you click back -- in

1 other words, if I understand correctly what you're
2 saying --

3 CHAIRPERSON SCHWARZMAN: Yeah.

4 PANEL MEMBER SUÁREZ: -- you'd like to have more
5 of those summaries, the higher levels. You'd like to have
6 like a list of 20 of those or whatever findings there are.

7 CHAIRPERSON SCHWARZMAN: Exactly. I want the
8 findings --

9 PANEL MEMBER SUÁREZ: Is it just because it
10 hasn't been populated yet?

11 MS. DUNN: Right, it's just a draft.

12 PANEL MEMBER SUÁREZ: Is that why we don't see
13 any more?

14 MS. DUNN: Yeah.

15 PANEL MEMBER SUÁREZ: Okay. So maybe that's --

16 MR. WEEREN: And maybe we can also change the
17 order, so that these studies are at the bottom of the page
18 and the findings are at the top of the page.

19 MS. DUNN: Yeah.

20 CHAIRPERSON SCHWARZMAN: Something like, I mean,
21 prioritizing in terms of quantity and how much it's -- you
22 want the findings, not like, well, these are the studies
23 that have been done.

24 MR. WEEREN: Um-hmm.

25 CHAIRPERSON SCHWARZMAN: And I know that within

1 the program, you know, we think about, oh, PBDEs. Well,
2 those were looked at in these three studies, and they were
3 looked at in different ways, so we can't combine the data,
4 which I totally understand.

5 But in terms of somebody coming in, they want to
6 know what are the findings on PBDEs.

7 PANEL MEMBER FIEHN: Can you click on this?

8 MS. DUNN: I'm not sure if it's -- so this is --
9 this is just a draft. Sorry.

10 PANEL MEMBER FIEHN: Oh, I see.

11 CHAIRPERSON SCHWARZMAN: So I think to my point,
12 I would -- I mean, this is just a draft, so maybe this is
13 where you're headed. But on that, if you click on the
14 mercury, I would then want to see the data table, and then
15 you could go look at HERMOSA, if you want to find out
16 about HERMOSA.

17 But you're just providing another access point to
18 the study description, which is not what people are going
19 to find out. I just don't think people are going to find
20 information about the study. They're going to find out
21 what was found.

22 MS. DUNN: Yeah, I mean, I think maybe this is a
23 slightly better example.

24 CHAIRPERSON SCHWARZMAN: I see puzzled looks.
25 Maybe I'm just not being clear.

1 PANEL MEMBER FIEHN: Yeah. And also --

2 DIRECTOR ZEISE: Go click on the chemical.

3 MS. HOOVER: Yeah.

4 DIRECTOR ZEISE: Let's go to the chemical and see
5 what happens.

6 MS. DUNN: Yeah. So --

7 DIRECTOR ZEISE: If you go to the chemical, Amy.
8 If you go to the chemical segment and click on -- you
9 know, you have the three ways of looking at it --

10 MS. DUNN: Right.

11 DIRECTOR ZEISE: -- and you click on a chemical,
12 what do you get there?

13 MS. DUNN: So right now -- so it's sounds like --
14 I mean, what Meg is saying is it would be nice to flip --
15 instead of having the studies be the first thing, to have
16 the findings be the first thing. But -- so you get
17 these -- you get these findings.

18 And this is where the, you know, different
19 results from different studies that you can't really
20 combine. So, for example, if you click on this one, this
21 is about the flame retardant levels decreasing over time,
22 what June-Soo was talking about earlier. It's actually
23 more complicated than that, right?

24 So -- but I mean -- I guess I have a little
25 resistance to the idea of bringing data tables into this,

1 because it's meant to be for a general population that is
2 possibly put off by tables of, you know, three decimal
3 points in every number kind of thing.

4 But, I mean, I think it seems like what you're
5 thinking is that people are not -- that somehow this isn't
6 reaching the level of information that you're looking for,
7 is that right?

8 CHAIRPERSON SCHWARZMAN: Yes. But that's not
9 what I mean to elevate, because I know it's not really
10 aimed at me.

11 (Laughter.)

12 MS. DUNN: Well, I mean, it should satisfy you as
13 an audience. You know, it -- so I think it's still
14 important.

15 CHAIRPERSON SCHWARZMAN: I think what I could say
16 is I think it should elevate the findings, not the
17 studies. And so I would want to see more findings than
18 the average person that you're targeting, but maybe you're
19 just meaning to provide summaries not data tables, which
20 is fine. Although, I think there is data that you could
21 provide that would not be the complete data table, but
22 that could be mean and variation compared to NHANES or
23 something like that. Like simplified data, not the whole
24 data table, or something. But I think I guess the bottom
25 line that I'm getting at is people will come to this to

1 find out -- to see the findings, not what studies have
2 been done.

3 MS. DUNN: Yeah.

4 PANEL MEMBER SUÁREZ: Not necessarily -- I mean I
5 would be interested, maybe because I am biased and I like
6 to do research, but I do appreciate having a list on top
7 of that, because it takes just a little bit of space
8 saying these are the studies.

9 And by the way, the important part of this page
10 really are the findings, which is I think what you're
11 getting at.

12 CHAIRPERSON SCHWARZMAN: Yeah. I'm not opposed
13 to having the studies there. I just don't want that to be
14 the only access point for the findings.

15 DIRECTOR ZEISE: Amy, I think we could probably
16 play around with it and kind of come up with some visuals
17 that could --

18 MS. DUNN: Yeah, well, I think it was help --
19 yeah.

20 DIRECTOR ZEISE: Yeah, and I think -- you know,
21 there are various approaches that one could use using
22 existing technologies to come up with some visuals. So
23 maybe we should play around with different ways of showing
24 it to try to get -- I think I understand you want to see
25 all of the data on a particular chemical even perhaps, is

1 that right?

2 CHAIRPERSON SCHWARZMAN: I guess depending on
3 what the access point is. And it wouldn't be all the
4 data, because I know that's not feasible.

5 DIRECTOR ZEISE: Not all the data, but I mean
6 summarized.

7 CHAIRPERSON SCHWARZMAN: Summarized, yeah.

8 MS. HOOVER: Let me -- let me just say, we were
9 all talking amongst ourselves, but I think -- so -- and
10 Amy did mention, you know, this is in the results database
11 by chemical, right? So you can already see in the results
12 database all the findings grouped by chemical. And what
13 Amy is trying to, do and Uli, they're translating that
14 into findings that are readable and accessible.

15 Now, let me just mention, the thing about NHANES,
16 we actually talked about adding a comparison to NHANES.
17 As Amy mentioned, there's some difficulty in integrating
18 our findings, because they're convenience studies. It's
19 not necessarily comparable. So we actually didn't do --
20 we didn't incorporate that in the results database.

21 But I think the elements of the findings, we can
22 actually bring in some comparisons in the findings to
23 NHANES. And the other thing we can try to do is I kind of
24 think I know what you're saying, which is also trying to
25 integrate.

1 So, you know, if we have one finding, and it's
2 common across five studies, talk about a finding, and not,
3 you know, link it to a single study. But I think that's
4 going to happen. It's just the examples we have right now
5 are simple examples. Is that -- I don't know if that
6 helps at all.

7 CHAIRPERSON SCHWARZMAN: That's good. And I do
8 really appreciate these summaries of like what we've
9 learned. I think that's -- I guess what I'm getting at is
10 that's the essential piece that I think people are coming
11 for is like what we've learned from doing these studies.

12 Yeah, Carl.

13 PANEL MEMBER CRANOR: Back to a word that Amy
14 used -- excuse me, my voice is bad today. I would think
15 that if I -- if I posed the question to my students, what
16 would you like to know? They don't know any chemical
17 names, but they might want to know what things am I
18 exposed to? I think you used the word "exposure", but
19 something like that more common, more accessible, and
20 something that you would think of a much less well tutored
21 person might pose that biomonitoring can help them with.

22 You probably don't want to say, but something
23 like what toxic chemicals are -- am I exposed to? Maybe
24 you don't want the word toxic there, but -- for various PR
25 kinds of reasons.

1 But that's sort of the idea. And what do I do --
2 you know, in what parts of my life do I find these things,
3 and what are they, and what do they do -- what -- are they
4 in my body, and to what extent are they in my body? And
5 sort of going from simple triggers to more -- however much
6 more information they want to learn from it.

7 Now, that's just me. I think about my students.
8 They don't have a clue about chemical names and that sort
9 of thing probably, but they're not science students
10 either.

11 MS. DUNN: Maybe your students could helps us to
12 test --

13 (Laughter.)

14 MS. DUNN: -- once we get something built.

15 PANEL MEMBER CRANOR: Well, I was thinking
16 actually, you know, focus groups, but yeah, maybe students
17 or something like that, sure.

18 CHAIRPERSON SCHWARZMAN: I have one other
19 question about other potential subgroups of people. And I
20 know it takes having sort of the statistical power to be
21 able to create subgroups. But will it be possible to
22 single out other populations whether they are racial, or
23 finer regional, or I guess -- I don't -- I guess probably
24 occupationally exposed is not going to be relevant, but it
25 depends on the study.

1 MS. DUNN: Oh, we have firefighters there.

2 CHAIRPERSON SCHWARZMAN: Firefighters, I guess,
3 yeah. Do you anticipate being able to do any finer
4 segments?

5 MS. DUNN: I mean, really the only limitation
6 will be what the findings -- what findings we have. So if
7 we have findings that are relevant -- for example, one of
8 the findings we have in this draft site is about infants.
9 So maybe we split infants out from children. I mean, I
10 don't think there's any real limitation in the feature
11 itself. It has the capability. It's more what do our
12 findings have.

13 CHAIRPERSON SCHWARZMAN: Yeah, I just wonder if
14 there might be -- if one way to bring people in is to
15 anticipate what some of the potential interest groups.
16 And like there are like the ACE studies that are
17 specifically targeting Asian-Pacific Islanders. And so
18 could we pull out those results?

19 MS. DUNN: Sure.

20 CHAIRPERSON SCHWARZMAN: And people who are
21 particularly interested in Asian-Pacific Islander
22 populations could access them.

23 MS. DUNN: Absolutely, yeah.

24 MR. WEEREN: No problem.

25 CHAIRPERSON SCHWARZMAN: Jenny.

1 Oh, sorry. Tom and then Jenny.

2 PANEL MEMBER MCKONE: I have to leave soon, so I
3 want -- how hard is it to put in a little video? I mean,
4 some sites I've seen that are really effective just have a
5 one-minute explanation that you click on. And I know -- I
6 mean a mark of a good website is that you don't have to
7 explain anything, but this is a little complicated. So
8 just a video of somebody giving a narration of what
9 biomonitoring is, and what we do that would be right on
10 top.

11 And then -- then every -- I think it would make a
12 lot of -- not a tutorial, but just an explanation. And
13 then people go, oh, it's about chemicals. It's about
14 people. It's about California. If it says all that, then
15 this all makes sense.

16 And I think some of it is we're trying to
17 intuit -- or interpret what everyone would want to see,
18 but maybe it's helpful to put the simplest possible thing
19 up top, which is -- and people love videos. I mean, if
20 you look at how this is done now, and these short ones,
21 right? Facebook, like little quick videos that carry a
22 message.

23 And some of them are -- I've seen some done
24 really well. I've actually had -- used some in class,
25 because they're so effective at covering a point. I mean,

1 they -- you know, they don't cover everything, but they're
2 a good starting point to engage you in the topic.

3 MS. DUNN: That's a great idea, yeah.

4 CHAIRPERSON SCHWARZMAN: I want to resume the
5 presentation --

6 MS. DUNN: Yeah.

7 CHAIRPERSON SCHWARZMAN: -- because they have a
8 little bit more to show us, and then we still have time
9 for comments and suggestions.

10 MS. DUNN: So can you move back to the slides?
11 Steve, can you move back to the slides.

12 --o0o--

13 MS. DUNN: Okay. So from here what we'll do is
14 taking all this great feedback that you've been giving
15 us - so thank you for all the new ideas that you're
16 putting into our -- the hopper in terms of how we can make
17 this a better feature more useful for people - we'll be
18 continuing to build it. And then the next thing is to
19 populate it with findings. And that means developing
20 findings from what the Program has done. And we'll be
21 talking about that in a second. And then as I've already
22 mentioned, we plan to do some testing within that
23 development phase.

24 --o0o--

25 MS. DUNN: So when we think about developing

1 findings, this can be challenging, because the results of
2 the studies are often complex. And the struggle is how do
3 we bring in the nuances of what was done and what was
4 found without making the statements confusing, and
5 especially for non-scientists. And there also may be
6 cases where different studies have had somewhat
7 conflicting results. And so we have to find a way to also
8 manage that kind of complexity.

9 So we would welcome your thoughts on that and
10 other challenges that you might have in mind in terms of
11 how do we take the scientific work and boil it down in a
12 way that's going to be interesting and useful and
13 accurate.

14 And we'd also be interested in your thoughts on
15 any specific findings from your awareness of the work
16 that's been done that you'd really -- what key findings
17 you'd really like to make sure are in here, and if you
18 have thoughts about how we would phrase any of those.

19 You may have noticed in the few examples that we
20 have these icons. Right now, they're very simple icons.
21 I'll have some examples on the next slide. They're
22 basically little pictorials that show something is
23 increasing, something is decreasing. If you have thoughts
24 about what we should be aiming for with respect to these
25 kind of icons. Like, how -- should we have just a few

1 that everything can be kind of categorized under or how --
2 how fine down -- fine detailed should we go with the
3 pictorials.

4 And we're having this discussion today. We have,
5 you know, a limited amount of time. We've also put into
6 people's packets these little input forms. So if you have
7 thoughts that you want to jot down, and just leave this
8 for us today. And after today, and anyone on the web, we
9 would welcome your thoughts through our email address.

10 So let's see.

11 --o0o--

12 MS. DUNN: So here's examples of the three icons
13 that are currently in the draft feature. One that's, you
14 know, something is going down, something is going up, and
15 then the bottle denoting a poison. That's what that third
16 one is meant to be.

17 And then these are examples of the findings
18 statements that were in the background materials. So this
19 is the kind of level of detail and length that we're going
20 for in terms of these statements.

21 --o0o--

22 MS. DUNN: So that's it. And we -- I guess we
23 have some more time for your thoughts on finding icons and
24 statements.

25 CHAIRPERSON SCHWARZMAN: Carl.

1 PANEL MEMBER CRANOR: Just very quick. I think
2 what you're trying to do is a great idea and any comments
3 I made were just how to make it better, so keep up the
4 good work.

5 (Laughter.)

6 PANEL MEMBER CRANOR: Thank you.

7 CHAIRPERSON SCHWARZMAN: Yeah. Jenny, Go ahead.

8 PANEL MEMBER QUINTANA: Just to -- I'm sure
9 you've done this, but just to make sure you're planning
10 for this to be mobile friendly, because I think that would
11 be really important for most people

12 MS. DUNN: Great. Thank you.

13 CHAIRPERSON SCHWARZMAN: This can include -- it
14 doesn't have to just be limited to the Panel. Any
15 other -- any thoughts from people and other attendees?

16 I had a question. You mentioned sometimes
17 there's complex situations in reporting results, like if
18 results are conflicting. Do you have any examples off the
19 top of your head, just so that we can see what kind of
20 thing you're wrestling with?

21 MS. DUNN: Well, for example, some of the earlier
22 studies with regard to PBDEs seem to indicate that the
23 levels were sort of uniformly decreasing. But I think
24 June-Soo mentioned it a little bit today earlier that
25 actually some of the more recent findings show it leveling

1 off, and even certain PC -- no, PBDEs going up. So that's
2 the kind of thing I'm talking about, where there's not
3 necessarily a uniform finding.

4 CHAIRPERSON SCHWARZMAN: But those non-uniform
5 findings still fit into a pretty coherent narrative --

6 MS. DUNN: True, in this case.

7 CHAIRPERSON SCHWARZMAN: -- it strikes me. So
8 it's not like you can say all these three studies showed
9 PCB -- PBDE exposures going down, but you can say taking
10 these studies together, it looks like PBDE exposures
11 decreased for a while and then have plateaued, and we may
12 be seeing, you know, the rise in a few or some -- you know
13 what I mean?

14 MS. DUNN: Um-hmm, yeah.

15 CHAIRPERSON SCHWARZMAN: Like I think what you
16 already have on there are very cogent sort of syntheses of
17 the findings. And I -- I guess I would encourage you to
18 just figure out the story you can tell from all the
19 findings without trying to force them into one super
20 simple story.

21 MS. DUNN: Great. Thank you.

22 CHAIRPERSON SCHWARZMAN: Yeah, Carl.

23 PANEL MEMBER CRANOR: I would echo that. I
24 thought Sara was very helpful earlier when she said this
25 is a typical pattern for persistent substances. They go

1 down initially maybe as you get early exposures, and then
2 you decrease them, but then they're in the environment and
3 they come back to bite in other ways. And you can tell
4 that story. Megan's point a perfectly coherent story that
5 makes the studies consistent.

6 MS. DUNN: Yeah, I really like the idea of it
7 being a story that we're telling. I think you're right,
8 that's what we need to do.

9 CHAIRPERSON SCHWARZMAN: The other thing that
10 occurred to me from some of the examples of your findings
11 that this slide that shows the icons and then these
12 findings statements would be potentially a little bit of
13 interpretation. Like, you have higher levels of PBDE
14 flame retardants. Like, that's helpful. That's
15 interpretation for somebody who doesn't know what a PBDE
16 is, but you have like benzophenone-3. Most people don't
17 know where that comes from.

18 And so you may not be able to condense that into
19 a statement, but maybe benzophenone-3 is clickable, and
20 takes you to the information page about benzophenone-3, or
21 something like that, that has information about sources,
22 or whatever, you know, you have from your results return
23 materials about potential health effects, or sources, or
24 whatever other information people would want to know when
25 benzophenone-3 doesn't like trigger any immediate

1 associations.

2 MS. DUNN: Yeah. We -- it's definitely the plan
3 to be interconnecting with information like what you're
4 referring to. And I think going back to what Dr. Cranor
5 mentioned earlier about finding a way that people -- that
6 we're actually serving it up in a way that people can --
7 not have to know what benzophenone-3 is. They can know,
8 okay, this is personal-care product related, for example,
9 if that was the case with this.

10 CHAIRPERSON SCHWARZMAN: Other -- yes, Mel.

11 PANEL MEMBER KAVANAUGH-LYNCH: Yes. Thank you.
12 I don't really have anything new to say, except that I
13 heartily agree with leveraging all the great work that's
14 been done on the results return. So using those things
15 that have already been developed to say, you know, where
16 these things are, how you can decrease your exposure, that
17 kind of thing.

18 MS. DUNN: Great. Thank you.

19 PANEL MEMBER SUÁREZ: Just a quick question about
20 the -- in the regions' section, do we have studies in all
21 regions or are the clickable ones only where the data is
22 available.

23 MS. DUNN: Well, right now, there's not much data
24 in a couple of the regions. We do have some studies. For
25 example, the Teachers Study has participants in many

1 different regions throughout the state, but it's not just
2 in one region. So I think we're going to have to think
3 about how we get that across so that when someone clicks
4 on a region, say the Northern California region, which
5 goes from Marin all the way to the Oregon border and
6 there's really -- currently, there's not much that -- of
7 the studies that we've done. Although, the firefighters
8 study that's currently being done is there, but -- you
9 know, we are thinking about having placeholders that say
10 The CARE Study is coming to your area in, you know, 2025.

11 (Laughter.)

12 MS. DUNN: You know,

13 MR. WEEREN: Stay tuned.

14 MS. DUNN: That's right.

15 But, I mean, if you have thoughts about how to
16 deal with that, you know, for example, San Diego,
17 currently also not a lot right now. So, you know, we
18 don't want people to go there and be discouraged. So any
19 thoughts you have about how we would message that would be
20 appreciated.

21 PANEL MEMBER SUÁREZ: I think what you're saying
22 is a way -- a good way to put it. So we have plans on
23 doing a study at a certain point in time in that area. I
24 don't think we can do much more, if there's nothing there
25 yet.

1 CHAIRPERSON SCHWARZMAN: Can you add teachers to
2 the list of people, since there's some dedicated studies?

3 MS. DUNN: Definitely.

4 CHAIRPERSON SCHWARZMAN: I mean, anything like
5 that where you have a -- there is a dedicated study would
6 be nice, like ACE, and Teachers Study, and stuff to pull
7 that out on the front page. I think partly it's just like
8 people who come in not knowing what to look for. If it's
9 pulled out like that, it increases awareness of what there
10 is.

11 MS. DUNN: Yes. Yes, definitely.

12 CHAIRPERSON SCHWARZMAN: Jenny.

13 PANEL MEMBER QUINTANA: Have you thought about a
14 more simple thing to do than a video where you maybe have
15 pictures of a study and they kind of scroll past the
16 person that's looking at the screen, and it flips BEST,
17 this, and it has pictures of that. And they kind of get
18 an awareness --

19 MS. DUNN: I know what you mean.

20 PANEL MEMBER QUINTANA: -- of what's there by
21 just watching this little loop. We kind of have that in
22 some of our SDSU home pages. And it just gives you a
23 feeling for what kind of studies there are, if you're just
24 sitting there and they're staring at the screen. I don't
25 know.

1 MR. WEEREN: So like feature findings or
2 something like this, so that --

3 PANEL MEMBER QUINTANA: No. No, just literally
4 like a picture of a teacher, a picture of firefighter --

5 MR. WEEREN: Oh.

6 PANEL MEMBER QUINTANA: -- a picture of a
7 so-in-so, kind of just running in a little loop as they're
8 deciding which population. So it kind of just gives you
9 an idea of what choices there are visually, you know,
10 without having to read the list.

11 CHAIRPERSON SCHWARZMAN: You asked for input on
12 the icons. What is that poison icon meant to signify?

13 (Laughter.)

14 MS. DUNN: Well, so we didn't have too many
15 findings actually already developed. But on the website
16 currently one of the key findings that's currently on the
17 website is about the elevated mercury levels in a
18 participant from one of our earlier studies from skin
19 cream. And it was in relation to the tainted skin Cream,
20 yeah. So not that it would come up that often. Yeah, but
21 just -- in a way, it was a concept of trying to
22 distinguish something that was really -- it was really not
23 a -- you know, something that was coming out of the means,
24 it was like an individual. It was more like a case study.

25 PANEL MEMBER FIEHN: Yeah. I read it as buy

1 American, avoid foreign products. I mean, you know, you
2 see what I'm saying. So it wasn't quite clear --

3 (Laughter.)

4 PANEL MEMBER FIEHN: -- that this is a single
5 case. It's isolated. It was a specific product, at a
6 specific time, I guess.

7 MS. DUNN: Yeah.

8 PANEL MEMBER FIEHN: So, you know -- and there
9 are scientists and they have their scientific views. But
10 most people are not scientists, and they need some
11 recommendations what to do with that finding really, what
12 to take from it.

13 You know, and it's hard, because often we don't
14 know. You know, we simply don't -- I mean, we know that
15 they're not acutely toxic, right? But there might be
16 long-time harm, and there's certain other studies. And,
17 you know, of course, mercury in skin cream is not good.
18 That's easy. So I do understand the icon.

19 (Laughter.)

20 MS. DUNN: Good.

21 PANEL MEMBER FIEHN: But I didn't know from
22 that -- from that one single sentence it was like, oh, oh
23 my God, you know, buy American. I mean, that was my
24 reaction. Buy American, right? I don't know.

25 MS. DUNN: It's one of the reasons it's so

1 important to do some testing before we go live, because
2 just that kind of feedback that we might be blind to that
3 someone coming in without, you know, our study knowledge
4 will just say, wait, what is this -- and yeah, so.

5 CHAIRPERSON SCHWARZMAN: The only other thought
6 that I had about icons is if you think about kind of
7 sorting and resorting the data in lots of different ways,
8 like, you know -- that you could mouse -- you could have a
9 set of icons that's like children's findings, you know,
10 metals, lots of different slices through the data. And
11 you would have an icon for that and you could mouse over a
12 study, and a certain subset of those icons would come up
13 to show you which topics that study relates to. And you
14 could probably do it in several different places in the
15 website, not just about the studies.

16 But something like that if you're trying to sort
17 of index the information along these different ways that
18 people might want to access it, or, you know, you could
19 mouse over it and it would show you which regions this
20 study, you know, was conducted in, or whatever. It was
21 like -- there's lots of different ways to slice the
22 information, and you might have ways to just indicate it
23 without having to click through, but that you could just
24 mouse over and it would show you a range.

25 MS. DUNN: Um-hmm.

1 CHAIRPERSON SCHWARZMAN: Sara.

2 MS. HOOVER: I just wanted to make one quick
3 clarification. That was one finding in our study but it's
4 a very broad issue, and it's -- you know, it goes
5 throughout California. We connected with FDA about it.
6 It's a very well known problem the mercury in skin cream.
7 And it is skin cream that is basically adulterated in
8 other countries and brought over. So I understand the
9 reaction to the statement, but I didn't want to leave it
10 on record that it was a single isolated finding. It's a
11 very broad concern.

12 CHAIRPERSON SCHWARZMAN: Any other feedback again
13 about this?

14 Yes, Mel.

15 PANEL MEMBER KAVANAUGH-LYNCH: So I'm notoriously
16 bad at icons. I can never figure out what any of them
17 mean.

18 (Laughter.)

19 PANEL MEMBER KAVANAUGH-LYNCH: But I -- the ones
20 with the arrows --

21 MS. DUNN: Yeah.

22 PANEL MEMBER KAVANAUGH-LYNCH: -- my mind went
23 immediately -- so you said going down or going up. And I
24 read it as low or high, so -- because I think most of our
25 studies aren't over a period of time. They're just a

1 single measurement. So it's the same icon, two different
2 interpretations.

3 MS. DUNN: Yes, the icons are surprisingly
4 challenging. This is not the first set that we've -- you
5 know, we've gone through feedback internally, and it's
6 really hard to find an icon that everyone understands, and
7 that seems relevant to the finding, but we're going to
8 keep trying.

9 CHAIRPERSON SCHWARZMAN: I think we'll wrap-up
10 this portion. Thank you so much for the work on this, and
11 for showing it to us, and being open to our input.

12 We have a public comment period now, before we
13 close. And I have one comment card. I just want to check
14 and see if there's anything else from the web or in
15 person. And I'll call on Davis Baltz.

16 MR. BALTZ: Hi. Davis Baltz. I'm a public
17 educator and advocate on environmental issues.

18 Is that better?

19 Okay. First of all, a couple quick comments on
20 Amy and Uli's presentation. To the degree that it's
21 possible, if you could click through on demographic or
22 occupational status, I think that would be very helpful,
23 and would draw in people who wanted to see that
24 information right off the bat.

25 A second one, which may not be possible, but

1 could you click through on a disease that might be
2 implicated with exposure to certain a chemical?

3 It maybe, you know, beyond the mission of the
4 Biomonitoring Program, but I know, for example, the
5 Collaborative on Health and the Environment has a database
6 where you can search by chemical, but you can also search
7 by disease endpoint and find out what the strength of the
8 evidence is for that particular chemical. So, for
9 example, you could click on breast cancer, and all the
10 breast cancer carcinogens would come up, including how
11 strong the evidence is linking the disease to that
12 chemical exposure.

13 On the icons, I think one way actually you could
14 not exceed your mission as a State agency would be to have
15 a icon that would denote a Prop 65 chemical. You could
16 have a 65 with an R for reproductive toxicant or a C for
17 carcinogen. And that might be another way to bring people
18 in who were looking for something like that.

19 On the icon that was a straight up arrow or the
20 straight down, as Mel mentioned, one way to maybe improve
21 that would be to have a little X and Y axis with an arrow
22 going up or an arrow going down. Maybe that would be more
23 accessible for some people.

24 And then the last point on that is I think Meg
25 mentioned this is how does the California data compare

1 with NHANES. And we've never been able to pull out NHANES
2 data to look at what's happening specifically in
3 California, and we know that that's important. And
4 especially now with what's going on in Washington, the
5 Biomonitoring Program is poised to provide data that may
6 not be accessible or available too much longer or to the
7 degree that it has been at the federal level.

8 And as California has stated through many public
9 officials that we are going to stay the course, and resist
10 some of the trends that are happening in Washington, the
11 Biomonitoring Program is a good exemplar of that. So with
12 the program 10 years old, I just want to commend Dr. Wu,
13 Dr. She, and Sara Hoover for their leadership through the
14 years on this program, and how very important it is.

15 And the budget is obviously the key hurdle that
16 we need to overcome right now. And so I will do what I
17 can in my small way, but I encourage everyone in the
18 program and on the SGP, and public interest organizations
19 to -- let's figure out ways to put our shoulder to the
20 wheel and make sure this program not only survives, but
21 increases its budget, so it provides the kind of
22 information that California can demonstrate, that we are a
23 national leader, in spite of what's happening in
24 Washington.

25 CHAIRPERSON SCHWARZMAN: That's a nice note for

1 ending, but I would --

2 (Laughter.)

3 CHAIRPERSON SCHWARZMAN: -- say that we have
4 another moment, if there's any other comments before we
5 close?

6 And nothing on the web?

7 Nothing coming in from remote participants.

8 MS. KAUFFMAN: No.

9 CHAIRPERSON SCHWARZMAN: Anything else from the
10 Panel?

11 Okay. So with that, I will adjourn the meeting.
12 There will be a transcript posted on the Biomonitoring
13 California website when it's available. And the next SGP
14 meeting will take place August 22nd in Oakland or Richmond
15 once the location is determined.

16 I want to thank everybody for their ongoing
17 efforts with the Program and for contributions to today's
18 meeting, and adjourn this meeting.

19 Thank you.

20 (Applause.)

21 (Thereupon the California Environmental
22 Contaminant Biomonitoring Program, Scientific
23 Guidance Panel meeting adjourned at 4:56 p.m.)

24

25

1 C E R T I F I C A T E O F R E P O R T E R

2 I, JAMES F. PETERS, a Certified Shorthand
3 Reporter of the State of California, do hereby certify:

4 That I am a disinterested person herein; that the
5 foregoing California Environmental Contamination
6 Biomonitoring Program Scientific Guidance Panel meeting
7 was reported in shorthand by me, James F. Peters, a
8 Certified Shorthand Reporter of the State of California,
9 and thereafter transcribed under my direction, by
10 computer-assisted transcription.

11 I further certify that I am not of counsel or
12 attorney for any of the parties to said meeting nor in any
13 way interested in the outcome of said meeting.

14 IN WITNESS WHEREOF, I have hereunto set my hand
15 this 9th day of March, 2018.

16
17
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19 

20
21
22 JAMES F. PETERS, CSR
23 Certified Shorthand Reporter
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