

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

THE CALIFORNIA ENDOWMENT
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7TH FLOOR
1111 BROADWAY
OAKLAND, CALIFORNIA

THURSDAY, JULY 10, 2014
10:01 A.M.

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

PANEL MEMBERS:

Ulrike Luderer, Chairperson, M.D., Ph.D.

Asa Bradman, M.S., Ph.D.

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

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

Thomas McKone, Ph.D.

Julia Quint, Ph.D.

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

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY:

Dr. Gina Solomon, Deputy Secretary, Science and Health

OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT:

Dr. George Alexeeff, Director

Mr. Alan Hirsch, Chief Deputy Director

Dr. Lauren Zeise, Deputy Director, Scientific Affairs

Ms. Amy Dunn, Research Scientist III, Safer Alternatives Assessment and Biomonitoring Section

Ms. Sara Hoover, Chief, Safer Alternatives Assessment and Biomonitoring Section

Ms. Fran Kammerer, Staff Counsel

Dr. Laurel Plummer, Associate Toxicologist, Safer Alternatives Assessment and Biomonitoring Section

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

DEPARTMENT OF PUBLIC HEALTH:

Dr. Michael J. DiBartolomeis, Chief, Exposure Assessment Section, Environmental Health Investigations Branch, Lead of Biomonitoring California

Dr. Laura Fenster, Research Scientist

Ms. Duyen Kauffman, Results Return Coordinator

Dr. Jianwen She, Chief, Biochemistry Section, Environmental Health Laboratory

Dr. Nerissa Wu, Chief, Chemical Exposure Investigations Unit

DEPARTMENT OF TOXIC SUBSTANCES CONTROL:

Dr. Myrto Petreas, Chief, Environmental Chemistry Branch

GUEST SPEAKERS:

Ms. Claudia Polsky, Deputy Attorney General, California Department of Justice

Dr. Thu Quach, Cancer Prevention Institute of California

Dr. Meredith Williams, Deputy Director, Safer Products and Workplaces Program, California Department of Toxic Substances Control

ALSO PRESENT:

Ms. Nancy Buermeyer, Breast Cancer Fund

Mr. Dave Edwards, California Air Resources Board

Mr. Brian Endlich, California Department of Toxic Substances Control

Ms. Trudy Fisher

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

ALSO PRESENT:

Mr. Ernest Pacheco, CWA

Dr. Veena Singla, Natural Resources Defense Council

I N D E X

	PAGE
Welcome George Alexeeff, Ph.D., D.A.B.T., Director, Office of Environmental Health Hazard Assessment	1
Overview of the Meeting Ulrike Luderer, M.D., Ph.D., Chair, Scientific Guidance Panel (SGP)	2
Program Update Presentation: California Department of Public Health (CDPH)	5
Panel Questions	19
Public Comment	27
Panel Discussion	27
Laboratory Update Presentation: CDPH	31
Panel Questions	41
Presentation: Department of Toxic Substances Control (DTSC)	44
Panel Questions	56
Public Comment	63
Panel Discussion	65
Afternoon Session	79
Afternoon Session: Introduction of Speakers and Opening Remarks Dr. Luderer, Chair, SGP	79
Biomonitoring and Consumer Product Regulation in California Presentation: Claudia Polsky, M. Appl. Sci., J.D., Deputy Attorney General, California Department of Justice	85
Panel and Audience Questions	103
Chemical Exposures from Cosmetics: A Case Study of Nail Products Presentation: Thu Quach, Ph.D., M.P.H., Research Scientist II, Cancer Prevention Institute of California	110
Panel and Audience Questions	130

I N D E X C O N T I N U E D

PAGE

Informing Safer Consumer Products Decisions through Biomonitoring	
Presentation: Meredith Williams, Ph.D., Deputy Director, Safer Products and Workplaces Program, DTSC	141
Panel and Audience Questions	155
Discussion with Guest Speakers	
Panel and Guest Speaker Discussion	163, 203
Public Comment	195
Wrap-up of Afternoon Session	219
Open Public Comment Period	223
Wrap-up and Adjournment	225
Reporter's Certificate	227

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

2 DIRECTOR ALEXEEFF: Good morning, everyone. Is
3 that working? All right. I was told it will -- all
4 right. I'll follow the audience direction here.

5 Good morning, everyone. Ah, I can hear it now.

6 All right. Hi. I'm George Alexeeff, Director of
7 the Office of Environmental Health Hazard Assessment. I
8 want to welcome the Panel, as well as the audience both
9 here and on our webcast to the Scientific Guidance Panel
10 for California Environmental Contaminant Biomonitoring
11 Program, also known as Biomonitoring California.

12 So I want to thank the Panel for taking time out
13 of their busy schedules to be here to help us discuss
14 these issues regarding the Biomonitoring California
15 Program. And I also want to thank the public for their
16 participation in this important meeting.

17 So I want to remind everyone that this meeting is
18 being transcribed, and it's also being broadcast via
19 webinar. So please remember to speak clearly into the
20 microphones.

21 So I would like to provide a brief overview of
22 the last Scientific Guidance Panel meeting. Our last
23 meeting was held in Oakland on March 27th. At that
24 meeting, the Panel heard Program and Laboratory updates.
25 They unanimously voted to recommend adding chromium to the

1 list of designated chemicals for Biomonitoring California.
2 They unanimously voted to recommend adding antimony,
3 beryllium, cobalt, manganese, molybdenum, thallium,
4 tungsten, and uranium to the list of priority chemicals
5 for Biomonitoring California.

6 The Panel further recommended that the Program
7 develop methods to measure antimony and beryllium. Two
8 public comments on the priority metals agenda item that
9 were submitted after the March meeting have been posted on
10 the biomonitoring website.

11 The Panel discussed with Dr. Jon Sobus of U.S.
12 EPA his research on best practices for biomarker
13 collection, analysis, and interpretation. And for more
14 information on the March meeting, please visit our
15 biomonitoring website.

16 So as a few logistic announcements, emergency
17 exits and restrooms are to my right and back.

18 And now, I'd like to turn the meeting over to the
19 Panel Chair, Dr. Ulrike Luderer.

20 CHAIRPERSON LUDERER: Thank you very much,
21 George. I'd also like to welcome everybody, all the Panel
22 members and the members of the public who are
23 participating either here in person or by webcast, as well
24 as the Program staff. I'd like to just briefly review the
25 Panel goals for the meeting. So the Panel today will

1 receive Program and Laboratory updates and provide input
2 on those. And we're also going to participate in a
3 special afternoon session about exposure to chemicals in
4 consumer products. We'll hear from three distinguished
5 speakers. And the Panel and the speakers will discuss how
6 the Biomonitoring California Program can work together
7 with other unique California programs, such as the Safer
8 Consumer Products Program, and the Safe Cosmetics Program
9 to achieve common goals. And we'll hear more about those
10 programs this afternoon.

11 I wanted to remind everyone that for each agenda
12 topic, time is provided for Panel questions, for public
13 comment, and then also for Panel discussion. Regarding
14 the public comment, if any member of the public would like
15 to make a comment, he or she should please fill out a
16 comment card, which can be obtained from the table near
17 the door. And you can turn those in to Amy Dunn. Amy is
18 there in the back holding up the comment cards. And
19 members of the public who are not at the meeting, but who
20 are participating by webcast, are invited to provide
21 comments via email to biomonitoring@oehha.ca.gov. And the
22 comments will be read out loud during the appropriate
23 agenda items to which they refer.

24 To make sure that the meeting proceeds on
25 schedule, we'll -- and that everyone has the opportunity

1 to speak, we're going to have to subject the public
2 comments to time limits. And we'll just simply divide the
3 time allotted for public comments equally among all those
4 who wish to speak.

5 I also wanted to remind everyone, please try
6 to -- please keep your comments focused on the agenda item
7 that's being discussed. And there is time at the very end
8 of the meeting for an open public comment period as the
9 last item of the day.

10 I also wanted to remind everyone again to speak
11 into the microphone and please introduce yourself for the
12 benefit of the transcriber as well as for those people who
13 are participating via webcast.

14 The materials for the meeting were provided to
15 the Scientific Guidance Panel members and are also posted
16 on the Biomonitoring California website prior to the
17 meeting today. There are a small number of copies of the
18 presentations and documents, and one sample Scientific
19 Guidance Panel folder for viewing at the table at the back
20 of the room.

21 We will take two breaks today, one around noon
22 for lunch, and one around 2:15 in the afternoon.

23 And now, I'd like to actually -- to start the
24 meeting by introducing Dr. Michael DiBartolomeis, who is
25 Chief of the Exposure Assessment Section, California

1 Department of Public Health and the lead of Biomonitoring
2 California. And Dr. DiBartolomeis will provide an update
3 on Biomonitoring California activities.

4 Michael.

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

7 DR. DiBARTOLOMEIS: Thank you, Dr. Luderer.

8 Good morning, Panel. Good morning, George. Good
9 morning, audience, and those of you who are on the phone,
10 and good morning, court reporter.

11 (Laughter.)

12 DR. DiBARTOLOMEIS: You don't get any credit.

13 (Laughter.)

14 DR. DiBARTOLOMEIS: This morning, as we usually
15 do, I'm going to cover very briefly some highlights of
16 what's happened since our last meeting in terms of the
17 general Program functioning and activities. And then, of
18 course, I'll be followed up by two more detailed
19 presentations by the two labs that will actually give you
20 some data and other things to keep your interest.

21 So let me go to the first slide.

22 --o0o--

23 DR. DiBARTOLOMEIS: Wrong arrow. There we go.

24 Start with a few Program announcements, including
25 an update on our Program funding, which I think you'll

1 find informative. And then as usual, I will cover the
2 highlights and progress of our four -- now four major full
3 collaborative projects that we're doing in the Program.
4 And I want to remind folks that we also do -- these are
5 full projects where we are involved from the start to end
6 with study design, specimen collection, of course the
7 laboratory analyses, and then the data analyses and
8 reporting and publications, et cetera.

9 We also do partial collaborations, for lack of
10 any other way to describe them, which would include any
11 part of a study, but at least the laboratory analyses. So
12 these are just the four major collaborative work projects
13 that we work on.

14 --o0o--

15 DR. DiBARTOLOMEIS: With regard to Program
16 announcements, as you know, or should know, we are
17 required every two years to submit and post a legislative
18 report. And I'm happy to say that the report has been
19 finished by the Program. Unfortunately, it hasn't been
20 released yet. Even though it was submitted for approval
21 and release in January when it is due, we're still waiting
22 for the actual release of the report. And I don't have
23 a -- I don't have a date at this point. I don't know when
24 it's going to be released.

25 We have -- since March, we have launched our new

1 interactive online database of biomonitoring results. And
2 if you haven't had a chance to go in there to take a look
3 at it, there's the link. So for those of you who are
4 online, you can go check that out while you're listening
5 to me. And it's incredible as usual. And I give a lot of
6 credit to OEHHA, Amy Dunn and others, who -- and my staff
7 over in EHIB that worked on this.

8 I'm going to now turn to the next slide, where
9 I'm going to cover some updates or some -- wrong arrow
10 again.

11 --o0o--

12 DR. DiBARTOLOMEIS: -- on the Program evaluation.
13 At the last meeting, I explained what the Program
14 evaluation was for. It's actually required under -- with
15 the CDC grant. We've expanded it somewhat to include the
16 whole Program, not just the CDC deliverables. Although,
17 there are five major CDC deliverables, which I'm not going
18 to mention here, unless you really want to hear them. Two
19 of them are specifically related to the labs, so there's a
20 separate component to the evaluation that includes a
21 laboratory evaluation, where we had a separate
22 subcontractor to do this. So actually Christine Arneson,
23 who many of you know and have spoken to, is the overall
24 Program evaluator.

25 And the laboratory evaluation report has been

1 drafted. It's in its -- it's pretty much a final draft
2 stage. The laboratory is reviewing it, and there will be
3 some sort of minor revision kind of, but otherwise it's
4 ready to go be and be incorporated into the general
5 report.

6 Since the last meeting, when I announced that
7 there would be some key informant interviews, those have
8 been completed. There have been 25, which is actually
9 substantial when you think about having to sit down and
10 talk for a couple of hours with people. It's quite a bit
11 of work. Fourteen current and previous staff were
12 interviewed, three current and previous SGP members, and I
13 assume you know who you are, five external collaborators
14 and then three stakeholders were interviewed.

15 In addition to the interviews, we had an online
16 survey that was sent out to a variety of people. And the
17 questions for the interviews and the questions in the
18 surveys had some consistency and overlap. And then there
19 were also some specific questions that were not -- that
20 were covered because of the different Program arms.

21 So we had 49 surveys go out and 40 were completed
22 and returned. I was trying to get 100 percent, but we, I
23 don't know, missed on that a little bit, but not bad.

24 --o0o--

25 DR. DiBARTOLOMEIS: Turning to the next slide.

1 Where are we now?

2 Christine is currently analyzing the data. And
3 it's substantial. I can only imagine. She has broken it
4 into four thematic areas, which include Program
5 Organization, which would include like the structure of
6 the Program and how it functions, its management
7 structure, communication, and decision making.

8 Another thematic area is Program Sustainability,
9 which is predominantly focusing on funding and staffing
10 and long-term projections for its continuation.

11 The third thematic area is Program Outcomes and
12 Impacts. And this would include the goals of the design
13 and results of studies, and how they impact policy and
14 public health. And just to mention the policy
15 implications, this afternoon's session, of course, as I
16 plug it several times while I stand here, is one of those
17 kind of areas where we're trying to bridge the science
18 with the policy.

19 And then finally, Public Involvement, which
20 includes the Scientific Guidance Panel. And that would be
21 relationships with collaborators, participants, external
22 advisors and stakeholders, and, as I mentioned, how we
23 utilize the Scientific Guidance Panel.

24 So I'm really looking forward to that report
25 actually. It should be ready -- well, it's definitely

1 going to be ready before the CDC grant ends at the end of
2 August, but I'm hoping to have it sometime sooner. I
3 don't know when our next SGP meeting will be, but my guess
4 is that we'll be able to summarize some of those results
5 at that next meeting.

6 It's going to be in November I've been told,
7 which makes sense. It's usually around November.

8 --o0o--

9 DR. DiBARTOLOMEIS: Okay. Turning to the next
10 slide. When I make slides, I tend to follow the rule of
11 not having gratuitous pictures on the slides, and so mine
12 tend to be kind of black and white and kind of boring.
13 However, I want you to note that this is not a gratuitous
14 picture. This is a piggy bank, and later we will be
15 passing the hat. We take any level of denomination.

16 So actually we -- the good news is that in the
17 2014-2015 budget, we -- the Program received \$700,000
18 augmentation of State -- I'm sorry, special funded -- from
19 special funds. It is a two-year limited term funding.
20 And half the money went to the Department of Toxic
21 Substances Control, and half of it went to CDPH.

22 We don't have any real specifics, other than in
23 terms of how we're going to use that funding, at this
24 point. Predominantly, it will be used for staffing. And
25 it will allow us to hire in the Program for staff for two

1 years.

2 There isn't any reason why it couldn't be
3 extended past two years, but there isn't anything yet
4 informally that would allow that to happen. So that's the
5 good news.

6 The other thing that happened was that the
7 Department of Public Health submitted, through the Agency,
8 a proposal to work with the Governor's Office or whatever,
9 and the legislature, a proposal to fund public health in a
10 reinvestment -- I guess a reinvestment proposal. And it
11 was \$55 million. And in that \$55 million were \$2 million
12 for the Biomonitoring Program in the General Fund.

13 And we were really confident that we were going
14 to receive this money. And, in fact, I think almost all
15 the people who were -- all of the programs that were in
16 that reinvestment proposal were feeling pretty good that
17 the vote was going to go in their favor. And then we
18 heard sort of on the 11th hour that only one of the
19 programs in that public health reinvestment would be
20 funded, and it was sort of pulled out. And biomonitoring
21 did not receive those \$2 million of general fund.

22 So I guess, in that regard, we're back to square
23 one. And I'm assuming -- I haven't yet heard anything
24 formal, but I'm assuming that we will again try for
25 augmenting our stable State funding. So, at this time, we

1 have \$700,000 coming in for the next two years for the
2 Program, and then we have the CDC funding.

3 So back in March, we had said that we had
4 received the funding opportunity announcement from CDC.
5 Well, we did submit a proposal. Just to remind you that
6 the proposal is -- and the award would be for up to \$1
7 million per year for five years. That's what our proposal
8 was for the full \$1 million.

9 Because of the way the FOA was written, it is a
10 very limited scope of work. In other words, they wanted
11 us to be -- any Program -- any State biomonitoring program
12 that would be applying to be concentrating on generating
13 data, not on new methods, on results return that sort of
14 thing. So that's the proposal we gave. It is
15 represented -- it's basically focusing on representative
16 population biomonitoring. So there would be no new
17 methods development.

18 So given this budget and our discussion this
19 afternoon and just in your general kind of consideration
20 of the Program think about in the next five years we
21 currently project to have a significantly less amount of
22 funds available. And we can certainly talk more about
23 that, if you want. It's your prerogative.

24 --o0o--

25 DR. DiBARTOLOMEIS: Now, going -- turning to our

1 Program project updates. I'm actually going to start with
2 the BEST project, which I should probably read the
3 acronyms. Let me find my first page, because I never can
4 get these right. The Biomonitoring Exposures Study. The
5 Pilot BEST -- there's two parts of this as you recall.
6 There's the Pilot part and then there's the Expanded
7 study.

8 With regard to the Pilot BEST, the -- a huge
9 significantly -- a huge accomplishment was returning the
10 second set of results, which just happened at the end of
11 June. And I actually saw the last day where they were
12 preparing the packages. And I'm -- it's incredibly
13 impressive.

14 First of all, there are a large number of
15 participants in this study. There are also -- the amount
16 of materials is incredible. I mean, I saw a team of about
17 seven or eight people in a room, listening to the soccer
18 game, putting this package together. And it was very
19 impressive and it took all day. So this is not -- and
20 plus all the work to get it up to that point. So this is
21 a very huge -- it's only a little box on a table on a
22 slide, but it represents a lot of work. So I just want
23 to -- kudos to everybody who worked on that.

24 So we're also still undergoing some analyses of
25 specimens. These include the polybrominated diphenyl

1 ethers, metals, and perchlorate. Summary statistics of
2 other Pilot BEST panels will be posted on the
3 Biomonitoring Program's website's searchable results
4 database in the next several weeks. And I just mentioned
5 the link for that. So you should be looking for that in
6 the next couple of weeks. And other panels include the
7 PFCs, perfluorinated compounds, organochlorine pesticides,
8 pyrethroid pesticides, organophosphate pesticides,
9 polychlorinated biphenyls, PCBs, PAHs, polycyclic aromatic
10 hydrocarbons, phthalates, and phenols.

11 --o0o--

12 DR. DiBARTOLOMEIS: So now turning to where we
13 are with the Expanded BEST status. Since the last
14 meeting, we have continued with analyzing both chemicals
15 that would be considered in the first set, as well as
16 chemicals that would be considered in the second set. So
17 in other words, PFCs in metals in one lab, and then -- and
18 also the urine metals have begun to be analyzed. So we
19 expect that this will be rolling along and will continue
20 past when the CDC grant ends in August 31st. Assuming we
21 get the new funds in, this is also part of the scope of
22 work in the new grants to continue with the Expanded BEST
23 analyses.

24 --o0o--

25 DR. DiBARTOLOMEIS: The other program -- the

1 other project that we spent a considerable amount of time
2 on at the last meeting is the Genetic Diseases Screening
3 Program collaboration, or GDSP. If you recall, Dr. Wu
4 gave a synopsis of what that study design and the goals of
5 the project would be.

6 And so our pilot -- this is a pilot study, and
7 our protocol to obtain approximately 1,000 samples from
8 Orange County -- Orange County, through this Biobank, has
9 been approved by the Human Subjects Review Panel, the IRB
10 Panel, so we're -- that's really good news.

11 We also have received approval of our application
12 and the package from the Genetic Disease Screening
13 Program. So they're -- so we're really set to go.
14 Everything is on track for us to be able to obtain these
15 samples and start moving forward. There is a question --
16 we can certainly start with the pilot. As we move on, and
17 the pilot is successful, future use of GDSP will depend on
18 funding.

19 And, in fact, that is one of the major focuses of
20 our grant proposal is to use these GDSP samples as a means
21 for obtaining a representation -- a representative
22 population of California. And the CDC grant covers
23 counties outside of Orange County as well, so it's
24 expanded across the State.

25 One of the things that we did, based on a

1 recommendation from the Panel at the last meeting, is that
2 I did inquire about having the fees of the GDSP samples
3 waived or reduced. I have not heard back as to whether
4 I'm successful or not. I'm pushing for having them be
5 waived. If they're waived, that's \$50 a sample, and we're
6 talking about a lot of samples. We can probably bring in
7 a staff person or use it for some other use. And that's
8 the business model I presented up the chain, so we'll see
9 what happens with that.

10 I think I've -- okay. So I think I've covered
11 everything that I wanted to say about GDSP.

12 --o0o--

13 DR. DiBARTOLOMEIS: I'm assuming that we might
14 have something more to say at the next meeting, in terms
15 of actually having samples in hand, and maybe doing some
16 initial work. I don't know. It's hard to say.

17 The other two full collaborative projects, which
18 you're very familiar with, we're in the publication stage
19 basically. There are still some data that could be maybe
20 picked through. But at this point, we're in the
21 publications phase. So I just wanted to let you know
22 where we are. The first paper has gone back and forth
23 with the collaborators and our program. And they
24 currently have it now, and it's in very good shape. So
25 we're assuming that that will be submitted shortly to a

1 California Safe Cosmetics Program, and the other being the
2 consumer products safety review and evaluation and
3 substitution going on at DTSC.

4 And so this is a milestone for me, and for the
5 Program, and for all of you sitting here, in terms of
6 bringing what I think has been sort of siloed programs
7 together, I think, for the first time in a discussion, at
8 least a public forum discussion. I know it's been -- I
9 know these programs have been mentioned here and there,
10 but never really discussed, and so I'm really looking
11 forward to that.

12 I'm always reminded of the sort of quip that
13 people use that it takes -- overnight change in government
14 is 25 years. I want to just tell you that on July 1st, I
15 hit 25 years of State service. And I'm happy to say
16 we're -- some changes are happening. So I don't think I'm
17 going to be here 50 years, you know, 25 years from now.
18 So hopefully other people will come and take over.

19 The three speakers are experts in their area.
20 They also are broad thinkers, so I'm really hoping and I'm
21 encouraging a robust discussion afterwards, as sort of the
22 thinking overall about this. I'm actually hoping we'll
23 get some specific recommendations as well, but I can't
24 tell you what to do.

25 But, you know, it would be great to have some

1 real specific guidance or some ideas coming out of this
2 discussion.

3 The other thing I want to say, there are a lot of
4 names up there, and we don't ever distinguish those who
5 are on grants, and those who are in kind, and those who
6 are State funded and that type of thing. It's just a
7 bunch of names. You know, each person has a personality
8 and each person contributes more than 100 percent to this
9 program, of which I and others are really proud and happy
10 about.

11 But, you know, sometimes you have to say goodbye
12 to people. And the grant, as I said, is going to be
13 ending at the end of August, and regardless of whether we
14 get the CDC -- the new CDC funding or not, some of them
15 are not going to be able to return. And I just want to
16 make a shout out to the Sequoia Foundation staff who, for
17 over five years -- or five years -- almost five years have
18 contributed significantly to the Program. We've made
19 friends. They're like family and it's going to be really
20 hard to say goodbye. So I just want to acknowledge you
21 all. You know who you are.

22 And thank you for your attention. If you have
23 any questions -- quick clarifying questions, I'd be happy
24 to answer them.

25 CHAIRPERSON LUDERER: Clarifying questions.

1 Dr. Bradman and then Dr. Quint.

2 PANEL MEMBER BRADMAN: Just a very quick
3 question. In terms of returning the results -- I should
4 first say on a more broad level that it really -- there's
5 been really great progress. And I think there's going to
6 be also a need for more discussions about issues related
7 to the changes in funding.

8 But without going to the big picture and focusing
9 just on the little picture, in terms of returning results,
10 you've -- still to do is analyzing participant
11 understanding. Are there any -- have there been any like
12 untoward events? Is there anything that stands out? Is
13 there anything that, you know, raises concerns about it
14 for perhaps on an immediate basis or is it -- has it gone
15 smoothly and then the expectation is to move forward and
16 evaluate really how people understood the information?

17 DR. DiBARTOLOMEIS: Well, you know, from my
18 perspective, it's run smoothly. And it's because we put a
19 huge effort into it, and we tried to cover all the bases.
20 It's not easy. Just even putting information packages
21 together logistically is difficult, but there's also the
22 content and the review process, et cetera, but I don't
23 know of any glitches.

24 I suppose if I would say one thing that we'd love
25 to improve upon, but it probably has a lot to do with

1 resource availability, is our timeliness. From the time
2 that we're collecting specimens to the time we actually
3 get results back to the participants tends to be fairly
4 long. And there's no finger pointing or bus throwing or
5 anything like that. This is a -- it's a very arduous
6 process to go from collecting samples all the way to
7 getting the results analyzed, et cetera, et cetera.

8 So other than that, that would be improved upon,
9 if we had more staffing and that sort of thing.

10 PANEL MEMBER BRADMAN: But no one called back in,
11 you know, fear and trepidation and -- you know, or outrage
12 or -- so there wasn't any individual responses that raised
13 concerns?

14 DR. DiBARTOLOMEIS: Not that I know if. In fact,
15 we do give a phone number for them to call. And I'm now
16 that person on those letters, and I haven't received any
17 calls, and I know that Michael before me and others. If
18 anything, it would be a call for more to clarify their own
19 particular health status, but nothing on the side of what
20 is this stuff or, you know, we're -- is this bad or good
21 or whatever? And I don't know if anyone --

22 MS. KAUFFMAN: I'm Duyen Kauffman. I'm the
23 Results Return Coordinator. And, yes, Michael -- I'm
24 confirming that Michael says that no one has actually
25 called back even after receiving 45 pages of results for

1 eight, you know groups of chemicals.

2 And we've actually also sent results of people
3 with elevated arsenic recently. And we've tried to make
4 telephone contact. And then when we're unsuccessful,
5 we've sent letters, and no one has actually called back
6 for follow up. We've said we'd really like to talk to
7 you, talk about potential ways that you could -- you've
8 been exposed and how to reduce exposure. And we haven't
9 had any response to that either. So I'd like to think
10 that, you know, we've explained things really well, and
11 people understand what we're telling them, but it's --
12 particularly, with the elevations, we were -- I was
13 surprised that we haven't had anyone --

14 PANEL MEMBER BRADMAN: That's great. I'm just --
15 you know, ten years ago the narrative often on returning
16 results was that people would be hysterical. They would
17 freak out.

18 MS. KAUFFMAN: Right.

19 PANEL MEMBER BRADMAN: And my experience, and it
20 seems, you know, now perhaps consistently across the
21 program here that that's not the case. And so I just
22 wanted to check in on that.

23 MS. KAUFFMAN: Thanks for asking.

24 CHAIRPERSON LUDERER: Dr. Quint.

25 PANEL MEMBER QUINT: Yes. As usual, very

1 impressive progress. I just had a question --

2 MS. HOOVER: Julia, your mic.

3 PANEL MEMBER QUINT: Well, I just want to repeat.
4 Impressive progress as usual. I had a question about --
5 and I'm very happy that you're at the point where you're
6 writing papers and submitting them. I don't know if there
7 is a chance for you to discuss some of your analysis and
8 the conclusions and things like that with the Panel or
9 present some of that here.

10 We get the results of the, you know, levels, but
11 we don't hear the richness of what your conclusions are,
12 and, you know -- and I think that would be very helpful.
13 First of all, it's what I enjoy, but it would be very
14 helpful for us to sort of synthesize some of this
15 information in terms of, you know, what our
16 recommendations might be for further studies or things
17 like that.

18 So I was just wondering if you -- I know it's
19 sensitive with publications that you can't broadcast the
20 results in public before you actually get them published,
21 but I was just wondering if you had plans -- how you were
22 planning to -- or if you were planning to have some follow
23 up on that?

24 DR. DiBARTOLOMEIS: So you sort of asked and
25 almost answered your own question. You know, I can't

1 speak for exactly how and when it would take place, but I
2 don't think there's any reason why we couldn't do
3 something like that, except that there is that whole
4 publish before you present kind of funny relationship.

5 Sara, is there any reason to not have something
6 like that on the agenda?

7 MS. HOOVER: (Shakes head.)

8 DR. DiBARTOLOMEIS: Okay. So it could be -- so I
9 think the answer would be when we're able to give a more
10 detailed presentation of data that has been, you know,
11 published or -- you know, and the collaborators are okay
12 with it, not only can we present that information, but
13 perhaps we could even get the collaborators to come in
14 here and, you know, have a discussion about the data, if
15 that would be helpful?

16 PANEL MEMBER QUINT: Thank you. Great.

17 CHAIRPERSON LUDERER: Dr. Cranor.

18 PANEL MEMBER CRANOR: I have a question about
19 budget, but don't feel you have to answer it if it's too
20 painful.

21 (Laughter.)

22 PANEL MEMBER CRANOR: You suggested the budget
23 has gone down. What was the budget in good times? What
24 is it now? The State presumably is in better shape than
25 it certainly would have been before an election a couple

1 of years ago. And I know that the University of
2 California is slightly better off than it was. And what
3 could be done to assist the budget? Now, if it's too
4 painful, you can say.

5 DR. DiBARTOLOMEIS: No, it's not painful. It's
6 factual. So the budget previously -- actually as it was
7 as of June 30th was \$2.65 million per year from the CDC
8 grant, which had a five-year termination -- you know, five
9 year limit, and approximately never exactly -- I never
10 know the exact number, but it's approximately \$2.2 million
11 of State funding from special funds, five different
12 special funds, that is split amongst the three
13 departments.

14 Now, the CDC funds are more or less going to the
15 two departments that have the laboratories. Now, with the
16 sunset or the end of the CDC grant, we would be
17 subtracting \$2.65 million per year. However, we have now
18 received \$700,000 for the next two years, which helps
19 compensate a little bit. And then if we were to get the
20 one million -- the \$1 million CDC grant for the next five
21 years per year, that brings us up to approximately a \$1
22 million shortfall from what -- where we are at the end of
23 the last fiscal -- of this past fiscal year.

24 So we are about \$1 million short. And, of
25 course, CDC funds have -- even if we had fewer limits,

1 they still are limited. The nice thing about State funds
2 is, other than the mandate that we have, it allows us to
3 grow, and it allows us to be more innovative and explore
4 things like methods development for unknown unknown
5 analyses and that sort of thing. CDC grant won't let us
6 do that. That's research in their minds.

7 So hopefully that answers your question. What we
8 can do about it? I told you the piggy bank will be coming
9 around.

10 (Laughter.)

11 PANEL MEMBER CRANOR: Thank you.

12 CHAIRPERSON LUDERER: Any other clarifying
13 questions from Panel members?

14 Actually, you kind of answered one of my
15 questions. But just for a little bit more clarification
16 about that, is it 700,000 in each year of the two years or
17 spread out over --

18 DR. DiBARTOLOMEIS: It's 700,000 for each year.
19 Although, the second year, for some reason, is 696,000. I
20 have no idea where the \$4,000 went. So maybe that's the
21 little sort of finder's fee.

22 (Laughter.)

23 CHAIRPERSON LUDERER: And then I don't know, I
24 recall a number of years ago we've had discussions over
25 the course of several different Scientific Guidance Panel

1 meetings about kind of the estimated budget that would be
2 required to do a complete population based sample of
3 the -- you know, representative of the California
4 population. And I recall that was somewhere over ten
5 million per year.

6 DR. DiBARTOLOMEIS: That was the figure about ten
7 years ago. I don't know if inflation would put it over --
8 but it's -- yeah, it's somewhere between nine and 11, I
9 think, somewhere in there.

10 CHAIRPERSON LUDERER: Thank you very much. That
11 was a very impressive overview of what the Program has
12 accomplished as always.

13 DR. DiBARTOLOMEIS: Thank you.

14 CHAIRPERSON LUDERER: Then I would like to now
15 take some public comments, if we do have any. I think I
16 saw some cards.

17 MS. DUNN: We don't have any.

18 CHAIRPERSON LUDERER: Oh, we don't have any.

19 Then we have some time for more Panel discussion
20 about the presentation?

21 Any questions, comments from Panel members?

22 Dr. Quint.

23 PANEL MEMBER QUINT: Let's see if I get this
24 right this time. Is it on?

25 DIRECTOR ALEXEEFF: It's on.

1 PANEL MEMBER QUINT: Okay. Michael, you
2 mentioned that no new methods development, is that
3 correct, for this coming -- I mean, with the CDC grant?

4 DR. DiBARTOLOMEIS: Yes, the CDC funding
5 opportunity announcement was pretty clear this go around.
6 Whereas, as I guess, even though it was before my time, it
7 was a little more flexible for the first five year grant,
8 in that they really are looking for a sustained -- a
9 program that's already sustained by State funding and --
10 or other funding and they really wanted to see data being
11 generated to expand the national database essentially, and
12 not use it for developing yet another method or exploring
13 new types of biomonitoring applications.

14 PANEL MEMBER QUINT: I should have said my name
15 is Julia Quint for the court reporter. Sorry about that.

16 I ask that, because we'll have the discussion
17 this afternoon, and we may hear information that might
18 lead to, you know, measuring something that we're not
19 measuring now. So I'm just wondering in that context are
20 we limited by what the Program is already doing in terms
21 of laboratory effort or -- and, you know, it's okay if we
22 are. I'm just wondering if we're brainstorming how --

23 DR. DiBARTOLOMEIS: So there's kind of two parts
24 to that answer. One is that obviously because of the new
25 information we have on the budget, the Program is now

1 getting together with the senior staff and leads, and
2 we're going to be discussing actually as early as next
3 week, the beginning of sort of prioritizing and planning
4 for the coming year as well as the five years out.

5 But the answer to the question about new methods
6 development or not new methods, it doesn't mean that we
7 couldn't develop new methods using, you know, in-kind
8 State funds, but we would have to give something up. I
9 don't think we're going to be able to add something
10 without taking something off the pallet, which is, of
11 course, open to a lot of robust discussion, because
12 there's questions about whether it would be worth
13 replacing maybe a panel that we already have with another
14 panel, or, you know, doing something that's maybe not a
15 complete analyses every time we do specimen analysis. You
16 know, I don't know what it would look like.

17 CHAIRPERSON LUDERER: Sara.

18 MS. HOOVER: Julia, just to clarify. Were you
19 asking for this afternoon if you were limited in what you
20 brainstormed, because of the limitation on what we could
21 take forward? I just wanted to --

22 PANEL MEMBER QUINT: Well, I don't think you
23 would limit the brainstorm necessarily, but I was just
24 wondering how realistic a brainstorm you could have, if
25 there are say a group of chemicals, something that, you

1 know, comes up in the discussion.

2 I mean with both Programs, I think there are
3 health endpoints that we aren't necessarily addressing in
4 the Biomonitoring Program. And if there is a way to do
5 biomonitoring, I was just wondering, even though we bring
6 it up, it's not realistic in terms of --

7 MS. HOOVER: Well, like Michael said, you know,
8 we're going be prioritizing, like, what we want to take
9 going forward. So I would say that that's actually part
10 of the discussion is really figuring out regarding
11 consumer products, are there particular chemicals,
12 particular products, you know, that the Panel is really
13 interested in? Like that's one piece of the discussion.
14 And as part of that, are there chemicals that like aren't
15 on the designated list that we should look at?

16 So, I think, you know, we should just think very
17 broadly. And then there's opportunities potentially with
18 complementary studies with DTSC. So, yeah --

19 PANEL MEMBER QUINT: Got it. Thank you.

20 CHAIRPERSON LUDERER: Any other questions or
21 comments from Panel members?

22 Okay. If not, thank you very much. And then we
23 will move on to our next set of presentations.

24 So first of all, I'd like to introduce Dr.
25 Jianwen She, the Chief of the Biochemistry Section of the

1 Environmental Health Laboratory Branch in the California
2 Department of Public Health.

3 And after Dr. She's presentation, Dr. Myrto
4 Petreas, Chief of the Environmental Chemistry Branch in
5 the Environmental Health Chemistry Laboratory in the
6 Department of Toxic Substances Control will be giving us a
7 laboratory update too.

8 So, Dr. She.

9 (Thereupon an overhead presentation was
10 presented as follows.)

11 DR. SHE: Good morning and welcome, members of
12 the Panel and audience and also Dr. Luderer.

13 --o0o--

14 DR. SHE: Today, I will provide update for
15 Environmental Health Laboratory. This includes staff
16 changes, also our analytical method development and
17 improvements, and third part actually is related to one of
18 Dr. Quint's questions, can you present some data. So in
19 my talk, I will present some limited data without
20 sacrificing opportunity of publication, and also get
21 approval from the PI. So some of the analytical data will
22 be presented today. Also, I will talk about our future
23 plans.

24 --o0o--

25 DR. SHE: First, I'd like to thank you -- thank

1 two staff, which is Dr. Yu-chen Chang. Dr. Yu-chen Chang
2 and -- she left us for a different program. While she was
3 with us, she was instrumental to help us to develop the
4 online phthalate method. And also, I'd like to thank Ms.
5 Alanna Viegas. Alanna is our sample manager specialist.
6 She did particular work to manage the samples, because
7 like we needed to make sure every device we provided for a
8 project need to be contaminant free. She also did
9 excellent work -- you may already contact her. She's a
10 coordinator on many projects.

11 And also I'd like to welcome Mr. Long
12 Nguyen(Nu-jeen). I hope I'm right. And, Long, if you're
13 here -- you are on the line. Long is from private
14 laboratory and he joined us recently. And he helps Dr.
15 Ryszard in the laboratory to do the inorganic chemical
16 analysis.

17 Also, I'd like to welcome two visiting scholars,
18 Mr. Jie Jiang and Dr. Yufeng Guan. Jie Jiang is from
19 ShenZhen CDC PRC. Mr. Jiang is the deputy director of
20 their analytical division. And he will be here with us
21 for six years -- six months.

22 Dr. Yufeng Guan is associate professor from
23 Southeast China University. Dr. Yufeng Guan will be
24 with -- stay with us for one year. Two visiting scholars
25 will work on the PAH method and help us. As you hear from

1 what Mike D. said, we need to find a way to sustain the
2 Program with a small contribution. I hope that Jie Jiang
3 and Yufeng Guan join us -- will be mutually beneficial.

4 Jie will work on the PAH. And then maybe leading
5 to the biomarker of diesel, we can develop that method.
6 And Yufeng Guan is right now working on the unknown
7 screening. That's the work that Dr. Yu-chen took on, but
8 she left.

9 So I think Dr. Guan is in the audience. Would
10 you mind to stand up, so we can welcome you.

11 Thank you.

12 --o0o--

13 DR. SHE: In the next few slides, I'd like to
14 talk about our method improvement or development. The
15 method is continually improved, because, you know, CDC
16 keep changing. Even the grant maybe not emphasize develop
17 new methods, but you can -- five years period of time, you
18 cannot say, okay, CDC improved, you need to improve,
19 otherwise data cannot be matched.

20 So we keep our method improvement effort on.
21 This slide I may show you before. We -- for the previous
22 studies, we only reported six phthalate analytes, but
23 right now we added four more, so we can work on -- we
24 can -- for the new project, like BEST project, we will
25 report ten of them. This is referring to three of the

1 newly added analytes being biomarkers of DEHP.

2 --o0o--

3 DR. SHE: This does reference slide to show you
4 the abbreviations and the parent compounds and analytes.
5 And again it's abbreviation.

6 --o0o--

7 DR. SHE: Another area of the method improvement
8 we are working on is -- that's like in the March SGP
9 meeting, we had a very extensive discussion of metals.
10 And then -- so we -- we expand our metal -- urine metal
11 panels from right now from four. We tried to add six of
12 them, but we successfully added five. So that's the total
13 nine.

14 With chromium, we developed a method, and then
15 the method detection limit we wish it could be 0.16 ppb,
16 because the chromium in the general population the levels
17 are around 0.16 to 1.0 ppb. So we need to have a very low
18 detection limit. While we use this method, the urine, in
19 our application, we find it very challenging for us to
20 reach that level. So we will keep improving the method
21 and hope we can handle the chromium in shortly -- make the
22 method more reliable and solid. But anyway, we can do
23 other nine of them for the BEST study.

24 --o0o--

25 DR. SHE: And also as you know, we are taking on

1 the new method which is organophosphate flame retardant.
2 This new method includes two parts. And we finished the
3 first part, which is mass spectrometer part. We still
4 need to continue to finish the separation part.

5 And also for the bisphenol A analogs, we
6 developed the method. Right now, we are testing the pool
7 urine further validate to make sure it can be used for
8 general population.

9 Last time, I mentioned we developed a database
10 for unknown screening. We called it Toxic Chemical Finder
11 database. This database includes more than 600 toxic
12 chemicals. We are right now with Dr. Yufeng Guan's
13 effort, we tried to use this database to see, if we say we
14 found a chemical, at what level we found it -- if we say
15 we don't find it, at what level? So the concept is
16 there's a qualitative analysis needed to be supported by
17 quantitative information.

18 --o0o--

19 DR. SHE: The next three or four slides -- a
20 couple slides, I will talk a little bit of the analytical
21 results. So this slide that we get from FOX study, we
22 look for -- in the slide I show five chemicals BPA, BP-3,
23 triclosan, methylparaben, propyl paraben. All of the five
24 compounds were detected at more than 94 percent of the
25 samples.

1 And then please be aware the Y axis is on the log
2 scale. So the high -- two highest levels chemicals are
3 BP-3 and methylparaben. But you can see, except BP-3, the
4 other four chemicals, the level we find in the
5 firefighter's study is very similar to CDC's reporting,
6 compared with the NHANES 2009 to '10 data for the male
7 person older than 25. This database possibly like 900
8 peoples. Our study population is 100.

9 So BP-3 actually as a level is five times higher.
10 So we tried to find out, and then what's the cause of this
11 high level BP-3. And we do find it is not because of a
12 laboratory bias, because we did the other study, MIEEP,
13 and the different study, we didn't find this kind of
14 significant high levels.

15 And during the paper preparation, so we look for
16 the age, we look at body fat, we look for the
17 firefighter's job titles and then many things can
18 contribute.

19 --o0o--

20 DR. SHE: And in the last meeting, I really talk
21 about HERMOSA Study, if you still remember. And HERMOSA
22 Study was designed by our collaborator at UC Berkeley to
23 characterize levels and the source of endocrine disruptor
24 chemicals from personal care products in young Latina
25 women, and also try to see if we can lower this exposure

1 by using different products.

2 EHL, through UC Berkeley, analyzed phthalate
3 metabolites, also the environmental phenols and the
4 creatinines.

5 This slide shows the results on the column 3 and
6 column 4 pre-intervention and post-intervention results.
7 And the P value was on the last column. You can see for
8 few chemicals, those four chemicals we listed here, there
9 are a significant difference before and after
10 intervention.

11 --o0o--

12 DR. SHE: We also work with -- actually, through
13 Dr. Luderer we get contacted Dr. Yifang Zhu. We start a
14 laboratory collaboration with UCLA Environmental Health
15 Science Department. The goal of this study is to see --
16 determine PAH exposure in non-smoking taxi drivers from
17 the greater Los Angeles area.

18 So they collect urine samples from 22
19 participants. And then before the work shift, six-hour
20 shift, so five time collections. So each person will
21 collect the total samples. And the 22 times means 220
22 samples.

23 At the same time, they also collect some
24 reference samples, I guess 12 samples from the people who
25 are not taxi drivers. There are a lot of specific

1 exposures to the PAH. So we just finished this 232
2 samples analysis, and then Dr. Yifang Zhu is digesting the
3 data to the statistics. I hope we can report the results
4 in the near future.

5 --o0o--

6 DR. SHE: Regarding our ongoing projects, and
7 then we right now try to finish all of the BEST sample
8 analysis so far, I think, for blood samples. And thanks
9 to our inorganic group, the number every day keeps
10 changing, so 250. And actually, I heard now is we almost
11 finished the laboratory analysis almost all of the
12 samples. That's very great for Dr. Ryszard's work.

13 And then for other few groups of chemicals, for
14 example, for OP specific metabolites, we finish all of the
15 samples for the laboratory analysis, but we still not
16 finish data review and give the data to the PI. So we've
17 finished the laboratory analysis, and also for creatinine
18 we finished.

19 You can see the other -- to a different degree,
20 we finished the environmental phenol. Worst case we
21 didn't start even for perchlorate, arsenic speciation.
22 Arsenic speciation we need to finish all of the -- almost
23 all of the total arsenic before we can start it. Also, we
24 share the instrument. We need -- so but overall, we are
25 in good shape to finish the studies.

1 --o0o--

2 DR. SHE: Another study I'd like to talk about is
3 the laboratory was requested by Orange County Health
4 Department, they identified a 20-month old with symptoms
5 of severe mercury poisoning. And then also they analyzed
6 the product they used. I think the mother used a
7 skin-lightening cream was made in Mexico. And this cream
8 have almost 38,000 ppm of mercury. And you can see the
9 reference, the FDA's regulatory limit for mercury is less
10 than 1.0 ppm for the cream.

11 And L.A. Health Department, they also find
12 another six households with a total of 45 people
13 potentially also exposed to this cream.

14 So EHL was requested, because this person have no
15 medical insurance, so no one can help them to analyze. So
16 we discussed with our Division and the Biomonitoring
17 leads, so we decided to help them.

18 --o0o--

19 DR. SHE: So so far, nine samples were sent to
20 us, five males, four females. And at the same time, I
21 think DTSC and U.S. EPA decontaminated the house. So
22 these nine samples were after the decontamination was
23 done. We also -- we'll follow up for any kids or any
24 persons with symptoms, plus on mercury level above 5 µg/L.

25 You can see compared to the mercury level for the

1 similar population, our analysis of these nine samples is
2 really high. The levels -- six out of nine samples is
3 above 95th percentile. So that's very high levels.

4 --o0o--

5 DR. SHE: Now, I plan to just update you with
6 what we plan to do in the next three months. We still
7 need to finish our method development on OP flame
8 retardant, complete the validation. And we encountered
9 some problem on the BPA analogues. So it's taken us
10 longer than we planned or expected, but we will continue
11 to finish the validation.

12 And also, we continue our investigation on the
13 unknown screening method. And we have completed the
14 analysis of BEST samples. We have one pending
15 collaboration, which is a study designed by Kaiser and Dr.
16 Assiamira Ferrara is the PI. This is a study to look for
17 the environmental lifestyle and the healthy pregnancies.

18 They asked us to look for the women with or
19 without gestational diabetes. And it's roughly 1,800
20 samples, three years. So we tried to develop an MOU with
21 them to make sure the data can be used by Biomonitoring
22 Program, because 1,800 samples takes a lot of effort from
23 the laboratory to do it. So we're just making sure this
24 goes -- be mutually beneficial.

25 Thank you very much.

1 CHAIRPERSON LUDERER: Thank you very much, Dr.
2 She. It's always impressive to see all the progress that
3 the laboratory has made with the addition of the metals
4 and the additional phthalate metabolites, and making
5 progress on so many of the projects.

6 We have time for clarifying questions from Panel
7 members, and then we'll have more discussion after the
8 second presentation too.

9 Dr. McKone.

10 PANEL MEMBER MCKONE: Tom McKone. You know, one
11 of the things that you've emphasized today and in the past
12 is the role of methods development. It's been very
13 important to the Program your methods development. And a
14 lot of your work as been innovation.

15 So we heard earlier about some of the budget is
16 even -- well, the bad news -- or the good news is it won't
17 be cut as much, but the bad news is there's going to be
18 less money for methods development. Is that going to
19 affect some of what you've done or are you actually at a
20 point now where, you know, you're doing so much field work
21 that methods development isn't that important to the
22 growth of the Program?

23 DR. SHE: Budget definitely, like Michael D.
24 mentioned, like CDC. I think logically CDC sponsored you,
25 or the Program, five years, I think they expect in the

1 last five years you developed the basic methods, and then
2 you should go to production mode.

3 And so the CDC's effort makes a lot of sense. I
4 said okay, we want to generate more data. But like
5 everything is dynamic. CDC keeps moving the project of --
6 improve the -- the methods, and then they publish certain
7 data. They modified the value, said okay give a
8 recommendation. So that's a balance of how the laboratory
9 needed to take it on.

10 So I can see -- so like our leader already said
11 that CDC's part, but also we have funds from State. We
12 try to explore, like we -- visiting scholars. And we
13 visiting scholar before, which is also very successful.
14 So definitely, that's an impact.

15 Also, on the operation part, certain methods you
16 can bundle together, and then -- as long as it's not a
17 complete different method. Five years previous experience
18 maybe make the method development less money cost. So as
19 a Program, we need to balance this to see what kind of
20 method is completely new, or is it improvement or is it
21 expanding. So I think there will be effect on the
22 complete new methods more, than we just bundle the method
23 or expand our method.

24 CHAIRPERSON LUDERER: Dr. Cranor.

25 PANEL MEMBER CRANOR: Carl Cranor. On the

1 HERMOSA project, you had pre-intervention data, and then
2 post-intervention data. What was the time period between
3 those two?

4 DR. SHE: I think that's like, if I remember
5 correctly -- Dr. Asa Bradman, you want to talk about it --
6 yeah. Thank you.

7 PANEL MEMBER BRADMAN: Sure. Hi. I'm a
8 co-investigator in the project. The population was Latina
9 teenagers in the Salinas Valley, and we did an inventory
10 of personal care products. And then we developed kind of
11 a beauty bar, and we provided all the participants with
12 products that were, you know, advertised as not containing
13 many of these substances. And then the sampling was done
14 about three days apart.

15 PANEL MEMBER CRANOR: Only three days.

16 PANEL MEMBER BRADMAN: Only three days apart.

17 PANEL MEMBER CRANOR: Very short half-life.

18 PANEL MEMBER BRADMAN: Right. All of these are
19 very short half-life chemicals. So the point was to look
20 at changes over a short term, and also make sure that the
21 time frame was good so they could comply with the
22 requirements of the study. And all of these have
23 half-lives in the range of, you know, hours to a day.

24 PANEL MEMBER CRANOR: Thank you.

25 DR. SHE: Thank you, Dr. Asa Bradman.

1 CHAIRPERSON LUDERER: Any other clarifying
2 questions?

3 Okay. Then we'll move on to the next talk and
4 then we'll have time for more discussion afterwards. So
5 Dr. Myrto Petreas, who's the Chief of the Environmental
6 Chemistry Branch in the Environmental Chemistry Laboratory
7 will give us an update.

8 Dr. Petreas.

9 (Thereupon an overhead presentation was
10 presented as follows.)

11 DR. PETREAS: Good morning. So the update since
12 last March.

13 --o0o--

14 DR. PETREAS: I will briefly talk about staffing
15 changes, where we are with the analysis of our samples,
16 where we are with our instrumentation to identify the
17 unknowns, as we say, and other DTSC activities. These are
18 studies or programs we do for our Department that directly
19 or indirectly benefit the Program.

20 --o0o--

21 DR. PETREAS: So first, with the CDC cooperative
22 agreement, even though it's finishing, sometime in the
23 spring we recruited and hired Eric Houtz. Erika did Ph.D.
24 in Berkeley on PFCs and precursors in environmental media.
25 So it is a great combination and we brought her on board.

1 And now she's working on PFCs in serum, and also
2 continuing to looking at precursors and additional
3 chemicals, related PFCs. So she's a great addition to the
4 Program.

5 And as Dr. DiBartolomeis mentioned with the State
6 funding with the two limited term positions coming to our
7 laboratory, and we're in the process of advertising,
8 because -- since they're a very limited term, we want to
9 maximize the time that the people who may be attracted to
10 those positions will be on and working with us. So this
11 is moving.

12 --o0o--

13 DR. PETREAS: Where we are with sample analysis.
14 So we have completed our part on the Expanded BEST. This
15 is a new BEST study. We did all the PFCs, the
16 perfluorinated chemicals, for them, 337. And we completed
17 the entire Three Generations Study that I spoke before and
18 I'll show you some data from that. So these were 750
19 samples, and those serum samples were analyzed for PFCs,
20 PCBs, organochlorine pesticides, PBDEs, and the hydroxy
21 metabolites. And this is done.

22 We continue to do the analysis for again all our
23 repertoire of PFCs, PBDEs, PCBs, pesticides for the
24 California Teachers Study. This is the biggest study we
25 have. And also, we'll be doing the PBDEs, PCBs and

1 pesticides for the Expanded BEST.

2 --o0o--

3 DR. PETREAS: So a little more detail. So the
4 Teachers Study, this is the biggest study we have. It's a
5 collaboration we have the Cancer Prevention Institute of
6 California, the University of California, Irvine,
7 University of Southern California, and City of Hope. It's
8 a long prospective study, cohort study going on for many
9 years.

10 We have been funded on a sub-study to study
11 chemicals as risk factors for breast cancer. And for that
12 study, we have -- supposed to collect blood samples from
13 about 1,200 cases and 1,200 controls from the entire
14 State. So Peggy Reynolds is the PI for this study. And
15 we've been funded by the California Breast Cancer Research
16 Program. So again, in the idea of sustaining the Program,
17 we'll be adding all these data.

18 The recruitment is still going on, and samples
19 keep coming to the lab. The good news is incidence is
20 dropping, so it's hard to recruit these women. So we're
21 planning to get at least one year of extension to complete
22 the study. So the plan is to collect the blood and
23 analyze for PCBs, PBDEs, perfluorinated chemicals, and
24 also thyroid hormones and lipids.

25 --o0o--

1 DR. PETREAS: And just to give you progress, as
2 of this month, highlighted are the numbers that have
3 changed since last time. So if I can show here -- no, I
4 guess I can't show. Oh, yeah, I can.

5 So the different chemical classes are in these
6 columns, PFCs, PBDEs, and then the pesticides and PCBs.
7 And each sample goes through these several steps until the
8 data are released. So we made a lot of progress by
9 distributing and separating the samples. Over 2,000 of
10 them have been aliquoted, and the extraction changes
11 between the different, I guess, columns.

12 But there's a lot of progress because we have
13 over 1,000 samples now. The extraction is completed and
14 900 of those have been analyzed, but there's a lot of work
15 to be done too -- for data review before we can release
16 the data. But we have a deadline in the fall. So you're
17 going to see a lot of more progress in November. So our
18 California Teachers Study is the largest study for the
19 Program and we're going to show a lot of progress there.

20 --o0o--

21 DR. PETREAS: The Three Generations Study is also
22 a big study. It's another collaboration, and we're funded
23 by -- for our part of the study by the California Breast
24 Cancer Research Program again.

25 Basically, the population comes from over 20,000

1 pregnancies that took place at Kaiser Oakland in the
2 sixties. So these are what we call the mothers that were
3 pregnant then. And then we have the daughters who are
4 adults and the granddaughters who are now adolescents.

5 Our part of this study looks at mothers and adult
6 daughters. And so the mothers, again, were samples
7 archived from the sixties, but the now adult daughters
8 were recruited and specimens taken in 2011-12. So this
9 gives us an opportunity to compare generations among other
10 specific aims for this study.

11 And once everything is completed, and the results
12 are returned to the daughters, we have to wait for that,
13 then we can provide the information and data and publish
14 and so forth. And the data will be posted in our website.

15 What I can show you though is what we call
16 detection frequency, because this allows us to see how
17 certain chemicals change between generations. And I'm not
18 showing concentrations here. It's just the percent of
19 samples that showed the chemical to be present. So in the
20 blue hatched column on the left is the mothers, and the
21 daughters are in the red. And, as you can see, these are
22 pesticides. And most all -- 100 percent of the maternal
23 samples show the pesticides to be present.

24 However, certain chemicals, like the β -BHC and
25 the ortho,p'-DDT are present now at much, much fewer

1 contemporary samples. Again, we're not comparing
2 concentration levels, just the presence of the chemical.

3 --o0o--

4 DR. PETREAS: So this is for pesticides. And a
5 very similar picture for PCBs again. Almost all mothers
6 had the PCBs present, but fewer of the daughters do have
7 them. And mostly the lower molecular weights here are not
8 so persistent. The more persistent still are present.
9 Again, I'm not showing concentrations, but I'm showing
10 these two slides to come to the third one --

11 --o0o--

12 DR. PETREAS: -- which is a different class of
13 chemicals, which is the perfluorinated. And here, you see
14 the reverse. We have many more chemicals present in the
15 daughters that were not present in the mothers.

16 And so this is particularly true for the longer
17 chain -- the octa, nona, deca, and undeca and so forth.
18 These are the longer chain PFCs that are apparently more
19 in use now that appear. Whereas, in the maternal samples
20 they weren't even present.

21 The measure -- the like PFOA, PFOS, and the hexa
22 sulfonate are present again in all samples, again not
23 comparing concentrations. The only change is one chemical
24 that now it's the methoxy-PFOA, which is present in the
25 daughters, and wasn't present in the mothers. And these

1 two last chemicals, apparently both were used for treating
2 paper and fabrics to make them repellent. And probably
3 there's a change in the market going from one to the
4 other, and that's what we see here.

5 So I guess this gives us the opportunity to see
6 trends in terms of -- and projecting how chemicals would
7 change between generations. So it will be interesting to
8 see the actual concentrations in other, you know,
9 questionnaire data and see what predicts this information
10 here.

11 --o0o--

12 DR. PETREAS: Okay. Small update about our
13 instrumentation. This is -- again, we -- the CDC agreed
14 to give us this -- to allow us to use last year's budget
15 to buy this instrument with the understanding that if we
16 identify chemicals via this non-targeted screening, these
17 chemicals may be important candidates for biomonitoring
18 and could be added as designated chemicals.

19 So since last time, we bought the instrument. It
20 was actually installed last month, and staff are getting
21 trained this week. So we are starting. We're very
22 excited. And, of course, we communicate with our
23 cross-lab program TOF group, between toxicologists and
24 chemists to coordinate the work. And we may have more to
25 tell you next time.

1 I'm showing -- oh, okay. And the aggregate results will
2 be shared with the website.

3 --o0o--

4 DR. PETREAS: This slide, the red bars are the
5 data just presented. And I'm comparing with another study
6 from the same population, exactly the same clinic, that
7 had been done in 2003-5. In that case, we have 82 women
8 that only gave breast milk. So here I'm comparing the
9 breast milk from 2003 to 2010. And the 2003 study was
10 already published.

11 This comparison was presented at the BFR meeting
12 in Indianapolis last month. And indeed, we see varied --
13 what we expected, of course, but it's nice to see it in
14 breast milk what we saw in blood, that indeed PBDEs are
15 dropping, which is great. I mean, it shows the power of
16 biomonitoring to see changes, and also that regulatory
17 interventions do make a difference.

18 So we'll continue to work on this study, and
19 we'll present more to you.

20 --o0o--

21 DR. PETREAS: We have been funded, along with
22 UCSF, to study again women from the San Francisco General
23 Hospital. And we're going to look at PBDEs and hydroxy
24 metabolites in serum of pregnant women. The recruitment
25 is underway and the samples are arriving in our lab. So

1 firefighter study, we had this companion study to take the
2 vacuum cleaner dust from 20 of the fire stations in Orange
3 County.

4 --o0o--

5 DR. PETREAS: So where we are with the analysis,
6 we have completed the analysis of dust for all the
7 brominated flame retardants, not just PBDEs, Firemaster,
8 and also PAHs. And we are in the process of analyzing the
9 same samples for the phosphorus flame retardants,
10 including the TDCPP and TCEP, both on Prop 65. And TDCPP
11 is one of our consumer products -- chemicals in our
12 Department.

13 We'll be analyzing the same dust for chlorinated
14 and brominated dioxins and furans, perfluorinated
15 chemicals and their precursors. And later on -- we're not
16 ready yet -- we'll do the phenolics, so BPA, triclosan, et
17 cetera. And, of course, dust will be a great sample
18 matrix to look for these so-called unknown chemicals in
19 the future.

20 So we're getting ready to do all these in-process
21 methods, because we are getting samples from fire stations
22 across the U.S. dust samples to do more of this work. So
23 that will be interesting to see how they compare.

24 --o0o--

25 DR. PETREAS: Okay. Now, a little bit more about

1 the California Childhood Leukemia Study. Again, it was
2 with UC Berkeley. This is a case control study looking at
3 the environmental and genetic risk factors for leukemia.
4 So, as I said, we completed the analysis of PBDEs and PCBs
5 and pesticides in the vacuum cleaner dust from 204 homes.
6 And these were sampled twice over a period of five years.

7 We have analyzed the children's whole blood and
8 we have analyzed the mother's serum. This was in response
9 to a Request for Information we had issued as a Program in
10 2012. It is one of the studies we selected. So we
11 completed this work.

12 --o0o--

13 DR. PETREAS: And the interesting thing we find
14 now is that we can see major PBDEs in maternal serum are
15 positively associated with household dust of the same PBDE
16 levels. And this is after adjusting for blood lipid
17 levels, country of origin, household income, which are
18 some of the variables we know -- covariates that affect
19 this association. So this is real encouraging. We have a
20 paper in preparation there.

21 --o0o--

22 DR. PETREAS: Okay. Just to conclude. The two
23 papers we mentioned last time have been finally published.
24 The first one -- both are methodological. The first one
25 is to -- allows us to use different blood drawing tubes,

1 which makes field sampling much easier. And we're using
2 this in the Teachers Study, and we're using this in the
3 Expanded BEST. The second paper, again, it's a better
4 method to measure the hydroxy BDEs in serum. And we have
5 two papers that were submitted, and they are in final
6 review. This is the brominated flame retardants in
7 dust -- in house dust and fire station dust.

8 So we got the reviewers' comments, responded. It
9 should be coming soon. And we just submitted our first
10 firefighters POPs paper. This is the one where we found
11 very, very high levels of PBDEs in firefighter's blood.

12 --o0o--

13 DR. PETREAS: So with that, I think I'm done,
14 unless you have any questions.

15 CHAIRPERSON LUDERER: Thank you very much, Dr.
16 Petreas in telling us about all the amazing progress
17 you've made on all those studies and sharing some of those
18 very interesting results with us.

19 Do we have some clarifying questions?

20 Dr. McKone.

21 PANEL MEMBER MCKONE: Yeah. Thank you. That was
22 a really remarkable amount of information to digest. I
23 was interested in the mother, daughter, granddaughter
24 study, and the granddaughters aren't in yet, right, but
25 they're coming, right?

1 MS. HOOVER: Tom, can you talk into the mic,
2 please?

3 PANEL MEMBER MCKONE: It's on.

4 MS. HOOVER: Talk into the mic.

5 PANEL MEMBER MCKONE: Right into it. Okay.

6 (Laughter.)

7 PANEL MEMBER MCKONE: All right. So on the -- so
8 to repeat the question, so I have a couple of questions.
9 One is the granddaughters are still in process or are they
10 identified in --

11 DR. PETREAS: The Three Generations Study has
12 mothers, daughters, and granddaughters. Our part of the
13 study does not have the granddaughters. Because this is a
14 breast cancer study, so it's really the adult daughters
15 the in-between generation that is at the stage to -- may
16 develop breast cancer.

17 The daughters are recruited -- the granddaughters
18 are recruited for maybe other endpoints, but there's no
19 funding for us yet to do anything on the young
20 daughters -- the young granddaughters.

21 PANEL MEMBER MCKONE: And it seems like it's
22 focused primarily on persistent organic pollutants.
23 You're not looking at metals or inorganic --

24 DR. PETREAS: We are not, no.

25 PANEL MEMBER MCKONE: Is there a possibility? I

1 mean, I don't know how --

2 DR. PETREAS: This is blood.

3 PANEL MEMBER MCKONE: Do you consume the samples
4 that much or are they --

5 DR. PETREAS: Yeah, this is blood.

6 PANEL MEMBER MCKONE: I mean, they have this
7 wonderful long-term sample. I assume you're not using all
8 of the samples.

9 DR. PETREAS: It's very hard to convince them to
10 give us any, and we get very limited volume, because it's
11 so precious. It's really amazing. This cohort is
12 amazing. It's, you know, from the sixties and now -- and
13 it's very interesting how the daughters and granddaughters
14 are willing to participate. There's a lot of response to
15 going and, you know, finding this.

16 PANEL MEMBER MCKONE: Well, it's remarkable
17 insight just the initial results on how the world of
18 persistent pollutants -- there are persistent pollutants,
19 but they change by generation, right?

20 DR. PETREAS: Yes. So this would allow us to see
21 that.

22 PANEL MEMBER MCKONE: Okay.

23 CHAIRPERSON LUDERER: Dr. Cranor.

24 PANEL MEMBER CRANOR: Carl Cranor. The same
25 general topic. Can you tell us more about the hypothesis?

1 Is it that the persistent substances have been transmitted
2 or are they new exposures or both?

3 DR. PETREAS: Okay. There are many study
4 questions in the study. We're only -- in the data I
5 showed you, they only deal with very limited subquestions,
6 some of the predictors of these chemical exposures. Some
7 raise effects. We had for the daughters, the adult
8 daughters, 50 percent are African-American. So this was
9 enhanced -- stratified sampling in a way to enhance and
10 get more African-Americans in the pool.

11 So there's some interesting questions in terms of
12 just exposures by race, plus also in utero exposure. So
13 we know what the daughters were exposed when they were in
14 utero through their maternal serum. So some questions
15 we'll follow up on that. It's still the beginning. And
16 again, I can only talk to you about the slice of this
17 bigger study.

18 PANEL MEMBER CRANOR: Right. I know Barbara
19 Cohn --

20 DR. PETREAS: Yeah, she's the PI.

21 PANEL MEMBER CRANOR: -- did the earlier work on
22 breast cancer and daughters --

23 DR. PETREAS: It used to be with the mothers.
24 Now, we're going to the daughters, yeah. And there are
25 other endpoints, not just breast cancer.

1 PANEL MEMBER CRANOR: Sure.

2 So you're not separating those two questions or
3 it's probably not your task to --

4 DR. PETREAS: Yeah, it's not our task, yeah.

5 PANEL MEMBER CRANOR: Thank you.

6 CHAIRPERSON LUDERER: Dr. Quintana.

7 PANEL MEMBER QUINTANA: I just had a question
8 about the same study. And I'm just curious if you looked
9 at best -- breast feeding practices of the mothers in
10 terms of did it modulate the daughter's exposure. And I
11 just want to say that question in the context that we know
12 that breast feeding is always best for baby. But in terms
13 of factors that may affect daughter's body burden, I was
14 wondering if that was looked at as a factor?

15 DR. PETREAS: I'm pretty sure the question was
16 asked to the daughters for the granddaughters. The
17 original cohort, the child health and development studies,
18 I don't believe they had this question. They had some --
19 maybe you know more about that. It was certain
20 demographics, smoking and some activities of the sixties,
21 I guess.

22 (Laughter.)

23 PANEL MEMBER KAVANAUGH-LYNCH: They have, I
24 think, very extensive data on basically many factors in
25 prenataally and early postnataally. So I believe they have

1 breast feeding data on the mothers.

2 DR. PETREAS: If you go to our website, it links
3 to their study and the whole information will be there.
4 So I can't answer now.

5 PANEL MEMBER KAVANAUGH-LYNCH: I want to add
6 another aspect of this study that, I think, adds to its
7 value. So one is that looking at the distribution amongst
8 racial ethnic disparities amongst a fairly uniform
9 population. These are all Kaiser patients from Northern
10 California. So that's of interest, especially in the
11 breast cancer disparities question is -- you know, is it a
12 disparity partly due to differences in exposures, or in
13 prenatal exposure, as Barbara Cohn's earlier work together
14 with Myrto showed the prenatal exposure to --

15 DR. PETREAS: DDT.

16 PANEL MEMBER KAVANAUGH-LYNCH: Yeah -- DDT was --
17 resulted in a five-fold increase in breast cancer risk.
18 And there just isn't a five-fold increase in breast cancer
19 risk from any other factor. I mean, that's a really
20 remarkable finding.

21 But the other interesting aspect of this study
22 that we as a funder told them they needed to start to
23 develop and now they have taken further steps and
24 developed much further is actually making this a community
25 based participatory research project. So they now have

1 a -- the mothers and the daughters and the sons involved
2 in an advisory group that's helping to formulate questions
3 that they want to see asked, and making them a much more
4 vibrant part of the study.

5 And I think that will lead to some very
6 interesting questions that also lead to hopefully
7 continuation of this very valuable resource.

8 CHAIRPERSON LUDERER: Dr. Quint.

9 PANEL MEMBER QUINT: Yeah, really great results,
10 very interesting. I had a question about the PFCs. You
11 mentioned -- could you explain again the shift? I mean,
12 there's -- you know, what's shifted in the exposures here?

13 DR. PETREAS: Well, what we think it's market
14 changes. So there are new chemicals that came into being
15 that were not present as much when the mother's blood was
16 taken.

17 PANEL MEMBER QUINT: Right.

18 DR. PETREAS: So these are the longer chain, the
19 eight, nine, ten, 11 carbon chains of perfluorinated
20 compounds that are now more in use. That's what this
21 graph tells us.

22 And the last two bars, which they reverse,
23 because this is the first time -- the very last one is --
24 was higher in the -- was present in the mothers, but not
25 so much in the daughters. I think it's a replacement of

1 the -- these two chemicals were used both for treating
2 fabrics and paper to make it water repellent or lipid
3 repellent. And there's a shift in the market we think,
4 and there's more of that than it used to be when the
5 mother's blood was taken.

6 PANEL MEMBER QUINT: So -- right.

7 DR. PETREAS: Now, this is preliminary. We have
8 to look at the questionnaires and other parameters to
9 compare.

10 PANEL MEMBER QUINT: Exactly. Right.
11 Interesting.

12 DR. PETREAS: But I think this is powerful to
13 show you different -- how chemicals emerge from --

14 PANEL MEMBER QUINT: Absolutely, yeah, emerging.

15 CHAIRPERSON LUDERER: Before we continue with our
16 discussion, I just wanted to check if there were any
17 public comments.

18 Okay. Great. Thank you very much, Dr. Petreas.

19 So it looks like we have two public comments. So
20 the first person will be Veena Singla from NRDC. Did I
21 pronounce that correctly?

22 DR. SINGLA: Yes. Thank you. Veena Singla with
23 the Natural Resources Defense Council. I wanted to echo
24 the comments on how impressive the presentations and
25 updates were. My comment is related to the methods

1 development and analysis for organophosphate flame
2 retardants.

3 I wanted to note that both halogenated and
4 non-halogenated organophosphate flame retardants have been
5 used as replacements for PBDEs. So the -- hopefully, the
6 methods development could focus on both of those
7 categories and the -- any of the analysis of the abiotic
8 or biological matrices could look at both the halogenated
9 and non-halogenated organophosphates as emerging flame
10 retardants.

11 CHAIRPERSON LUDERER: Thank you very much for
12 that comment. And we also have a comment from Nancy
13 Buermeyer from the Breast Cancer Fund.

14 MS. BUERMEYER: Thank you very much. Nancy
15 Buermeyer with the Breast Cancer Fund.

16 Ditto to the great work in both the labs.
17 Congratulations. And it's been great to watch this
18 program grow over the last five years, and see just how
19 amazing the methods development and the output has grown.

20 I actually had a question for Dr. Petreas. You
21 mentioned getting fire -- I see that you analyzed dust
22 from the Orange County firefighters, and you had a tag in
23 there saying you were getting samples from around the
24 country. And I'm curious to know from where and how do I
25 get to play?

1 (Laughter.)

2 DR. PETREAS: Well, this is -- it hasn't happened
3 yet, but there's interest in funding to sample -- to
4 repeat what we did in the Orange County firehouses from
5 different fire authorities around the country. And our
6 contact is some firefighter's organization who approached
7 us. And hopefully, this will materialize, and we can tell
8 you more next time, but we don't have the samples yet.

9 And, in fact, in a way, we'd prefer to delay a
10 little bit, so we have more of these methods, because we
11 are doing the Firemaster and the organophosphates and plus
12 others. So the more we have, the better, including the
13 dioxins, the brominated dioxins.

14 CHAIRPERSON LUDERER: Okay. Thank you very much.

15 And we have time for some more Panel discussion
16 about either of those two presentations.

17 Comments, more questions from Panel members?

18 Dr. Quintana.

19 PANEL MEMBER QUINTANA: Hi. This question is
20 about the FOX results that were presented. And
21 specifically, the environmental phenols slide, it presents
22 the results in comparison with NHANES data from 2009 and
23 2010. And when I was listening to you I'm just wondering,
24 have you explored comparing your results to NHANES data
25 that has been selected to be subjects of similar age,

1 similar region, because I know region is not, I believe,
2 in the NHANES data set, unless you request it
3 specifically, and also compared to smoking status of
4 participants or making sure they're non-smoking or have
5 low urinary cotinine levels?

6 And the reason I bring this up is because I'm
7 from California and I have this bias. Californians are
8 healthier and different, and I don't want to miss a signal
9 from firefighters, because we might be comparing to people
10 with -- that aren't as good a reference group. And I'm
11 just wondering if you've explored getting a subset of
12 NHANES data that is matched to your data set?

13 DR. SHE: The data statistical analysis and also
14 the other factors I think I will try to see if Laura is
15 here. Do you want to answer the question?

16 DR. WU: Hi. I'm Nerissa Wu. We have looked
17 at -- we would like to look at regional specific NHANES
18 data, but it's very restricted. It used to be available
19 and you used to be able to request it through a process.
20 The process through which you can request is very onerous.
21 And we've actually talked to NHANES statisticians. And
22 because of the way they -- it's how they analyze their own
23 data and how they weight their samples. They don't really
24 feel -- they don't want to give out that data, and so we
25 haven't gone through the process, because we don't think

1 it would be a successful effort.

2 PANEL MEMBER QUINTANA: But that's for region,
3 right? You could also --

4 DR. WU: It's for both region and for State.

5 PANEL MEMBER QUINTANA: But have you looked at
6 say urinary cotinine, smoking status, so you'd have the
7 comparable levels in regards to some other exposures?

8 DR. SHE: I know one thing, then I think Laura
9 will be able to get more information to that. We look for
10 the smoking. Questionnaire data don't have secondhand
11 smoking. And I don't think we find a significant
12 association with smoking. The age part we can say that we
13 found a middle-aged person have high levels. And then we
14 look for all of the questions within our database. I
15 think Laura can add more.

16 And then also, we not only compare with the 2009
17 to 2010 data from NHANES, according to Berna, recently CDC
18 also published 2011 to 2012. So our FOX data is between
19 2010 and 2011. So just before I come here, I looked at
20 the CDC's added trend, so from 2009 to 2011 identified
21 added trend change.

22 Regarding other questions, I look to Laura.

23 PANEL MEMBER QUINTANA: Actually, just to
24 clarify, I was talking about the NHANES comparison group
25 looking at their cotinine and their smoking status and

1 getting a subset of that group.

2 DR. FENSTER: We haven't done that. We had
3 really very low tobacco use in the firefighters. We did
4 control for that in the model-building process, but we
5 didn't see an association, but it could have been due to
6 the small numbers.

7 PANEL MEMBER QUINTANA: I just -- I just meant in
8 the comparison group in NHANES, that includes everyone in
9 the United States with perhaps higher secondhand smoke
10 from Kentucky than we get in California typically. So I
11 was just talking about the reference group making sure
12 that was as appropriate as could be.

13 DR. FENSTER: Right. We did try to make it as
14 appropriate as we could. As Nerissa intimated, we've even
15 had discussions with them about trying to get California
16 specific data, but they -- it's very difficult at this
17 point in time. They have done that in the past, but
18 increasingly it seems like their biostatisticians and
19 epidemiologists want to use that data for publications.
20 So, yeah.

21 CHAIRPERSON LUDERER: Dr. Bradman.

22 PANEL MEMBER BRADMAN: I just want to second
23 that. I've had similar conversations with CDC, and
24 they're extremely restrictive. I know there was that one
25 paper by Dr. Zota at UCSF where they did breakout some

1 information, but I've had follow-up discussions with them
2 and the answer always came down as no. And I think it's a
3 little frustrating actually, but...

4 CHAIRPERSON LUDERER: Dr. Quint.

5 PANEL MEMBER QUINT: Let me put glasses on to see
6 if it's on. I think it's on.

7 This is a totally different topic. I was
8 wondering, I mean, we've had two occasions now in the
9 Biomonitoring Program where we've measured mercury in
10 these cosmetic creams. And I'm wondering about -- and
11 this may be something you have -- I mean, it's not your
12 purview, but I'm just wondering policy-wise what's
13 happening with that issue?

14 Here, we have a 20-month old who's, you know,
15 affected by this. And I know the Program -- I'm just
16 wondering if there's any avenue to bring this to a
17 different -- make -- call attention to this in a different
18 way? Claudia may know something about this. This is more
19 her area.

20 DEPUTY ATTORNEY GENERAL POLSKY: Hi. I'm Claudia
21 Polsky of California Department of Justice. And I'm an
22 enforcement lawyer who specializes in toxics in consumer
23 products. I'm jumping a little ahead of the agenda here
24 by speaking to this question.

25 But the short answer is this is a tricky area,

1 because all of the products that are being used and are
2 resulting in these, you know, meteoric levels, very
3 dangerous levels of exposure are illegal. They're illegal
4 under federal law. They're illegal under State law. This
5 is -- it's not even fair to describe it as a gray market.
6 It's a totally black market in these products.

7 Some come in those very make-shift almost hand
8 lettered jars you see that are coming in onesies and
9 twosies in people's carry-on luggage from all over the
10 world. It's not just coming in from Mexico. It's coming
11 in from everywhere.

12 We are not the only ones grappling with this
13 problem. I've read press releases from the Philippines
14 about their efforts to get a handle on skin whitening
15 creams used by all manner of different ethnic communities
16 with pigmented skin. And I am in ongoing conversation and
17 collaboration with DPH in our State to try to figure out
18 how we go after these very small-time onesie and twosie
19 distributors. Some are literally operating out of a
20 pickup truck at an ethnic flea market trying to offload 12
21 samples at a time.

22 There are some cosmetics companies that look more
23 legit and mainstream and that they have professional
24 printed product packaging. They're clearly producing in
25 larger volume that are also creating things with, you

1 know, 50,000 parts per million when the legal limit, as
2 you saw, is less than one part per million.

3 So, I mean, these are grossly illegal products.
4 And the difficulty is that the supply chain inevitably
5 ends overseas and the U.S. infrastructure for distribution
6 is tiny. It's informal. It's shady. You go to a listed
7 address, it's now a vacant space. You go to the next
8 address, it's a vacant space. The receipts have no
9 addresses. It's very complicated, so we're trying to
10 figure out how to get information out to the relevant
11 ethnic communities, so people can protect themselves as
12 purchasers. It's not the most satisfying way to go after
13 it, but it's very challenging. We are working on it.
14 It's an active investigation.

15 PANEL MEMBER QUINT: Thanks.

16 CHAIRPERSON LUDERER: Other questions from Panel
17 members?

18 I actually did have a question. I was really
19 happy to see that both of the presentations included
20 information about the progress in unknown chemical
21 screening. And I had a question for Dr. She. You
22 mentioned that the -- you have the Toxic Chemical Finder
23 database has 600 chemicals now. And I was wondering is
24 that parent compounds or metabolites or both?

25 DR. SHE: I think most of them are the parent

1 compounds that the database developed, and the recommended
2 chemicals from Canada EPA and Dr. Derek Muir. So I think
3 most parent compounds.

4 CHAIRPERSON LUDERER: So if the parent compound
5 is in the database, then are metabolites, known
6 metabolites, also in the database?

7 DR. SHE: I didn't get a chance really to break
8 down if any major metabolites maybe there. For example,
9 TDCPP as a flame retardant, and we look if TDCPP is there.
10 I didn't do a breakdown. That's a good question, if we
11 need to focus like list for urine samples or to we can put
12 it like a metabolite, if it is not there. Then maybe a
13 plan we should think about it.

14 CHAIRPERSON LUDERER: Thank you.

15 Dr. Quintana.

16 PANEL MEMBER QUINTANA: I had a question about
17 the unknowns analysis, and that had to do with discussions
18 about the ethical implication for research on human
19 subjects when you get into unknown analysis or
20 non-targeted analysis. And this comes from my experience
21 with developing methods in non-targeted analysis of house
22 dust for the National Children's Study, where we developed
23 methods looking at pooled dust samples. And our database
24 came up with every drug of abuse known to man in our
25 pooled sample. And it just tells here's this, here's

1 this, here's this. We didn't ask it to.

2 You know, so I'm just curious if you had any
3 discussions about any analysis where you might explicitly
4 a priori exclude some compounds for this reason to do with
5 analyzing the individual results, especially with
6 sensitive populations?

7 DR. PETREAS: I can only -- Myrto Petreas, DTSC.
8 I can only tell you that with the Teachers Study, where we
9 intend to look at unknowns, the consent form is open to
10 any chemical. So we're liking that part. So we're not
11 going to look at drugs of abuse, but we're going to look
12 at other chemicals.

13 With the dust, that's a good question. I'm not
14 sure how the -- again, the informed consent described any
15 regulated chemicals or illegal chemicals. But for the
16 future -- I think it's something you're raising for the
17 future, we have to be explicit on that.

18 PANEL MEMBER QUINTANA: No, I think it's
19 excellent work. I just think these discussions should
20 take place ahead of time and before, and how we're going
21 to deal with that issue.

22 DR. SHE: I think we should think about the rules
23 what chemical we can look, what we can't look. But on the
24 other hand, technically, we called it unknown screening,
25 like I mentioned it's targeted unknown. You cannot -- for

1 example, machine cannot automatically tell you what's
2 there. It's really if we have a rule for this regulated
3 chemical, the drugs, no one can see it, because when you
4 do -- it's quite different with this isotope or the
5 machine we use to trap, they're screening everything. But
6 when you -- without a chemist to really look at it
7 carefully, you do not see nothing. It's even worse. You
8 see just the baseline, because all of the other chemical
9 clouded the real thing you're looking for.

10 So at the beginning that's not a worry, but I
11 hear what you said, the Program may need to have some
12 deeper thinking what we're looking, because eventually if
13 someone would like to locate it, it's there, but it's a
14 big effort to find it. It's not complete unknown. It's
15 targeted unknown screening, I think.

16 CHAIRPERSON LUDERER: Dr. Bradman.

17 PANEL MEMBER BRADMAN: This is Asa Bradman.

18 I just want to echo that comment. I think
19 actually that's a really interesting point and just a
20 little personal experience with that. In our study in
21 CHAMACOS, we actually explicitly in our consent forms
22 excluded any regulated chemicals like that. And that was,
23 of course, a way also to ensure people would participate.

24 We've had some issues. We had somebody who --
25 there was a child custody case, and we were approached

1 about potentially releasing our samples or being forced
2 legally to release our samples. And we were -- because of
3 the consent procedures, we were protected by our IRB and
4 the University counsel.

5 But I think that's just a good point for all of
6 us to think about, especially when we're going into the
7 world where we're not -- we're not specifically
8 delineating target analytes.

9 CHAIRPERSON LUDERER: Dr. Quint.

10 PANEL MEMBER QUINT: I just -- this is Julia
11 Quint. I want to echo that in terms of occupational
12 studies, because it's always been a concern of a lot of
13 workers of having biomonitoring done, because of this
14 issue, and how it might affect employment, the fear of,
15 you know, people measuring for drugs, et cetera. I think
16 I've brought it up before here. So again, glad you
17 brought it up, because I think it's really important.

18 CHAIRPERSON LUDERER: Sara Hoover.

19 MS. HOOVER: Yes. Sara Hoover of OEHHA.

20 I just wanted to say thank you for these great
21 comments. And also to repeat the plug that Myrto gave of
22 our cross branch group for unknowns. So we're going to be
23 looking at things like building the database, making sure
24 metabolites are in there, also what samples can we look at
25 unknowns in. It's been previously pointed out these

1 aren't designated chemicals, so we're not just going to go
2 out and start applying this method.

3 So we are, you know, doing a planning process
4 within the Program, but all of these comments will really
5 help with that. So thank you.

6 CHAIRPERSON LUDERER: Any further Panel
7 questions, discussion, comments?

8 Okay. Well, it looks like we're going to be
9 finishing a little bit early then. Do we still want to
10 plan an hour for lunch or what time?

11 1:00. Okay, returning at 1:00 then. So,
12 everyone, please be back --

13 MS. HOOVER: Stop. Refer to your Chair's agenda,
14 Ulrike. We have a few announcements before we break.

15 CHAIRPERSON LUDERER: Oh, yes, we do. You're
16 right. I apologize. Yes. So I just want to -- so we
17 just said that we're going to be returning at 1:00. I
18 also want to recommend that the Panel and meeting
19 attendees choose from dining options at the Oakland 12th
20 Street City Center Shopping Plaza, which is near the BART
21 Station. There's a lot of quick options there.

22 And I wanted to introduce Fran Kammerer, the
23 Staff Counsel for OEHHA, who will provide a brief reminder
24 to Panel members about the Bagley-Keene Open Meeting Act
25 before we break for lunch.

1 STAFF COUNSEL KAMMERER: Thank you, Dr. Luderer.

2 CHAIRPERSON LUDERER: And I'm sorry to almost
3 have skipped you.

4 STAFF COUNSEL KAMMERER: That's all right. All
5 this exciting science and here comes the lawyer to rain on
6 your parade, but I'm not the only lawyer today.

7 (Laughter.)

8 STAFF COUNSEL KAMMERER: Claudia gets to talk
9 about the fun stuff. I get to rain on your parade. Okay.
10 So I want to remind you of more than one thing today.
11 Normally, I give you the reminder to refrain from
12 discussing subjects that are from the Committee -- that
13 will be discussed at the Committee at lunch.

14 And I want to expand that a little bit today to
15 remind you that this also applies for when you meet at
16 other events. So because you're all in the area of
17 science, you're bound to meet in conferences and trainings
18 and so forth. So just remember to try to refrain from
19 discussing matters that will be coming before the
20 Committee at these events.

21 The second subject is ex parte contact.
22 Sometimes you will be contacted by interested parties who
23 want to talk about something that's going to come up
24 before the Committee, or share a study with you or
25 something like, you should refrain from doing that. But

1 if you do do it, especially if you do it during the notice
2 period before the meeting, you need to disclose that here
3 and say who made the contact and what the subject was.

4 Also, if these meetings do occur, what do you do?
5 Well, you can ask them to bring the subject to the
6 meetings. Contact our staff, if they want to share any
7 studies, or anything like that, they can bring it to the
8 meeting.

9 Any questions on that?

10 Okay. Thank you.

11 CHAIRPERSON LUDERER: Lunch. Okay. Thank you.

12 So remember we'll reconvene at 1:00 p.m.

13 Thank you.

14 (Off record: 11:49 AM)

15 (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: 1:01 PM)

3 (Thereupon an overhead presentation was
4 presented as follows.)5 CHAIRPERSON LUDERER: I'm going to reconvene the
6 meeting while we're waiting for everyone to come back from
7 lunch. So I'm very excited about this afternoon's
8 session, which we've already heard quite a bit about,
9 little teasers about it this morning.10 So this afternoon's session is going to consist
11 of three presentations and discussion about chemical
12 exposures in consumer products. The first presentation is
13 going to focus on California laws governing chemicals in
14 consumer products. The second one will highlight a
15 particular case of nail products. And the third will
16 discuss the potential for Biomonitoring California to
17 inform the Safer Consumer Products Program.18 So probably for this audience, I don't need to
19 say that you've probably been wondering why a session
20 focused on chemical exposures from consumer products? But
21 I think it's -- there are really a number of reasons why
22 this is a very timely topic. I just wanted to highlight a
23 few.24 So we know that the indoor environment plays an
25 important role in our exposures to environmental

1 chemicals. And the consumer products that we use in our
2 homes, our offices, our cars are major sources of
3 chemicals in that indoor environment.

4 In particular, personal care products are things
5 that we use on a daily basis and that are applied directly
6 to the body, so obviously increasing the potential for
7 repeated and continuous exposure to chemicals found in
8 those products. And I also wanted to kind of highlight
9 that tracking exposures to chemicals in consumer products
10 has been a particular focus for the Scientific Guidance
11 Panel I think really since its inception.

12 And one of the things that the Scientific
13 Guidance Panel has been very interested in is emphasizing
14 emerging chemicals of concern. And so, yes, the slides
15 are up.

16 So the two slides highlight chemicals that are
17 found in consumer products. The first one focuses on
18 personal care products that are designated and priority
19 chemicals for Biomonitoring California. And also the
20 asterisks indicate those chemicals that were recommended
21 by the Scientific Guidance Panel as designated, and then
22 as priority chemicals. So the highlighted ones now, the
23 bolded, are those that were recommended by the SGP as
24 priority chemicals.

25 So I wanted to just say a little something about

1 some of these chemicals. So the cyclosiloxanes that was I
2 think one of the earlier class of chemicals that this SGP
3 recommended. These are used in many personal care
4 products, household cleaning products, dry-cleaning
5 solutions. Some of these are persistent in the
6 environment. And with these, there's concern for
7 reproductive and endocrine effects.

8 Skipping parabens for a moment. The triclosan
9 and triclocarban are used as antimicrobials and are in
10 many handsoaps, tooth pastes, and other household and
11 personal care products. And benzophenone-3, which we
12 heard about this morning a bit, is, among other things, a
13 sunscreen component.

14 The parabens are also used in personal care
15 products. They're also antimicrobial preservatives. And
16 for many of these chemicals, as I mentioned already for
17 the cyclosiloxanes, there's evidence for reproductive, as
18 well as endocrine effects potentially for some of these
19 compounds.

20 The synthetic polycyclic musks and related
21 fragrance compounds are in personal care products -- many
22 personal care products, as well as other household
23 products, things like detergents. And again, there's
24 evidence for those for developmental toxicity and
25 endocrine activity.

1 Okay. So -- oh, sorry, next slide. I'm like
2 pushing my slide here.

3 (Laughter.)

4 CHAIRPERSON LUDERER: Your slides are not --
5 okay.

6 (Laughter.)

7 CHAIRPERSON LUDERER: The brominated and
8 chlorinated organic compounds, as well as some of the
9 non-halogenated aromatic phosphates are used as flame
10 retardants. And these have been, for a long time, also of
11 particular concern to the Scientific Guidance Panel as we
12 actually saw data this morning that -- as some of the
13 PBDEs are being phased out.

14 And the Scientific Guidance Panel initially was
15 particularly concerned that these might be even a greater
16 problem in California than other parts of the United
17 States, because of the California Technical Bulletin 117.
18 And this -- that things like upholstery foam had to be
19 able to withstand an open flame for 12 minutes. And we
20 know that last November, that was revised. And so now,
21 there's a smoldering -- withstanding a lit cigarette
22 without smoldering for 45 minutes.

23 And so it will actually be very -- this is going
24 to be I think an interesting example of where
25 biomonitoring can be used to see the potential effects on

1 chemicals, such as these other -- these flame retardants
2 in Californians, and how that might change or not change
3 in response to changes in the law.

4 The p,p'-bisphenols and their diglycidyl ethers
5 are used to make resins that are used to line food and
6 beverage containers. They're in thermal paper, other
7 paper products. They're in other plastics. And many of
8 these have been promoted as replacements for bisphenol A.
9 And so again, here's another opportunity to use
10 biomonitoring to track these emerging chemicals that may
11 potentially be of concern, and for which there's far, far
12 less toxicity information than there is for bisphenol A.

13 So overall, I think there's a general public
14 perception that products that are available in the
15 marketplace that you can buy at your grocery store or
16 drugstore have been extensively reviewed and approved and
17 must therefore be safe, but we know that this is not
18 necessarily true.

19 And so biomonitoring chemicals that may be of
20 concern in consumer products, the Program can really
21 provide important information for policymakers. And this
22 is also an area something that we also heard about a
23 little bit this morning that consumer products are in an
24 area in which individuals can have some control over their
25 chemical exposures. So it's harder to change where you

1 live or to change your occupation, but you can choose
2 different products. And as we saw with the example of the
3 makeup, the HERMOSA Study, that you can reduce exposures
4 to certain chemicals.

5 So a key goal of this session is going to be to
6 discuss how Biomonitoring California can inform other
7 unique California programs, such as the Safer Consumer
8 Products Program and the Safe Cosmetic Program and vice
9 versa.

10 And I just wanted to, for the Panel, highlight a
11 few questions that you might want to think about as we
12 listen to these presentations this afternoon. So what are
13 strengths and weaknesses of using biomonitoring to assess
14 chemical exposures from consumer products? Are there
15 additional chemicals in consumer products that we should
16 consider in the future as potential designated
17 chemicals -- so chemicals that are on not yet on that
18 list -- for Biomonitoring California? Are there
19 particular consumer products with specific ingredients of
20 concern that might warrant targeted biomonitoring studies?
21 And what suggestions do you have for how the Program could
22 best collaborate with other State programs to help
23 identify and assess chemical exposures from consumer
24 products?

25 So those are things to kind of keep in the back

1 of your mind as we listen to the presentations.

2 And now, it's a great pleasure to introduce our
3 first speaker. So our first speaker is Ms. Claudia
4 Polsky. Ms. Polsky is Deputy Attorney General at the
5 California Department of Justice. Her current work
6 focuses on addressing the human health impacts of toxic
7 chemicals. And her docket has encompassed toxics
8 litigation under federal pesticide law, the California
9 Safe Cosmetics Act right to know Proposition 65 law,
10 Congressional testimony on implementation of the Stockholm
11 Convention on Persistent Organic Pollutants, and ongoing
12 work as advice and litigation counsel for multiple
13 California agencies working to address toxic threats.

14 Ms. Polsky has been with the Attorney General's
15 Office since 2000, with a detour in 2008/2009 to serve as
16 Deputy Director for Pollution Prevention and Green
17 Technology in California's Department of Toxic Substances
18 Control.

19 Ms. Polsky is going to be speaking to us about
20 biomonitoring and consumer products regulation in
21 California.

22 Welcome. Thank you.

23 (Thereupon an overhead presentation was
24 presented as follows.)

25 DEPUTY ATTORNEY GENERAL POLSKY: Greetings. I'm

1 delighted to be here today. I already learned an enormous
2 amount, and I'm looking forward to sharing what I know
3 about State authority over chemicals in consumer products.
4 And I think this authority defines a regulatory space to
5 which biomonitoring can add an enormous amount of value.

6 --o0o--

7 DEPUTY ATTORNEY GENERAL POLSKY: I want to begin
8 by noting that the California biomonitoring statute
9 enables the Program to do a whole lot of things that have
10 very little relationship to consumer products. And I'm
11 very excited about all of those potential uses, and I hope
12 I get to come back and talk to you about those another
13 day. But I think this is a great moment to be thinking
14 about how biomonitoring can inform consumer product
15 regulatory programs.

16 And it is definitely one of the things that
17 motivated the legislature to establish this Program. In
18 the part of SB 1379 that is not codified, the findings
19 that don't end up in the law books, the Legislature
20 expressly said that one of the purposes of biomonitoring
21 in California is assessing the effectiveness of current
22 regulations and helping to set priorities for reform. And
23 that is really the thrust of what I want to talk about
24 today, what is the practical use of all of this data?

25 --o0o--

1 DEPUTY ATTORNEY GENERAL POLSKY: So who regulates
2 consumer products in California?

3 It's actually many, many more agencies than most
4 people think. To start off with, everything sold in
5 California is subject to a federal regulatory floor. A
6 whole bunch of different federal agencies, the Consumer
7 Products Safety Commission, EPA, the FDA, represent
8 different subsets of the articles we use, like bicycles
9 and washing machines, and then the formulated chemical
10 products, like floor waxes and cosmetics.

11 But in almost all instances, those federal laws
12 really are just a floor. The State can regulate more
13 stringently. Sometimes, we get in trouble if we try to
14 change the nature of the label of a product that's sold in
15 national commerce. But if we're talking about the
16 substance of the product, how is it formulated, what does
17 it contain, or whether or not it can be sold in our State,
18 we have a lot of leeway to make our own rules.

19 And there are many agencies with a piece of the
20 action. And I'm going to describe some of these pieces of
21 jurisdiction today. And this is not a comprehensive list.

22 And I submit that the States are only going to
23 get more and more active in this area. They are going to
24 get more and more active for reasons probably familiar to
25 all of you policy watchers, which is that the federal

1 government has had an incredibly difficult time in its
2 ongoing effort trying to reform both the cosmetics title
3 of the Food, Drug, and Cosmetics Act, and the Toxic
4 Substances Control Act.

5 And so I would like to be more optimistic. I'm
6 not. I've been working on this for more than seven years,
7 so I don't think progress is really in sight. And I think
8 the State's are going to be the theater of action for a
9 long time.

10 --o0o--

11 DEPUTY ATTORNEY GENERAL POLSKY: So I think that
12 biomonitoring data can inform a variety different State
13 programs. And I also think that those programs can help
14 give very helpful focus to some of our biomonitoring
15 efforts. Many State agencies are trying to regulate
16 toxics in consumer products, based on what are pretty much
17 best guesses about what's driving exposure. And they
18 could benefit from much more granular data.

19 And conversely, I think this Program has the
20 capacity to generate a huge amount of data, but people are
21 not necessarily aware of every place it could have a
22 regulatory implication, or where, for example, there is a
23 coincidence of timing. That means there's a real
24 opportunity for regulatory change if we had the data to
25 support the change.

1 And then aside from this Program and all of the
2 different regulatory agencies, there is a third leg of the
3 stool which was mentioned in Dr. DiBartolomeis's
4 presentation, which is the legislature on whom the Program
5 is dependent for support and funding.

6 And those appropriating money for programs
7 typically want to know what difference they're making in
8 the real world. You know, why does this data matter?
9 What will change if we have this answer?

10 And I think focusing on consumer products, and
11 particularly some of these before and after regulatory
12 intervention stories can make a very compelling case to
13 the legislature.

14 And I want to emphasize, you know, especially to
15 any industry listeners in the room or via web, that this
16 is not a one-way ratchet. Biomonitoring data I don't
17 think will always tell us that we need to have a more
18 pervasive regulatory state. I really think of it much
19 more as a prioritization tool. Are we focusing on the
20 right things? Are our guesses right or wrong about
21 different sources of exposure?

22 --o0o--

23 DEPUTY ATTORNEY GENERAL POLSKY: There's a
24 tremendous amount of overlap in terms of agencies that can
25 regulate a particular product. I was holding a bag of

1 microwave popcorn yesterday, and I was thinking, oh, my
2 goodness. DTSC regulates the toxics potentially in the
3 ink in the product's packaging. Occupational health
4 authorities, you know, regulate whether or not there's too
5 much diacetyl exposure to workers and they'll develop
6 popcorn lung. Once you get to the actual ingredients of
7 the popcorn, you know, both FDA and potentially DPH can
8 tell you whether or not it can be artificially colored
9 yellow.

10 Then, of course, DTSC can jump in under its Safer
11 Consumer Products regulations now and tell you whether you
12 can use perfluorinated chemicals to line the bag and make
13 it nice and waxy. I mean, it's really sort of
14 mind-boggling how many people touch that popcorn, and yet,
15 you know, may or may not be -- meet the safety standards
16 we would like it to. There's a lot of overlapping
17 jurisdiction.

18 And so as a lawyer, I find it somewhat exciting,
19 because there are often many ways to go at an exposure
20 problem or an enforcement problem, but it's also really
21 complicated, because you have to understand how all these
22 regimes intersect, and your tools to reduce exposure are
23 not often, you know, what you think they will be.

24 And just to give a very, very short example. I
25 know I don't have a lot of time. When I worked with DPH

1 on a case regarding hair products that caused tremendous
2 formaldehyde exposure to salon workers, exposure that was
3 so high that it was not just above Prop 65 limits, it was
4 making people acutely asthmatic and so forth.

5 It turned out that the best way ultimately to
6 address the problem and get the product reformulated was
7 through the Air Board's VOC regulations. You know, the
8 amount of VOC emitted by the product actually violated
9 numerical limits, and a lot of the other regulatory
10 regimes we had to work with were much squishier.

11 Now, before we move to the next slide, I actually
12 just want to assuage a fear that will arise because you're
13 going to see a lot of text, and that's sort of lethal on a
14 PowerPoint slide. And you're even going to see regulatory
15 and statutory citations, for which I apologize. But I was
16 asked to provide a legal overview, which is hard to do
17 without grounding it in legal authority.

18 So I just want to assure you, I'm not going to
19 read these slides to you. These are just in your
20 materials for your reference if you think I really don't
21 remember, you know, where this authority derives from and
22 you want to consult them, but I want to tell a somewhat
23 different story than is on these slides.

24 --o0o--

25 DEPUTY ATTORNEY GENERAL POLSKY: The State agency

1 that I -- has very expansive, maybe the most authority
2 over toxics in consumer products now --

3 MS. HOOVER: Claudia, hang on. We're having a
4 technical problem. Apparently, the webinar can't see.

5 DR. PLUMMER: Sorry about that.

6 DEPUTY ATTORNEY GENERAL POLSKY: Is that it? Is
7 it fixed?

8 MS. DUNN: Yeah.

9 DEPUTY ATTORNEY GENERAL POLSKY: Okay. Thanks.
10 So DTSC has very broad jurisdiction over toxics and
11 consumer products. It has historically always had
12 onesie/twosie jurisdiction over particular things that the
13 legislature identified for action, like the toxics
14 end-product packaging that I mentioned, mercury in
15 thermostats. But a few years ago under AB 1879, as you
16 all know, the Department of was really given, for the
17 first time, the latitude to define its own objects of
18 regulation, what worries you, what should be the products
19 and chemicals we prioritize for regulation?

20 And there's a detailed regulatory scheme that Dr.
21 Williams will talk to you about later, but -- I'm actually
22 on the wrong pages of my notes here.

23 But one of the things that's interesting to me,
24 because of the timing of this enactment, is that it's
25 really the first statute, and especially the first set of

1 regulations in California that expressly contemplate that
2 biomonitoring data will help set our priorities.

3 So the statute says, you know, DTSC's regulations
4 should consider, in establishing priorities, the potential
5 for exposure to chemicals in a product.

6 Well, of course, biomonitoring data does that one
7 better. We're not just demonstrating the potential.
8 We're demonstrating actual exposure, so that the case is
9 made. And then DTSC's regulations say that where
10 chemicals have been identified for biomonitoring, either
11 federally by CDC or in this State, these are automatically
12 chemicals that can be regulated in consumer products.

13 And again, Meredith will talk about this more
14 later, but in two of the three cases of initial products
15 that DTSC has now proposed for regulations, the existence
16 of human biomonitoring data was one of the rationales for
17 prioritizing those products.

18 --o0o--

19 DEPUTY ATTORNEY GENERAL POLSKY: CDPH, the
20 Department of Public Health, has an enormous amount of
21 jurisdiction over certain consumer products, including
22 cosmetics. It has actually a lot more jurisdiction than I
23 think most people realize, because it hasn't had the
24 resources to exercise it. I think there's a tremendous
25 amount of potential energy that could become kinetic with

1 more resources.

2 But DPH, in the cosmetics arena, has the
3 authority to require companies to disclose hundreds of
4 carcinogens and reproductive toxins in products sold in
5 California. The list is slightly more expansive than the
6 Prop 65 list, but it includes all the Prop 65 chemicals.

7 But then what's really interesting is that going
8 beyond establishing that list, CDPH has the authority to
9 review information and then ask all sorts of questions of
10 a manufacturer. This is information that's hard to get
11 at, things like sales and use data for products sold in
12 salon settings. I think we could do a lot with that
13 combined with evidence of actual exposures experienced by
14 salon workers. Again, this is largely unexercised
15 authority, because of resources, but there's quite a bit
16 of potential.

17 And once DPH makes a determination as to what
18 seems safe or unsafe, it also has authority that is very
19 FDA-like to ban or restrict all sorts of substances. We
20 really can make our own law in this area.

21 --o0o--

22 DEPUTY ATTORNEY GENERAL POLSKY: The Air
23 Resources Board has very substantial jurisdiction over
24 consumer products. Many people do not realize that and
25 it's why I hesitated when I said DTSC may have the most

1 expansive jurisdiction. DTSC perhaps has most discretion
2 in terms of the breadth of the universe it can regulate,
3 but ARB regulates hundreds of chemicals in hundreds of
4 different applications. I mean, literally things as
5 diverse as degreasers and cooking spray, you know, grease
6 and non-grease, and for several different reasons.

7 The Air Resources Board is concerned about VOCs,
8 of course, especially in Southern California, because of
9 smog concerns, but it also regulates toxic air
10 contaminants for human health reasons more directly. And
11 then it can even regulate products, because they
12 contribute too much to global warming, broad heat trapping
13 capacity.

14 And this is a great moment for the biomonitoring
15 program to engage in I would hope a really much more
16 formal regularized way with ARB staff, because ARB at this
17 exact moment is engaged in tremendously broad consumer
18 products survey, and many, many product categories. It's
19 going to give us lots of data about what's used in the
20 State in what volume, and then ARB will deciding what to
21 regulate. Again, lots of opportunity to do some before
22 and after monitoring and to help inform priorities.

23 And just in one example, I was talking with ARB
24 consumer products staff about, you know, where would
25 biomonitoring data really make a difference to you?

1 And an example they gave me was in this toxic air
2 contaminants arena. What happens is once ARB designates
3 something as a toxic air contaminant under law, ideally it
4 ultimately proceeds to something called an Air Toxics
5 Control Measure. And I'm sure many of you are familiar
6 with these. They're pretty technical documents. A
7 familiar one is probably the air toxics control measure
8 for formaldehyde from composite wood products, which has
9 changed the market quite a bit, and ultimately became
10 essentially a national standard.

11 But ARB needs a lot of data to support those
12 standards, those control measures. And, of course, those
13 measures are often challenged, and even litigated. Often
14 ARB doesn't have the data to establish a direct control
15 measure. So, for example, when ARB, to reduce VOCs,
16 established certain limits for paints and coatings, which
17 are, you know, a big VOC releaser, they found that
18 manufacturers were inclined to reformulate. One of the
19 ways they were inclined to reformulate was to add
20 methylene chloride, which was lower VOC, but of course had
21 other environmental impacts.

22 And so ARB said, well, as a mitigation under the
23 California Environmental Quality Act, because we do have
24 to address environmental side effects of our actions, you
25 know, we're going to specify that you can't increase

1 methylene chloride. But it was a very indirect way to go
2 at the problem, because they said to me, you know, we just
3 didn't have the numbers to establish an air toxics control
4 measure directly for methylene chloride. We couldn't come
5 at the problem frontally. And so I think there are many
6 ways that their work can be enhanced and refined with
7 biomonitoring input.

8 --o0o--

9 DEPUTY ATTORNEY GENERAL POLSKY: DPR has a lot of
10 jurisdiction over consumer products in the State. We
11 often tend to think of pesticides as mostly an
12 agricultural issues, but of course people spray Raid to
13 control roaches and ants in their home. People put Off!
14 on their children to prevent insect bites. People put
15 antifouling paints on their recreational boats so they
16 don't get barnacles. There are lots of consumer product
17 pesticides.

18 And DPR has the ability to cancel or refuse the
19 registration of a pesticide for use in our entire State if
20 it finds, for example, that there are serious
21 uncontrollable adverse effects, or if it finds that the
22 pesticide is of less public value or greater detriment to
23 the environment than the benefit received by use.

24 Well, how are they going to make that showing?

25 They're going to make that showing because of the

1 kind of data that a biomonitoring program can generate.
2 And I just provide one example here, which is that DPR has
3 actually banned the sale of certain pesticide products
4 based on animal biomonitoring data showing that certain of
5 these second generation anticoagulant rodenticides posed
6 hemorrhage risks to, among other things, endangered
7 animals in California.

8 --o0o--

9 DEPUTY ATTORNEY GENERAL POLSKY: OEHHA and the
10 Department of Justice both have roles with respect to Prop
11 65, which I'm sure is a statute well familiar to all of
12 you. One of the things that may be a little bit invisible
13 is that public enforcers, and in particular the Department
14 of Justice, have a special role with Prop 65, which is
15 evaluating whether private lawsuits really have merit to
16 them.

17 And we get provided with a variety of
18 confidential information by private plaintiffs who want to
19 bring Prop 65 suits trying to substantiate the case that
20 there is a level of exposure that requires a consumer
21 warning. And often, we don't have the data to make that
22 judgment call.

23 And this is another area in which I think
24 biomonitoring data can really help us. If somebody
25 submits an expert declaration to us that says there is

1 this level of lead in imported Chinese candy, this is what
2 the limit is for lead requiring a warning, that's pretty
3 easy for us to evaluate a straightforward case of
4 ingestion of something that we know quite a lot about.

5 If an expert submits something to us and says we
6 think a plausible exposure scenario is that the average
7 toddler spends 20 minutes a day mouthing a computer
8 circuit board, we say, huh, you know, I'm not so sure
9 you're really above the threshold. That is a made-up
10 case, but it's not too far from, you know, the outer
11 bounds of what we see.

12 But there are many, many things in between those
13 extremes of legitimacy and ridiculousness, and it's hard
14 for us to assess without knowing what products are really
15 driving exposures.

16 --o0o--

17 DEPUTY ATTORNEY GENERAL POLSKY: There are many
18 other agencies that indirectly affect our consumer
19 products. There's also already been much discussion today
20 of the Home Furnishings Bureau of the State, whose
21 flammability performance standards have had the incidental
22 effect of introducing a lot of halogenated flame
23 retardants into our home furnishings.

24 --o0o--

25 DEPUTY ATTORNEY GENERAL POLSKY: Even more

1 obscure is the Office of the State Fire Marshal, which
2 actually approves a whole different universe of chemicals
3 without examining their toxicity for use in things like
4 flame retarding circus tents, and theater draperies, and
5 the reunion structures, you know, the fabric tents erected
6 for your college reunion. There is a profession of people
7 who goes around spraying a variety of chemicals about
8 which we know almost nothing. There's a pretty
9 interesting potential biomonitoring study to supplement
10 what's been done through FOX with firefighters.

11 --o0o--

12 DEPUTY ATTORNEY GENERAL POLSKY: And so my real
13 hope is that as all these California agencies come to
14 understand and engage in these product regulatory
15 exercises, there will be much more regularized lateral
16 communication. I'm not suggesting some horrible
17 bureaucratic super structure to complicate everyone's
18 life, but I do think a regular set of conversations at
19 staff level can help pull regulatory expertise and also
20 create a real back-end market for this biomonitoring data,
21 and, you know, a set of agency allies who will go to the
22 legislature and say this is how the Biomonitoring Program
23 is actually helping enhance our work.

24 --o0o--

25 DEPUTY ATTORNEY GENERAL POLSKY: I just want to

1 switch for two seconds to a different theme from today,
2 which is kind of the converse of what I've been talking
3 about, because I've been saying, you know, really one of
4 the key values of biomonitoring data is to help make sure
5 that we're doing our regulatory work effectively, that we
6 can set limits at the right levels, but the other thing I
7 think is that biomonitoring data can -- non-targeted
8 screening can really help show us what we're missing
9 entirely.

10 And this is a weird slide to put up, because this
11 is, of course, not non-targeted screening. This is
12 extremely targeted screening for one -- you know, congener
13 of one particular brominated flame retardant. But to me,
14 without biomonitoring data, I think nobody ever would have
15 guessed that upholstered furniture could be a very big
16 driver of toxics exposure in the average California
17 household. I don't think that is intuitive at all.

18 --o0o--

19 DEPUTY ATTORNEY GENERAL POLSKY: And so I think
20 biomonitoring data really can, you know, in the context of
21 a non-targeted screening program, help make sure that
22 we're focusing on the right things.

23 --o0o--

24 DEPUTY ATTORNEY GENERAL POLSKY: This says end,
25 but I'm not quite at the end, because I actually, you

1 know, want to say what I think is probably the most
2 important thing about the utility of this Program. And I
3 want to pick up on something that Dr. Petreas said before.
4 She framed it very well.

5 She said, you know, regulatory interventions
6 really do make a difference. I think biomonitoring is one
7 of the very few programs in California that has the
8 capacity to tell good news stories really effectively.
9 And I think that is something that government is terrible
10 at, as a general proposition.

11 People tend to think of regulation as burdensome
12 and amorphous and expensive, and they don't tend to
13 connect it to an ultimate point, which is protecting
14 public health and the environment.

15 And I submit to you, if you showed any sane
16 libertarian a graph of the blood lead levels in America
17 before and after the banning of lead in gasoline, you
18 would have a convert to the regulatory state. I mean, you
19 simply cannot look at the graph and say we didn't need
20 government. This wasn't the right thing to do. Okay.
21 The downslope is so steep you could ski on it.

22 And I think you have the capacity to generate
23 stories and graphics like that over and over. I saw some
24 incredibly persuasive slides like that this morning. You
25 know, the decline in PBDE levels. Okay. Well, we're

1 substituting other things that may not be great, but there
2 are really impressive things to show. And I also want to
3 just give a shout-out to the ARB in this capacity, because
4 the ARB is an agency that has done a really fantastic job
5 of doing before and after ambient environmental
6 monitoring, depicting it graphically, and showing that its
7 regulations make a huge difference.

8 And so I would really encourage you again in
9 forming these lateral partnerships with agencies that
10 regulate toxics to think about the story you're going to
11 tell, to think about what you're trying to prove, to think
12 about the ways biomonitoring data show that we're actually
13 making California healthier.

14 Thank you.

15 (Applause.)

16 CHAIRPERSON LUDERER: Thank you very much. That
17 was really interesting and informative overview of all the
18 complicated legal network within which this resides. So
19 we have some time for Panel and audience questions now,
20 about ten minutes, to take some specific questions. And
21 then we're going to have a lot of time for discussion at
22 the end of all three presentations. So any Panel members?

23 Dr. McKone.

24 PANEL MEMBER MCKONE: Turn it on, talk close.

25 Is it working?

1 Ah, there we go.

2 It's really interesting. A lot of good ideas.
3 The one question that came up for me is you didn't mention
4 much about the Water Board and their jurisdiction in terms
5 of consumer products that go down the drain, end up in
6 water supply, or end up in septic tanks, potentially
7 contaminating shallow groundwater. Is there -- I mea, I
8 can give you one.

9 I do some work with ARB on consumer products, and
10 we're looking at consumer products that go down the drain
11 and then end up being volatilized in publicly owned water
12 treatment facilities, which is a pathway to get them into
13 the atmosphere under ARB jurisdiction. But I was really
14 curious about the Water Board's jurisdiction on consumer
15 products down the drain.

16 DEPUTY ATTORNEY GENERAL POLSKY: It is a great
17 question, and I can't give you a good answer, except that
18 in most cases Water Board jurisdiction is more indirect.
19 I was -- for example, we could also talk about Cal/OSHA
20 and ways that things that can monitor can indirectly lead
21 back to, for example, regulation of professional use
22 products, but it's fairly indirect.

23 And so I was having trouble finding examples of
24 super directability to control product composition, but it
25 may be just that I'm ignorant. So I'm happy to be

1 educated.

2 CHAIRPERSON LUDERER: Any other Panel member
3 questions?

4 Any questions from the audience?

5 Oh, Julia. Dr. Quint.

6 PANEL MEMBER QUINT: Great presentation. I
7 really enjoyed it. I was just wondering if you ever --
8 for Prop 65, do you have any idea of some of the products
9 that have warnings? This is -- I mean, it's a big
10 question. You know, there are people -- I mean, there are
11 products that are supposed to have Prop 65 warnings that
12 are the subject of lawsuits, for instance, I know, where
13 they haven't disclosed.

14 And I'm wondering if there's -- do we have any
15 information on any of the products that -- of any kind,
16 either the ones that are subject to litigation or, you
17 know, where people are identifying because they don't have
18 the proper warnings, or do we have any handle at all in
19 terms of Prop 65 warnings about what chemicals are in them
20 or, you know -- do you understand my question?

21 DEPUTY ATTORNEY GENERAL POLSKY: I want to be
22 sure that I understand. Is the question do we know which
23 chemicals are the subject of the warnings, which are often
24 quite vague? It often says something like this product
25 contains a chemical known to the State to cause cancer.

1 Do we know what the underlying chemical is or do you have
2 a different question, which is are there --

3 PANEL MEMBER QUINT: I'm trying to get at this --
4 I mean, the problem for all of these programs is finding
5 out where the chemical is. I mean, it's this detective
6 story of where -- what product does the chemical reside
7 in? I know for everything that I work on that's the
8 question. So you're searching material safety data sheets
9 and doing a whole number of other things to find out where
10 the chemical is.

11 So I know that people have to warn for Prop 65.
12 So my question was -- is simply, is there anything -- I
13 mean, can we match up at any point a product with a
14 chemical that's on the Prop 65 list, and I suspect not?

15 DEPUTY ATTORNEY GENERAL POLSKY: Sure. Yeah, let
16 me go -- let me go at that a few ways and see if I can
17 answer the question. There is a weird asymmetry that
18 occurs that goes as follows:

19 When somebody issues a notice of violation to a
20 manufacturer or seller of a product, and that person is
21 alleging you should have warned me because your product
22 has something that is on this list, or has more than one
23 chemical that is on this list, that notice of violation,
24 which is a public document -- they're posted on the
25 Attorney General's website no matter who issued them.

1 That document has to identify the chemicals that are the
2 subject of the warning. It can't just say you have some
3 thing you should be warning me about.

4 But ultimately, let's say that case is litigated
5 or more likely it's settled -- most of these cases
6 settle -- the manufacturer agrees to put a warning on, the
7 warning text that is authorized by statute does not
8 require that the chemical be specified. And so you end up
9 with something pretty vague and uninformative in public
10 space, but there is a way to drill down and figure out
11 what the chemical is.

12 Usually, though, we have a lot more questions
13 about the level of exposure than we do about the nature of
14 the chemical that triggered the lawsuit and the warning.
15 And in many, many cases, particularly in the consumer
16 product universe, you know, we have absolutely no idea of
17 what degree of contributor that particular product source
18 is to somebody's body burden of that chemical, or, you
19 know, ambient concentrations of that chemical. Most of
20 these chemicals are things that are in a lot of things.
21 Phthalates would be a great example. You know, does
22 somebody have phthalates in them because of, you know,
23 I.V. tubing or because of mouthing plastic toys or because
24 of food contact packaging or, you know, a million
25 different things.

1 So does that partly answer the question?

2 PANEL MEMBER QUINT: Yeah. I mean one of the
3 things about -- I mean, it is true that you don't know how
4 much the chemical is contributing to body burden. But the
5 good thing about a lot of these regulations, including the
6 Safer Consumer Products regulation, is hazard based as
7 opposed to risk based, so -- and we are interested -- I
8 mean, one could prioritize, just based on a chemical being
9 in many, many products, so you're having cumulative
10 exposure.

11 So, you know, I worry less -- I know for Prop 65
12 the level becomes the issue for the litigation, but I
13 think in general, we're concerned about hazard and focused
14 on hazard for a lot of these things. And having
15 phthalates in multiple consumer products would trigger to
16 me prioritization of phthalates just based on the fact
17 that you can get them into your body in a lot of different
18 ways.

19 DEPUTY ATTORNEY GENERAL POLSKY: That's a good
20 point. And let me just say two things in response to it.
21 As to your sort of narrow question about the subjects of
22 Prop 65 warnings and so forth, I know OEHHA is working on,
23 you know, potential warning regulations that may or may
24 not add specificity, but, I mean, that's sort of an active
25 conversation how to make warnings more useful.

1 But separately, you're alluding to something
2 really important and kind of philosophical, which is that
3 all these different State regulatory regimes, I was
4 running through very quickly, have sort of different
5 undergirding philosophies. And Prop 65, at least with
6 respect to non-drinking water discharges, is, you know,
7 very risk management based. You know, it's not hazard
8 based.

9 You look at something like the California Safe
10 Cosmetics Act, which says, look, these are the chemicals
11 you have to disclose. We don't care what percentage they
12 exist at. It could be 0.001 percent. If it's an
13 intentionally added ingredient, you have to tell us.
14 Well, that, to me, suggests much more of a hazard frame of
15 mind, so they're not philosophically consistent.

16 CHAIRPERSON LUDERER: Okay. Thank you again.

17 We're going to move on to the next presentation.
18 And as I said, we'll have lots more time for discussion
19 and questions afterwards.

20 So it's a real pleasure to introduce Dr. Thu
21 Quach, who is a research scientist and the Cancer
22 Prevention Institute of California, a nonprofit research
23 organization. Her epidemiological research focuses on the
24 influence of environmental and sociocultural factors on
25 the health of immigrant populations and other

1 disadvantaged communities.

2 Thu has led a number of studies on the booming
3 nail salon workforce, comprised mainly of Vietnamese
4 immigrants. In 2010, she returned the Asian Health
5 Services to become the inaugural research director at this
6 community health center working on multiple clinic-based
7 and health care research projects.

8 She also oversees the Community Services
9 Department, including various community engagement and
10 outreach programs. She serves on a number of committees,
11 including the National Institute of Occupational Safety
12 and Health, NIOSH, Service Sector Council, and the
13 steering committee of the California Healthy Nail Salon
14 Collaborative.

15 Welcome, Dr. Quach. We're looking forward to
16 your talk.

17 (Thereupon an overhead presentation was
18 presented as follows.)

19 DR. QUACH: Great. Thank you so much for having
20 me here. I have to admit I'm a little bit nervous. It's
21 quite an awesome crowd.

22 So my presentation is going to be a bit
23 different. It's going to focus more on cosmetic products,
24 and particularly nail care products and how they apply to
25 a worker population that we think is highly exposed.

1 --o0o--

2 DR. QUACH: So just really briefly, cosmetics are
3 widely frequently used over long periods of time. We
4 often start using them as babies, you know, in baby washes
5 and all such. And then, you know, I think for women, it's
6 average that women probably use about 15 cosmetic products
7 per day. I don't even want to begin to count how many
8 products I've used this morning, but, you know -- and for
9 men, we've really seen an increase in what they're using.
10 So this is a major concern in terms of their use.

11 --o0o--

12 DR. QUACH: But, you know, one of the things that
13 comes up is that despite the use, there's been very
14 little, if any, regulation -- I should say very little,
15 because there's some, as Claudia's pointed out, but it
16 really falls short.

17 Cosmetic falls under the U.S. Food and Drug
18 Administration, but the FDA has -- does not have the legal
19 authority to require pre-market testing of products by
20 manufacturers to ask for necessary information from the
21 industry for FDA to conduct its own pre-market testing,
22 and that products sold for professional use doesn't have
23 to have the ingredient level -- labels on them.

24 This is a big concern, because we often know that
25 worker populations are probably the more highly exposed

1 than the general population. And in many ways, the
2 industry has no incentive to conduct toxicity testing,
3 especially when it comes to long-term health effects like
4 cancer.

5 --o0o--

6 DR. QUACH: Now, all of this, as well as all the
7 stuff that's been happening in Europe in banning some of
8 these compounds, has really inspired some groups to really
9 look at California as well as the nation and try to apply
10 some more regulation. I think some of the organizations
11 and individuals are in this room who really pushed for a
12 bill, the Migden bill, back in 2004/2005, I want to say.
13 And it established -- it actually passed. There were
14 several bills on the floor, but this one passed, and we
15 were really happy.

16 But what it did was established the California
17 Safe Cosmetics Act. And this Act has reporting
18 requirements -- I think Claudia spoke about it a little
19 bit -- has reporting requirements that apply to cosmetic
20 companies that make more than one million annually in
21 worldwide aggregate cosmetic sales, companies with their
22 name on the label of cosmetic products sold in California
23 after 2007, and products that contain an ingredient
24 identified as a known or suspected human carcinogen or
25 reproductive toxicant.

1 So it was a big deal when this was actually
2 passed. It was an even bigger deal when this actually got
3 implemented, and that we're seeing some of it -- some of
4 the data come out.

5 --o0o--

6 DR. QUACH: I think in late 2013 or even very
7 early 2014, we saw the launching of the website, and this
8 was such a big success in terms of having this data
9 available to the public, part of a right-to-know piece.

10 However, with this -- so this website is nice.
11 You can go on and kind of look at what's in -- if you look
12 up like red lipsticks and such, you can see what's being
13 reported, and I really want to emphasize reported. And
14 there's been major concerns about underreporting an issue,
15 and then around issues around what, you know, cosmetic
16 companies are claiming as trade secrets, so that they
17 can't reveal that. But it really limits what a consumer
18 knows is going into their body when they use these
19 cosmetics products.

20 --o0o--

21 DR. QUACH: So switching gears slightly, I want
22 to focus a little bit more on nail salon workers, why the
23 interest in this workforce?

24 So in the last few decades, there's been a rapid
25 growth of nail salons. And many of us, you know, walking

1 down the street will really see sort of many salons, you
2 know, popping up. Sometimes you see two or three on the
3 same street, you know, in competition with each other.
4 And there's -- it's sort of the -- what they say the more
5 inexpensive luxury that people can go in and get their
6 nails done. And it's become very, very popular.

7 So in California, as well as in many states, in
8 order to provide nail care services, as well as hair care
9 services, and other cosmetic services, you actually have
10 to be licensed by the State. And to be licensed, you have
11 to go through so many hours of beauty school training.

12 So in California, as of 2014 -- I mean, as of
13 2010, I believe, there was 114,000 licensed manicurists,
14 someone who is licensed to provide just nail care
15 services. There were over 300,000 cosmetologists, someone
16 who's licensed to provide both hair and nail care
17 services. So it's a huge, huge workforce.

18 Vietnamese, based on some of the estimates that
19 we've done, comprise about 60 to 80 percent of the
20 workforce in California. So it's very relevant to this
21 discussion.

22 The vast majority of the workers are women, often
23 women of reproductive age. Although, I have to say that
24 I've been seeing a lot more men working in the nail
25 salons.

1 --o0o--

2 DR. QUACH: These two graphs actually show you
3 data that I was able to obtain from the California Board
4 of Barbering and Cosmetology. And it's a licensee file.
5 So anytime someone gets licensed, it enters into the data.
6 And I was able to get it going back from 1970 to --
7 through 2005. And you really can see in Figure 1 sort of
8 the steady growth of cosmetologists over time. But over
9 on the right-hand side, manicurists, you know, the rise
10 really took off in 1990.

11 And the shaded area are those that we presume are
12 Vietnamese based on their first and last name. So you
13 really see that this workforce is really making up a large
14 proportion of the manicurist workforce.

15 --o0o--

16 DR. QUACH: So there's a lot of complexity when
17 you talk about this workforce. Many of them don't have
18 the typical employee/employer type of relationship.
19 They're often brought on as independent contractors or,
20 what we call, booth renters renting a small space in a
21 very small salon. And so they aren't protected by -- you
22 know, they aren't protected by some of the laws of OSHA
23 and such. And they also may lack some of the employee
24 health benefits. Although, with the Affordable Care Act,
25 we're hoping some of that changes.

1 What's interesting to us is it's a small business
2 sector, so it's different from your big companies or
3 you're dealing with maybe the big employer and you're
4 trying. Often times, these are -- the owners are workers
5 themselves. They're really hiring their own family
6 members and their own friends into the salon to really
7 work in a very small profit margin.

8 There's also concerns -- major concerns about the
9 workplace hazards. They're not exposed to just one or two
10 chemicals. They're exposed to many different chemicals
11 over long periods of time. They're working eight to ten
12 hours, often seven days a week. And this really adds up
13 over many years, in some cases.

14 The salons themselves are poorly ventilated.
15 They're small spaces. I've gone into very small salons
16 that probably maybe the size of a small bathroom, and
17 larger salons too. So they really range in size, but
18 overall they're not huge.

19 And, you know, as I mentioned, there's really
20 limited or lack of product labeling, which really limits
21 information of what compounds you're being exposed to.

22 One of the things I want to raise is the fact
23 that many of these workers are immigrants from Vietnam,
24 and -- and in other parts of the country, I would say that
25 there are immigrants from other countries as well. So

1 there are major language barriers and cultural factors
2 that really impact whether they understand some of the
3 limited information that's available to them.

4 I have to say that one of the sources of
5 information come from, what you call, the Material Safety
6 Data Sheet. And I read through those. And as someone who
7 has a Ph.D., I don't always understand them. So you
8 really wonder whether this -- the immigrants themselves
9 can understand this, even when they're translated.

10 --o0o--

11 DR. QUACH: So this is a very abbreviated list of
12 compounds that are used in nail care products. And you
13 can see that there are some compounds that are of major
14 concern for us. I've highlighted dibutyl phthalates,
15 which I'll go into a little bit more.

16 And they have -- they're used in from nail
17 polishes to nail polish removers. They have different
18 health effects, anywhere from endocrine disruption to
19 cancer causing. And I note endocrine disruption just
20 because we're worried about the long-term impacts when you
21 affect the endocrine system, particularly for hormonally
22 mediated cancers, like breast cancer and such. And the
23 routes of exposure are often multiple routes.

24 --o0o--

25 DR. QUACH: I do want to note that dibutyl

1 phthalates, methylene chloride, and toluene I've starred
2 because of its relevance to the biomonitoring discussion.

3 So in the work we've really claimed -- we've
4 really coined this term the toxic trio when it comes to
5 some of the chemicals that are used in nail polish. It
6 includes dibutyl phthalates, formaldehyde, and toluene.
7 And you can really see on here I outline why they're used
8 in the nail polishes, but as well as some of the health
9 impacts that we're concerned about.

10 And over time, as the work has really pushed
11 around disseminating the knowledge around toxic trio,
12 there's been more and more nail polishes that have come
13 out that have phased out these toxic trios. Although,
14 there are some that claim that they've phased out and
15 we've learned otherwise. And so those are the trickiness
16 when it comes back to the lack of regulation, when it
17 comes to what's in these products.

18 But overall, there's been really -- efforts that
19 go beyond regulation, but really pushing to get companies
20 and manufacturers to want to phase out really hazardous
21 compounds.

22 --o0o--

23 DR. QUACH: So now I'm going to talk about some
24 of the research studies that I've -- I and my colleagues
25 have conducted over the years.

1 --o0o--

2 DR. QUACH: So we really started off right around
3 2004/2005. We were hearing a lot of concerns coming from
4 the community, particularly Asian Health Services, which
5 is right down the street. Many of their staff were going
6 out and doing health education into salons. And we were
7 hearing back from the workers that there were a lot of
8 concerns about the chemicals that they were using, the
9 smells that they were experiencing.

10 And they were going also into see their doctors
11 and noting that they were getting a lot of skin
12 irritations and such. So there was a lot of interest.
13 And at the time, I was -- and so I was working with Dr.
14 Peggy Reynolds. And my focus had been on, you know,
15 environmental and occupational exposure. And with my work
16 and relationship with Asian Health Services, we decided to
17 collaborate.

18 And we put in a grant that was funded by the
19 California Breast Cancer Research Program for a pilot
20 study to just really understand what's going on with this
21 workforce.

22 --o0o--

23 DR. QUACH: So in our study, we did two focus
24 groups of over 200 surveys to really understand, you know,
25 what are their concerns, what are some of the hazards that

1 time that we actually had the data on cancers was quite
2 limited. So there really needs to be an extension of the
3 study to really see more.

4 --o0o--

5 DR. QUACH: The second component -- and I want to
6 note that this was back in around 2007 and '08, was really
7 hard to get into the salons, but this was the first air
8 monitoring study that we conducted with about 80 workers,
9 each of them measured multiple times from different --
10 from 20 different salons for the personal air monitoring.
11 And you can see that badge in the picture that they're
12 wearing during the workshift. And then we also did area
13 monitoring in a few of the salons.

14 And what we found was overall that toluene levels
15 were twice as high as what's recommended in indoor air. I
16 emphasize the recommended, because if you use the
17 standards, occupational standards, we felt that often it
18 was too high, and wasn't really giving us insights into
19 the protection of these workers who were really spending
20 so much of their time in the salons. In terms of the area
21 monitoring, we did find methyl methacrylates. And there's
22 a lot of concerns when it comes to methyl methacrylate.

23 And then we were concerned about the different
24 compounds they were using, so we also measured TVOCs, and
25 those levels were higher as well. And in terms of the

1 acute health systems about -- over a quarter of them were
2 reporting uncomfortable health symptoms.

3 --o0o--

4 DR. QUACH: So now I want to talk about a study
5 that we have ongoing, an intervention study, funded by the
6 National Institute of Environmental Health Sciences. It's
7 a study that we creatively, I think, entitled KHOEDEP,
8 KHOE is healthy and DEP is pretty, but you can see that
9 the acronym really stands for something.

10 --o0o--

11 DR. QUACH: It's a randomized control trial. And
12 the idea is to really evaluate the effectiveness of the
13 train-the-trainer intervention.

14 Now, here we really looked at the owner and
15 worker dynamic. And we really knew that we had to work
16 with the owners to really encourage and promote behavior
17 changes within the salon. So we actually recruit nail
18 salon owners and train them and have them turn around and
19 train the workers to really promote salon level changes.

20 And then to evaluate, we conduct personal air
21 monitoring, as well as surveys to understand it. This
22 gets rolled out throughout the State in four different
23 regions listed there. And you can see the flip chart
24 pictures is that it's a very easy-to-use type of training,
25 you know. You're presenting to the audience, and in the

1 back there are sort of the notes that you can read off of.

2 --o0o--

3 DR. QUACH: There are five things that we really
4 promote which is using less toxic products or alternatives
5 that are safer, or without the toxic trio; ventilation of
6 stations; protecting your hand and face through personal
7 protective equipment; and then just basic things around
8 how to store and handle products properly, and then
9 practicing healthy work habits, like really taking breaks
10 outdoors and such.

11 --o0o--

12 DR. QUACH: So the study design is that we
13 actually recruit the salons, randomize them into an
14 intervention group and a comparison group. And then the
15 intervention, which includes the owner being trained and
16 then them turning around and training their workers, is
17 done with the intervention group. And then for the
18 comparison group, we do a delayed full intervention.

19 We do three measurements, one right -- one at
20 baseline, and then a second one, after the owner gets
21 trained, but before they've trained their workers, and
22 that's partially because we want to understand if we do
23 see a change, is it about the owners themselves having
24 control of the salon and making these changes or is it do
25 you really have to go into the worker and that's where the

1 last measurement comes in?

2 --o0o--

3 DR. QUACH: So now I want to touch upon some of
4 the research gaps and emerging products that are of
5 concern for us.

6 --o0o--

7 DR. QUACH: In terms of research gaps, I think we
8 always struggle with better exposure assessment. You
9 know, how do you go beyond the single chemical? So a
10 multiple chemical approach, and understanding sort of the
11 synergistic effects and potential predispositions for
12 certain populations.

13 Tying exposure to sources. I think this was a
14 discussion earlier. How do you know what you measure and
15 how do you tie it back to the products? And I think
16 that's a big, big issue, not just for regulation, but also
17 in terms of what you're promoting with the workers.
18 Can -- once you do these measurements, can you go back and
19 tell them, you know, really avoid this product or limit
20 how it's being used, so you can really reduce your
21 exposure. If we don't know, I'm not sure what we're going
22 to be able to tell the worker population.

23 And then I think biomonitoring, particularly in
24 the case of phthalates, provides some insights into that,
25 and I'll go into that a little bit more.

1 As an epidemiologist, I think there's always a
2 need for more longitudinal studies that look at things
3 like respiratory, reproductive, and cancer. The
4 cross-sectional approach is going to be always limited,
5 because the ones that are really sick we believe have left
6 the workforce. You're really going to a healthier
7 population.

8 Then there's issue around the long latency
9 periods that we face when we looked at the cancer risks,
10 and then the lack of reliable and relevant health
11 surveillance data. We have cancer, but what if a lot of
12 this is really related to some of the reproductive
13 concerns. Can we really get at that. I have a study
14 where we're looking at birth records, but birth records
15 only contain so much in the data. We're not looking at
16 sort of the developmental issues that the growing child
17 can face as a result of exposure -- in utero exposure.

18 And then I think in working with a population,
19 whether it's this population or any other, you really have
20 to consider, you know, what's your health messaging?
21 What's the effective way of messaging it?

22 Because at the end of the day, it does apply to
23 these workforces and these populations that you're
24 serving. And I think that they really are a powerful
25 stakeholder. We talk about changes in policy, but I think

1 it really comes strongly to the policy. The data itself
2 may be there, and you may be able to present your case,
3 but I think the workers and the impacted population really
4 have a powerful way in which they can influence
5 policymakers. And we've seen that happen multiple times
6 in trying to engage these workers into some of the policy
7 discussions.

8 --o0o--

9 DR. QUACH: And the concern that I want to bring
10 up is, you know, in dealing with the cosmetics industry,
11 it's constantly changing. We've seen crazy -- I want to
12 say really crazy nail care services where they put little
13 fish in your pedicure and they're eating up your dead
14 skin. I mean that's the kind of stuff we're seeing here.

15 And then we're seeing new products emerging
16 from -- in this industry all the time. And one of the
17 things that we raise is an example with the gel polishes.
18 This is the new fad. You know, you put gel polishes on.
19 It's not like -- supposedly it's not like artificial
20 nails, but it stays on your nails much longer than the
21 regular manicure and pedicure does.

22 However, you know, they're really claiming this
23 is the safer way, because it's really applied just like
24 nail polishes, but we're concerned because there's
25 methacrylates in there. And then after you apply it on,

1 you stick your hand under a UV light to have it really
2 set. And to take it off, you really have to put on so
3 much acetone, about 15 minutes. So you really wonder what
4 false sense of security they're giving to the consumers
5 and the workers, in terms of creating these.

6 And we're always trying to catch up with this
7 industry and trying to -- the proof of burden really falls
8 on the government and on researchers to really prove that
9 they're unsafe.

10 In terms of the regrettable substitutes, this is
11 something that we're also struggling with. And I bring up
12 triphenyl phosphate as something that people are saying is
13 a substitute for dibutyl phthalates.

14 I'm not as familiar with this, but they're saying
15 that there's an increase in some of the products. It's
16 concentration in the products that may indicate that it's
17 being used in place of DBP. There's probably more
18 research in that area, but we're constantly facing this
19 issue.

20 --o0o--

21 DR. QUACH: In terms of the research challenges,
22 I note that there are challenges, but I have to say that
23 it's pretty rewarding working with this population, in
24 terms of sort of their motivation. You know, it started
25 out really hard. It's an intense amount of work that goes

1 into building the relationships, because you really don't
2 just look at this as an immigrant worker population, but
3 also the fact that it's the small business sector. And
4 there's certain things that you really have to consider,
5 like the small profit margin, the language barriers, the
6 cultural issues, and the risks that you're really posing
7 when you go in and try to work with them. They're always
8 feeling that it's a threat to their livelihood.

9 I think the owner and worker dynamics is a big
10 issue. And then we've seen a high turnover of workers in
11 salon businesses, which I think, you know, with the
12 economy, this is just something that happens, but that
13 means retraining a lot of the workers and owners whenever
14 we do this education. And we -- I want to note, because I
15 think this is relevant, it's a distrust of government,
16 whether it's because of their own personal experiences in
17 their homeland or because of their own interactions with
18 inspectors.

19 I want to say that nail salon workers they
20 haven't had the most positive experiences with inspectors
21 coming from the Board of Barbering and Cosmetology, so
22 there's going to be a fear. If you're considering using
23 this -- working with this population to do biomonitoring,
24 you know, you're going to have to address the issue that
25 government isn't the first group that they may go to and

1 trust. And then I think the issues around low literacy,
2 especially in chemicals, is really big.

3 --o0o--

4 DR. QUACH: In terms of research opportunities, I
5 think raising awareness with this workforce has been
6 something that's very empowering for them. Biomonitoring,
7 I think, is -- can provide a lot of insights. I think in
8 the case of occupational, it's really interesting, in that
9 there's been studies out there where you can go in and
10 measure the phthalates in the urine samples, the
11 metabolites in the urine, pre-workshift and at the end of
12 the workshift and subtract the two, and to really isolate
13 what they're being exposed to when they're working.

14 And I think that gives you a little bit more
15 insight into the products and such, and the sources of the
16 exposure, which when you do with the general population it
17 may be a little bit harder. And then when you have sort
18 of the occupational exposure, and then with survey data,
19 you might be able to isolate some of the products. It
20 gives you a little bit more, even though it's not ideal,
21 than if you were going to go in and do it with the general
22 consumer population.

23 And then I think that the effective communication
24 is something I want to emphasize. If you can engage the
25 workforce into this issue, I think that you really can

1 affect change both at the individual as well as sort of
2 the consumer and the policy level.

3 --o0o--

4 DR. QUACH: I think that's all I have for the
5 slides.

6 (Applause.)

7 CHAIRPERSON LUDERER: Thank you very much. That
8 was a really interesting presentation. And highlighting
9 the nail salons is a really great case example.

10 So we have now about ten minutes again for
11 clarifying questions.

12 Dr. Cranor, and then Dr. Bradman.

13 PANEL MEMBER CRANOR: Sorry. Carl Cranor. A
14 quick question, you did a cancer study. You thought the
15 latency period hadn't run. How long was your cancer study
16 from exposure to a study?

17 DR. QUACH: I think because a lot of the workers
18 entered into the workforce about 1990 and 2000. And with
19 the California Cancer Registry, we only had data from 1988
20 to about 2005, you can see that's a pretty narrow field.
21 So a lot of times the latency was about ten years or so.

22 PANEL MEMBER CRANOR: Okay. Thank you.

23 CHAIRPERSON LUDERER: Dr. Bradman.

24 PANEL MEMBER BRADMAN: Again, I thought also that
25 that was an excellent presentation. And I really learned

1 a lot today, so don't be nervous.

2 (Laughter.)

3 PANEL MEMBER BRADMAN: I actually had a question
4 about this cancer risk as well. Was that -- this was an
5 epidemiologic analysis?

6 DR. QUACH: Um-hmm.

7 PANEL MEMBER BRADMAN: But if you look at some of
8 the things you've measured, and you do it on a risk
9 assessment basis, you know, what are the risks based on
10 those measurements? Would they suggest an increased risk
11 for cancer or --

12 DR. QUACH: So if I had my perfect study, you
13 mean, and then I was able to measure some of the
14 exposures, I think that has always been a problem, because
15 if you look at the exposure and the latency period, you
16 would have to follow them over long periods of time.

17 What we did in that study was more of a secondary
18 analysis. And we took, in terms of the fact that they
19 were licensed by the Board of Cosmetology and they're
20 relicensed, so looking at sort of their exposure period
21 based on tenure of license year, it's kind of difficult.

22 PANEL MEMBER BRADMAN: But I mean a little bit
23 more -- there it goes. Just more purely on a risk
24 assessment basis. In other words, if you looked at the
25 exposures, you look at the potency of the -- you know, the

1 slopes for those chemicals, if they're available, do the
2 risks come out as high on a toxicological basis?

3 DR. QUACH: And I have to say I'm not a
4 toxicologist, so I wouldn't be able to answer that. But
5 what we've been really concerned about is the timing of
6 the exposure and also that a lot of the exposures do
7 affect the endocrine system. So if you are looking at
8 things like breast cancer, I think it's very relevant.

9 PANEL MEMBER BRADMAN: Yeah.

10 CHAIRPERSON LUDERER: Dr. McKone.

11 DR. QUACH: Before we start, can I just go back
12 to that one more time? I think a lot of times people are
13 looking at like how much someone is exposed to at that
14 time, and measuring it that way. The concern with this
15 workforce isn't just about the level of exposure, but how
16 long they're being exposed to. And so even this whole
17 idea about, oh, but it's low level, which is what we're
18 constantly being told too, I really challenge, because we
19 don't know the health effects, and there hasn't been a lot
20 of research in this area.

21 PANEL MEMBER CRANOR: Well, this is a comment,
22 and maybe it leads to our further discussions, but on one
23 of your slides you talked about methyl methacrylate. And
24 this is a very interesting chemical, because, you know, a
25 lot of this is focused on cancer risk. And one of the

1 things that we miss in looking at some of these things is
2 if you become sensitized, you can -- most people are not
3 sensitized to methyl methacrylate. But if you do become
4 sensitized, it is used in making poly -- what is it? --
5 polymethyl methacrylate. And you go, well, what is that?

6 That's used in fillings. It's used in artificial
7 lenses. It's used in replacement hip joints. It's used
8 as a grout in surgery. Anyone who is sensitized to PMMA,
9 or methyl methacrylate, then is cursed with having a
10 lifetime of problems in going into any kind of surgery,
11 because they're going to reject it.

12 And, to me, I know cancer is important, but think
13 about what a burden that is to a population that suddenly
14 will be sort of prohibited or will be really restricted in
15 what kind of surgery they can go through. And our whole
16 surgery -- you know, our whole system now is built on
17 these replacement parts, and they're all using PMMA as a
18 fairly standard compound.

19 I learned about this at UCSF. I mean, they're
20 doing some work there on sensitization. And I raise it
21 because there are simple techniques to look at who's being
22 sensitized. Not just if they're getting precursors to
23 cancer, but this is -- for some chemicals that are widely
24 used in our -- in surgery and medicine and our economy
25 that we're all going to be exposed to, that's a real

1 burden. That's a disease burden we haven't thought about
2 is the sensitization. And you can test for it, you know,
3 with fairly simple skin tests.

4 DR. QUACH: I think the issue of methyl
5 methacrylate has been something that we're struggling with
6 all the time. So it goes back to the fact that MMA has
7 been banned in its 100 percent monomer form. And so when
8 we found out about this, and we really encouraged the
9 workers to really avoid this product, the substitute is an
10 EMA. But what's concerned is once it is used together, so
11 the liquid and powder form that's used to create an
12 artificial nail bed, and it's filed down, what we're
13 measuring in the salons is that the monomer is still
14 there, and so workers are still exposed.

15 And I agree with you that not just looking at
16 cancer and even reproductive effects, but some of the
17 other respiratory and sensitization and skin irritations
18 are really major concerns and can put someone out of work,
19 as well as expose their families when they bring home a
20 lot of the work on their clothes and such. So there's
21 concern not just for the workers, but those that they --
22 that live with them as well.

23 CHAIRPERSON LUDERER: Dr. Quint.

24 PANEL MEMBER QUINT: Julia Quint.

25 Yes, I just want to emphasize that, because

1 I've -- I am actually on the Research Advisory Committee
2 for the Nail Salon Collaborative and have looked at a lot
3 of material safety data sheets for nail polishes and other
4 products. And I think asthma is a real concern in this
5 industry, both the artificial nails. Now, they're going
6 to the gel nails. And the gel nails have polymethyl
7 methacrylate as a major ingredient.

8 And so there's a real potential, I think as you
9 mentioned, for asthma. And it's one of the areas that we
10 don't -- there are no animal tests for asthmagens. So,
11 you know, we don't have the list that we would have for
12 other chemicals. And when I alluded earlier to, you know,
13 health effects that we're not looking at now in the
14 Biomonitoring Program, I had asthma in mind, because it's
15 also the focus of our Safer Consumer Product regulation.
16 One of the chemicals as isocyanates.

17 So it's -- yeah, I think it's really -- and those
18 workers are the ones that define health of a worker,
19 because they leave the workforce. I mean, if you can't
20 breathe, you're not going to stay. So you aren't
21 capturing all the people who are potentially affected.

22 And even though we have surveillance for asthma,
23 we know from the Occupational Health Surveillance Program
24 that we are picking up only a fraction of what's out
25 there.

1 DR. QUACH: And couple that with a population
2 that has limited access to health care and such, I think
3 that really the underreporting of asthma is a major issue,
4 when you're looking at studies focusing on asthma.

5 CHAIRPERSON LUDERER: I just want to add one
6 quick thing, and then -- it's just that also when someone
7 becomes sensitized to a chemical, then very low levels of
8 exposure are a problem. And that's, you know, something
9 that you alluded to, that the levels of exposure may not
10 necessarily be low in the sense of that's safe.

11 Dr. Cranor.

12 PANEL MEMBER CRANOR: Yeah. Thank you. Carl
13 Cranor again.

14 The comments here about asthma suggest an
15 interesting line of research that you might want to
16 consider. The researchers, the immunological researchers
17 say at Cornell and related people that work with them, are
18 suggesting now that like neurological problems, immune
19 system problems -- immune systems have one chance to get
20 it right. And if they get it wrong at the outset of life,
21 it can skew their immune reactions for a lifetime.

22 And you might want to, to the extent you can,
23 consider pregnant women that work with these things and
24 what happens to their children if we have an immunological
25 effect here that then gets passed to the developing child,

1 then that child, as it becomes an adult, has a lifetime of
2 problems, perhaps.

3 DR. QUACH: I think that -- I mean, thank you for
4 the suggestions. I mean, there are many things I want to
5 do when it comes to research with this population. And,
6 you know, pregnant women is definitely one group.

7 It's been interesting in another study that I
8 have, where we actually took the licensee file and linked
9 it to the birth records of those born in California, just
10 to look at what we can in terms of the birth records. We
11 already saw some interesting finding. It's under review
12 right now, so I don't want to talk to much about our
13 findings, but it's been interesting that there is
14 something there.

15 I think it would be great to do a follow-up study
16 with pregnant women and watch -- and really observe them
17 during -- through the pregnancy and to really enroll their
18 children into a study.

19 PANEL MEMBER CRANOR: Apart from the immune
20 system, of course, the developing child is the most
21 vulnerable of the species typically. And you may see a
22 whole batch of problems.

23 But I mention the immune system, because the
24 researchers that focus on that suggest there are two organ
25 systems that have one chance to get it right, so that they

1 function more or less normally over a lifetime, and the
2 immune system is one of them. The neurological is the
3 other.

4 DR. QUACH: Thank you.

5 CHAIRPERSON LUDERER: Okay. Do we have maybe a
6 couple minutes if there are any questions from the
7 audience?

8 Yes.

9 MS. DUNN: You can stay there. This is from
10 Trudy Fisher.

11 MS. FISHER: Hi. Trudy Fisher. Yes, I just
12 wanted to address the notion of low level exposure. I
13 think one of the hazards, in addition to problems with
14 people who have been affected leaving the workforce, is
15 also problems with people leaving the workplace, because
16 the more you come and go, I think the body really has
17 trouble. It's not just sensitization, but it tries to
18 accommodate, just like the eyes get used to low level
19 light after awhile, or the nose gets used to an extreme
20 odor or something, after awhile the body doesn't really
21 know how to regulate itself.

22 And so I think there -- this side of cancer,
23 there are some other things to raise as a specter, a sore
24 throat that doesn't resolve. I know you mentioned skin
25 irritation. But some of the factors, like specific types

1 of sleep disruptions, or cognitive problems that maybe
2 they can't articulate, but if you were asking the, you
3 know, pointed questions about it or something, I think
4 there's definitely a trend with this kind of ongoing low
5 level exposure.

6 DR. QUACH: I just want to say that I think
7 that's very relevant to this population in terms of nail
8 care services, it's really a seasonal thing. You get your
9 toes done when the weather is nice and hot, and, you know,
10 you wear open-toed shoes. So there is a lot that we see
11 in terms of workers really working through the summer,
12 through fall, and then the winter going into another line
13 of work, because there is no business, so the issue about
14 really changing work environment.

15 And then if a certain area is going down, what
16 they do is they move salons. So they're constantly trying
17 to adjust to different work environments.

18 CHAIRPERSON LUDERER: All right. Thank you very
19 much.

20 All right. Now, we will have our last, but
21 certainly not least, presentation.

22 MS. HOOVER: I think we have a break.

23 CHAIRPERSON LUDERER: Oh, do we have a break?

24 Oh, we do have a break. Okay. Sorry. I just
25 keep jumping ahead. I really want to hear that last

1 presentation.

2 (Laughter.)

3 CHAIRPERSON LUDERER: So we have a 15-minute
4 break. So it's about a quarter after 2:00, so we'll
5 reconvene at 2:30.

6 (Off record: 2:14 PM)

7 (Thereupon a recess was taken.)

8 (On record: 2:30 PM)

9 CHAIRPERSON LUDERER: Everyone, please take your
10 seats. We're going to get started again here.

11 We're starting again.

12 Okay. Welcome back, everyone. Now, we're going
13 to move on to our third presentation of the afternoon.
14 And it's a great pleasure to introduce Dr. Meredith
15 Williams, who joined the Department of Toxic Substances
16 Control in December 2013 as the Deputy Director overseeing
17 implementation of California's new Safer Consumer Products
18 Regulations.

19 Dr. Williams has expertise in research and
20 development, product management, and operations for
21 Fortune 500 technology, consumer product, and chemical
22 companies including Applied Materials and 3M.

23 After nearly 20 years of corporate work, she
24 applied her skills in several positions over seven years
25 at the San Francisco Estuary Institute, SFEI, a nationally

1 recognized center in support of aquatic resource
2 management. She directed the environmental data,
3 information, and technology team in developing systems and
4 online tools to facilitate effective data-driven decision
5 making.

6 In 2013, she served as SFEI's Interim Executive
7 Director. Dr. Williams strives for collaborative
8 solutions to complex problems, and has a track record of
9 championing interdisciplinary approaches to the
10 application of science to policy and decision making.

11 So I'd like to welcome Dr. Williams who's going
12 to tell us about informing safer consumer products
13 decisions through biomonitoring.

14 Dr. Williams.

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

17 DR. WILLIAMS: Thank you. And I wanted to say
18 that I am a big fan of the gratuitous picture.

19 (Laughter.)

20 DR. WILLIAMS: And as I was taking BART over this
21 morning, I was actually wishing for a picture of Sam
22 walking off into the fog talking about the beginning of a
23 beautiful friendship, because I think we've talked a lot
24 about the collaboration overlap today, and I really hope
25 that this is the beginning of a conversation about how

1 biomonitoring links to the Safer Consumer Products
2 Program, and how we can support one another. So I really
3 appreciate the opportunity to be here and speak about that
4 a bit.

5 --o0o--

6 DR. WILLIAMS: So today I'm going to do a little
7 bit to reiterate the four bullets that Claudia had on her
8 slides. She had the four bullets that outline what our
9 process looks like in terms of how the regulations work.
10 I'm not going to spend too much time on that I hope, but
11 just give you a sense of how things fit together.

12 But the important part of the process that I'm
13 going to talk about today is the product selection
14 process, and what that means, and how we do it, and how we
15 make our decisions. And then hopefully just set us up for
16 a great conversation about the linkages between
17 biomonitoring and other regulatory programs and where we
18 go from here.

19 --o0o--

20 DR. WILLIAMS: So with that said, I'm going to
21 talk about the regulations themselves. As I said, there
22 are four bullets. The first bullet is the chemical
23 selection, the identification of the chemicals upon which
24 we make our decisions.

25 Those chemicals are -- there's a universe of

1 chemicals out there, and we've chosen a subset of those
2 chemicals based on authoritative lists. I'll talk about
3 that in a second. And then we choose our products. And
4 we don't just choose consumer products. We have to
5 associate those products with chemicals, so it's a product
6 chemical combination. And from that universe of consumer
7 products, which we all know is rather daunting, we will
8 select priority products, and, in fact, have already begun
9 that process.

10 And then once we've done that, we ask the
11 manufacturers or the importers or the retailers to
12 consider alternatives, to really ask that fundamental
13 question behind these -- this whole set of regulations,
14 which is, is it necessary to use the chemical that's in
15 this product to make the product meet the consumer need?

16 And after they decide what alternative they would
17 like to pursue, we then finally make a regulatory
18 decisions and give them a regulatory response.

19 --o0o--

20 DR. WILLIAMS: So as I mentioned, I'm going to
21 start -- spend a little time on the candidate chemicals.
22 We have approximately 1,100 -- it's 1,100 chemicals on our
23 list. Our list is a list of lists, which does include the
24 Biomonitoring California priority chemicals list. It also
25 includes the chemicals on the fourth -- I'm not going to

1 get it right. The CDC Fourth National Report on Human
2 Environmental -- Exposure to Environmental Chemicals, I
3 believe it's called. I'm not going to get it right. But
4 we do have lists that are very relevant to the
5 biomonitoring group and to NHANES.

6 And, of course, there are other restrictions that
7 we must be consumer products, which means no pesticides,
8 no prescription drugs. It is a dynamic list. Obviously,
9 as those lists get updated, our lists get updated. So
10 that's how the chemicals list works.

11 --o0o--

12 DR. WILLIAMS: We then associate those chemicals,
13 select chemicals with consumer products, and then we ask
14 for an alternative analysis from the responsible entities,
15 the manufacturers, or other responsible entities. And in
16 that process, they do look and propose safer alternatives
17 hopefully. And again, we're really trying to avoid
18 regrettable substitutes, unintended consequences. This is
19 the fundamental shift that's associated with these
20 regulations is to get away from that paradigm.

21 And so the alternative analysis and all the
22 documentation that goes into that really should not just
23 be informing our decision, but also the manufacturer's
24 decision about how they're going to move forward. And we
25 always talk about asking them to show their work.

1 We really want to know what their thinking is,
2 what their rationale is, how they're justifying their
3 decisions. So that's what goes into the alternatives
4 analysis. And there's a great body of knowledge around
5 this particular area, the alternative assessment community
6 of knowledge, and we are relying heavily on that.

7 --o0o--

8 DR. WILLIAMS: Lastly, we have the regulatory
9 response. I've listed them there. You have them in front
10 of you. And I will say, I'm not going to go through them,
11 but it's just one indicator among many of the flexibility
12 and the breadth of this set of regulations.

13 We have to make a lot of decisions. We have a
14 lot of choices. And although you will hear repeatedly in
15 the popular press that we are about to ban certain things,
16 it's a pretty deliberative process, and banning is just
17 one of many options that we have in terms of how we
18 respond to the proposed alternatives in the chemicals that
19 we name.

20 --o0o--

21 DR. WILLIAMS: So I'm going to dig now into our
22 priority products selection process --

23 --o0o--

24 DR. WILLIAMS: -- and talk about it.

25 There are two fundamental principles that are

1 called out in the regulations. One is the potential
2 exposure to the candidate chemical in the product of
3 interest, and the second is the potential for that to have
4 a significant widespread and adverse impact. And that's
5 it. I mean, that's really what the regulations tell us.

6 Now, there are a lot of factors that go into
7 making that determination.

8 --o0o--

9 DR. WILLIAMS: I've listed all of those out. I'm
10 not going to walk through these, but again, the idea is
11 just the breadth of things that we need to and can
12 consider as we make our decisions. This is a lifecycle
13 based approach, which is we will consider materials
14 extraction, all the way to end of life and disposal of the
15 product, reuse, recycling, et cetera.

16 And the other reason I share this list with you
17 is because you will recognize so many of the factors that
18 are listed here, because they are very similar to the
19 kinds of considerations that you wrestle with in terms of
20 determining the direction of biomonitoring for the State.

21 --o0o--

22 DR. WILLIAMS: So that should be -- and the other
23 thing I want to mention here is that there's -- because
24 biomonitoring has been wrestling with these factors much
25 longer than we have, it does allow us to learn and not

1 have to reinvent the wheel. So we greatly appreciate
2 that.

3 With that said, we did announce three initial
4 priority products. These are the proposed products that
5 we'll begin to put into regulation this fall. The first
6 is paint strippers and varnish removers with methylene
7 chloride. The second is the children's foam padded
8 sleeping products, which includes things like bassinet
9 foam or nap mats, and other products where infants or
10 children can be in close contact and inhale dust or have
11 dermal exposure to the Tris when used normally.

12 And then the third one is the spray polyurethane
13 foam system with unreacted diisocyanates. And as you --
14 as we've already touched on, these are things -- these are
15 chemicals that are already -- under discussion. I was
16 very happy to hear the discussion about sensitization in
17 general. Respiratory sensitization is a big concern with
18 the diisocyanate -- with the -- sorry, with the
19 diisocyanates. And so that possibility of that first
20 exposure not being problematic, but of course repeated
21 exposure resulting in occupational asthma is very
22 problematic.

23 And the other thing I'll mention here is people
24 think consumer products, but one thing that we're really
25 trying to bear in mind is the sensitive subpopulations.

1 And again, this list represents a focus on a couple
2 different sensitive subpopulations, children obviously,
3 but the worker communities that may be in smaller
4 businesses that are not falling under OSHA, and are using
5 spray polyurethane foams perhaps without the recommended
6 personal protective equipment.

7 So that was our first set of chemical -- or
8 product chemical combinations that we've proposed.

9 --o0o--

10 DR. WILLIAMS: We have had a number of workshops
11 to discuss whether or not our understanding of the product
12 chemical combination is accurate, whether, for instance,
13 which isocyanates are in these formulations and how
14 they're used, to what extent the different -- what kind of
15 differences there are in the product types that are on the
16 market.

17 And so we've gone through a process. We're now
18 trying to digest everything that we've learned through
19 that process, so that we can make our final determination
20 about exactly what we want to regulate, and we'll go to
21 rule-making later this fall.

22 --o0o--

23 DR. WILLIAMS: So the other product selection
24 work that we're doing is to start to set ourselves up for
25 the next three years of product selections. And we are --

1 the regulations call for us to publish a three-year
2 workplan of not product -- not individual product chemical
3 combinations, but broader product categories. And we'll
4 be putting that out in the fall. We expect to have a
5 draft available for public review toward the end of the
6 summer.

7 --o0o--

8 DR. WILLIAMS: So the big -- one of the big
9 challenges for us is with that workplan is what is a
10 product category? And I've illustrated here the global
11 product classification taxonomy, which gives you a sense
12 of how coarsely or finely you can distinguish a product
13 category.

14 And so what we want to do, our goal for the
15 workplan, is really to identify product categories that
16 are broad enough to give us the flexibility to look at a
17 range of products and product chemical combinations, but
18 narrow enough to be meaningful, meaningful to industry, so
19 they know what our thinking is and what our priorities
20 are, and meaningful in terms of being able to reach out
21 and collect the right information and make our final
22 determinations of the next rounds of priority products.
23 So that's what we're working on now.

24 --o0o--

25 DR. WILLIAMS: So you'll see in a couple slides

1 relying on federal and State efforts around consumer
2 products, learning from the work that's already going on,
3 trying to draft, whenever possible, and looking for those
4 places where the regulatory authority might not be
5 adequate in terms of providing the protection we think
6 that consumers need.

7 --o0o--

8 DR. WILLIAMS: As I mentioned, we do have a Green
9 Ribbon Science Panel. They meet a few times a year, and
10 they've really helped us with our thinking as we have
11 gotten this program up and running.

12 --o0o--

13 DR. WILLIAMS: So this is still early days for
14 us. And we're learning as we go, as that -- I think the
15 cliché is building the -- or riding on the railroad as
16 your building -- putting the tracks down. And so we're
17 off and running, but we are keenly aware of some of the
18 challenges we are already facing and we anticipate facing.

19 So, for instance, data gaps and emerging science,
20 how do we keep up with it? How do we stay on top of
21 things? We're going to have to make decisions about
22 alternatives, and we're not going to have all the
23 toxicology in the world that everybody would like.

24 So how do we do -- use things like ToxCast to
25 really inform our decisions around the alternatives?

1 Product ingredient verification. We do have some ability
2 to do data call-ins, but this is a challenge. We've
3 learned a lot even with the initial three products about
4 what is and is not in those products. It's been eye
5 opening.

6 And then I mentioned this idea that we want to
7 signal the marketplace, let them know what's coming
8 without setting off false alarms or causing a lot of
9 consternation where it's not needed. And so that's a fine
10 line to walk. And we're learning to walk that line.

11 A lot of people are asking us how are you going
12 to evaluate the alternatives. And as I said, it's going
13 to be quite a process to come up with that. And I think
14 one of the things when it comes to alternative analysis
15 evaluation, Debbie Rafael is one -- I think it's she that
16 coined the phrase, "Is it necessary?", which has kind of
17 been the mantra of the program. And then last week, she
18 came up with the idea of, "Is it worth it"?

19 So we're going to get these alternatives proposed
20 to us. And then really part of our decision is, is it
21 worth it? But what does that look like, how do we
22 translate that, and make sure that it's based on robust
23 science is going to be a challenge for us.

24 And then lastly how do we have the impact that we
25 want to have? You know, Dr. Petreas talked about making a

1 difference. Claudia echoed that. And we often say in the
2 program, we don't have to have -- we don't have to rely on
3 the STs, not the worst, not the most, not the least. And
4 therefore, people are always going to question why we've
5 made the decisions we've had. But fundamentally, we want
6 to have good bang for the buck in terms of the decisions
7 we make. And how to do that is a challenge for us. And
8 we'll continue to give that a lot of thought.

9 --o0o--

10 DR. WILLIAMS: Obviously, there are a lot of
11 linkages between these two programs, and they do
12 complement each other. I think we're -- over the -- I've
13 learned a lot today, and it gives me a lot of ideas of how
14 we can begin to interact.

15 --o0o--

16 DR. WILLIAMS: But I'm more interested in hearing
17 from the Panel about what they think those opportunities
18 are, and I'm looking forward to that discussion.

19 Some of these things are already in the
20 wheelhouse of Biomonitoring California staff. The
21 teachers studies, the firefighters studies, those are
22 sensitive subpopulations. And knowing how to focus on
23 those and get the data needed to really assess what's
24 impacting those communities is something that's well
25 established.

1 the funding issue is critical. And if biomonitoring gets
2 to the point where it's able to do kind of those ambient
3 studies of the full population, I think that would be
4 tremendously beneficial to our program, as we look at the
5 overall California population and what chemicals they're
6 getting exposed to, and are showing up in the
7 biomonitoring, so I will continue to carry the torch for
8 that -- for the full funding, so that the Program can do
9 even more than it's already managing to do.

10 And then I'm hoping that you can provide some
11 links for us to other biomonitoring work around the world
12 and share that information with us.

13 So that's the food for thought, and I would just
14 like to spend more time listening than talking. So thank
15 you.

16 (Applause.)

17 CHAIRPERSON LUDERER: Okay. Thank you very much,
18 Dr. Williams, for that great overview of the Safer
19 Products and Workplaces Program.

20 And now I'd like to open up for Panel
21 questions -- clarifying questions first and --

22 Go ahead, Dr. McKone.

23 PANEL MEMBER MCKONE: There. You need to make
24 noise to get it working.

25 That's very interesting. So one of the thoughts

1 I had as you were talking that ties into Claudia's
2 presentation this morning, I mean one of the things that I
3 was thinking about that we've thought about for 20 years
4 is the way we set up regulations doesn't understand the
5 world the way it works, right?

6 We like to do like air, you know, water, consumer
7 products. And yet, I think from like a public health
8 perspective, what health scientists care about is okay
9 we're making something, whether it's a flame retardant or
10 a pesticide, how much do we make and how much gets into
11 people? And then you have to figure out all the pathways.

12 And unfortunately, that tends to go like air to
13 water, water to people, or it goes water to air, air to
14 people or -- I mean, it's very complicated. And when you
15 were talking, I realized that at least in some of the
16 green chemistry it's not focused on just the indoor
17 environment or -- I mean, you've established some of these
18 links across it. You really have to look at the quantity,
19 how it's used, and then how it eventually gets delivered
20 to people, regardless of, you know, you don't come in
21 wearing a hat of water, air, consumer products.

22 So I don't know how -- I guess the question is
23 how to really take this capability -- at least in the
24 green chemistry, which is more chemical focused, it forces
25 you to think about the whole picture. But I think a lot

1 of the regulatory environment hasn't caught up. And the
2 regulations are still very much focused on air sources or
3 water sources. So anyway, just a comment and a question.

4 DR. WILLIAMS: Yeah. Well, I have to say I love
5 that comment and that's one reason I'm really enjoying the
6 program is because I like the holistic -- you know, having
7 that holistic approach, being able to think on that level.
8 I was happy to hear from -- given my past experience, I
9 was thrilled to hear someone talk about what's getting --
10 not being treated by the POTWs and asking the questions
11 about what's on the 303(d) list and what relationship we
12 have to water, because we're exposing ourselves perhaps
13 through our skin, but then it's running straight out the
14 drain as we take our showers when we apply those personal
15 care products.

16 And so we're thinking about all of those
17 pathways, we're also thinking across the entire lifecycle
18 of the product. And that is very, very different than
19 what you'll see in most other regulatory programs. It's
20 ambitious.

21 CHAIRPERSON LUDERER: Dr. Cranor.

22 PANEL MEMBER CRANOR: Carl Cranor. I wanted -- I
23 want to find out more how the regulatory process works,
24 because I think that's very important. We know from the
25 federal models that if they have to establish an adverse

1 effect, it could take decades before anything happens.
2 And so I'm wondering what -- if you have a product that is
3 of concern, is that do you have to have adverse effects?
4 Do you have to have high levels of exposure? And then
5 what kind of a process do you have to go through to take a
6 regulatory action?

7 You have to issue a rule. How burdensome -- have
8 you -- has anybody thought about how burdensome that can
9 be, and how it can be gamed and things like that?

10 Biomonitoring could help enormously, if chemicals
11 of concern are merely chemicals in people's bodies that
12 one have some suspicion of, then you could do something
13 with that if you have the authority. But if it's, you
14 know, these chemicals are in people's bodies and they
15 cause cancer, that's a much harder point to prove and so
16 forth.

17 So can you say more about the regulatory
18 structure and how it works and how things get fed into it?

19 DR. WILLIAMS: Right. So fundamentally from the
20 product chemical combination, the priority product
21 identification, we will have an Initial Statement of
22 Reasons when we go to submit the regulations. And the
23 regulations will be specific in how they call out the
24 product, describe what that is, and what the chemical is.
25 And for this first round of products, for instance, we

1 developed dossiers or product profiles containing what we
2 consider the best available, publicly available
3 information to document.

4 PANEL MEMBER CRANOR: Document what, adverse
5 effects?

6 DR. WILLIAMS: Adverse effects. The exposure is
7 hard, especially when there are multiple pathways, but we
8 will use market data, in terms of where there are sales of
9 a given product. We will use -- it's going to be a
10 challenge.

11 PANEL MEMBER CRANOR: But just to separate those
12 two, exposure might be easier because you might have
13 evidence of stuff in people's bodies, but adverse effects
14 could be much harder. Which do you have to work with?

15 DR. WILLIAMS: Both.

16 PANEL MEMBER CRANOR: Both.

17 DR. WILLIAMS: But the adverse effects I would --
18 the adverse effects, I would say, if the chemical is on
19 our list, that's the threshold. I mean, it's actually not
20 that high a threshold. There's a reason it's on our list.

21 PANEL MEMBER CRANOR: Does that come from Prop
22 65?

23 DR. WILLIAMS: No, we have 23 lists. Prop 65 is
24 one list. Your priority chemicals is another list. The
25 Water Board's 303(d) list. PBT lists from Europe and

1 Canada.

2 PANEL MEMBER CRANOR: Okay. So you're bringing
3 them in by way of they're on somebody else's list.

4 DR. WILLIAMS: They're on somebody -- somebody
5 else did that heavy lift for us.

6 PANEL MEMBER CRANOR: Okay. So if Prop 65 says
7 it's a reproductive toxicant or carcinogen --

8 DR. WILLIAMS: That's the adverse impact
9 documentation.

10 PANEL MEMBER CRANOR: -- that's all you need to
11 know for adverse effects.

12 DR. WILLIAMS: Nominally, yeah. And then going
13 back to the regulatory response, and this comes down to --
14 this is where I get to reemphasize how far away we are
15 from the regulatory response. So we announced a few
16 products. This fall, we'll start the rule-making process.
17 That could take up to a year, and then begins -- only
18 after the products are adopted in regulation will the
19 manufacturers or the responsible entities be required to
20 tell us they make the product with the chemical, and then
21 begin the alternative analysis process.

22 That alternative, I did not bore you with the
23 details of the alternative analysis process, but it is
24 two -- it's a two round process. They come to us. They
25 tell us how they're going to perform the alternative

1 analysis. They give us a workplan and they tell us what
2 alternatives they think they're going to look at. And we
3 say okay that passes the laugh test, and then they go
4 through another more detailed round.

5 So now we're out another year, and then we make
6 our regulatory response. So I will be quite honest and
7 say we haven't fully laid down the track for that, and
8 that we are going to look at the models from other
9 programs, CARB, other entities, in terms of deciding how
10 best to exercise our response.

11 PANEL MEMBER CRANOR: Okay. Thank you. I hate
12 to, you know, spend time on the law, but it may make your
13 task -- your law may make your task easier or harder. You
14 don't have to show that, say, TDCPP actually causes cancer
15 in this cohort of people.

16 DR. WILLIAMS: No.

17 PANEL MEMBER CRANOR: If it's on Prop 65, then
18 that's good enough.

19 DR. WILLIAMS: Absolutely. Yes.

20 PANEL MEMBER CRANOR: And then you can proceed.
21 That helps.

22 DR. WILLIAMS: Yes.

23 CHAIRPERSON LUDERER: Dr. Quint, did you have
24 a --

25 PANEL MEMBER QUINT: This is Julia Quint. I'm

1 doing more shaking of my head in terms of -- I think you
2 raised a really important question about whether or not
3 you actually have to show harm in people, because --

4 DR. WILLIAMS: Or animals.

5 PANEL MEMBER QUINT: Yeah, but the list actually,
6 you know -- or what -- it's already hazardous. It's
7 assumed to be hazardous or, you know, subject to the
8 regulation, if it's on one of many lists, as Meredith
9 said, and -- because if we are -- it's the potential for
10 harm is what is said over and over again in the
11 regulation, and potential exposure.

12 So you don't have to have, for instance, air
13 monitoring data. Of course, if you have data that helps
14 your case, probably in the regulation, when you start to
15 regulate, but this is a hazard based phenomenon. This is
16 not -- you don't have to show, you know, the risk of
17 cancer, and -- you know, it's at -- people are at high
18 risk. So it's -- and it's very important to keep that in
19 mind. Neither do you have -- I mean, and the alternatives
20 assessment is all about finding something that is less
21 hazardous than the chemical that's on the list.

22 The one thing I think that is important, and
23 where it relates as we get into discussion, is the
24 regrettable substitutes that could be identified as, you
25 know -- in lieu of the chemical on the list. And that's

1 where, I think, a lot of the discussion about how these
2 programs can interact, CARB and the Safer Consumer
3 Products regulation, Safe Cosmetics Act, I think, all of
4 those working together can help to avoid some of these
5 regrettable substitutions.

6 Anyway. So it's more -- not a question, but
7 reemphasizing Meredith's comment.

8 CHAIRPERSON LUDERER: Dr. Bradman.

9 PANEL MEMBER BRADMAN: Okay. I just have a few
10 thoughts, and I don't know if I -- am I supposed to limit
11 my comments now to just this presentation or --

12 CHAIRPERSON LUDERER: No, we can --

13 PANEL MEMBER BRADMAN: Okay. I just think that
14 the -- I mean, the discussion we've had today, this
15 afternoon I think has been really enlightening for
16 everyone, certainly myself, and I suspect the Panel and
17 the audience as well.

18 And I'm trying to think about, you know, what is
19 the big picture message here, and specifically, how does
20 that impact the -- you know, the Biomonitoring Program,
21 and how does it also affect our own discussions and maybe
22 even specific recommendations we might want to make to
23 address some of these things?

24 I think all of us have been aware and concerned
25 about exposures related to consumer products. Certainly,

1 that's been a focus of some of our own research, and it's
2 also a -- many of the different chemical methods we have
3 right now, you know, if not most, focus on measurements of
4 things related to consumer products, certainly the flame
5 retardants we've heard a lot about, phenols, bisphenol A,
6 phthalates, things like that. And so there's really
7 already a priori built into the Biomonitoring Program a
8 clearer interest in consumer products.

9 When we started designating chemicals back in the
10 day, we started with the EPA list, and we developed some
11 priority chemicals. And then we tried to emphasize
12 potential exposures that were unique to California that
13 might warrant special attention, and among those was one
14 reason why we very quickly prioritized the flame
15 retardants.

16 But I'm wondering here if maybe we need to --
17 given the importance of consumer products, maybe we need
18 to kind of step back and evaluate our list of analytical
19 methods, and then our list of chemicals that are on the
20 designated list, and think about whether there's already
21 resources to address questions about exposures to consumer
22 products, and then are there any new classes of exposures
23 that we should be considering? I mean, we've had some
24 excellent presentations today.

25 And if this is going to serve, for example, the

1 Biomonitoring Program, it seems clear that your agency is
2 interested in getting resources from this project, which I
3 think everyone involved in the project would like to
4 provide, both to your agency and the general public and
5 industry, how do we go about, you know, perhaps
6 identifying -- using the capabilities we have now to
7 address some of these questions, and then where do we need
8 new efforts, and are there some obvious classes of
9 consumer products that we need to perhaps extend some
10 chemical methods to, to provide information on?

11 And is there somewhere in that -- in that range
12 of issues, are there specific recommendations that the
13 Panel might want to make around this issue? And I'm not
14 sure what they are at this point.

15 CHAIRPERSON LUDERER: Dr. Quint.

16 PANEL MEMBER QUINT: Julia Quint. I'm hitting
17 this wrong. Okay. Julia Quint.

18 This isn't a specific recommendation, but I think
19 we've identified with two presentations today the
20 importance, and we've discussed it, of respiratory
21 sensitization, and it's not something that pops out of our
22 biomonitoring priorities. And I think it -- who knows if
23 we can biomonitor for, you know, the chemicals that cause
24 respiratory sensitization, but I would like to, you know,
25 raise that as an issue.

1 I mean, I actually have discovered two abstracts
2 where you're biomonitoring -- that are methods to
3 biomonitor for isocyanates. I don't know if they are ones
4 where -- and I don't know if they're sound methods, but
5 they are out there, so we should take a look. And I don't
6 know whether or not we could extend what we're doing to
7 cover new methods like that. I mean, that's one of the
8 questions I have.

9 But I think, you know, when you have -- it's an
10 underserved issue toxicologically, because we don't have
11 animal tests, we don't have lists, the lists are very
12 different that, you know, different countries come up
13 with, because they are criteria based. So there are lots
14 of issues there. So I think, you know, that kind of a
15 discussion, based on what we've heard today, should
16 certainly take place. Whether it comes out as a
17 recommendation, it's definitely food for thought.

18 It's also a big issue in -- you know, the
19 Environmental Health Tracking Program has done a lot with
20 tracking asthma, so asthma is of concern. The chemicals
21 that the isocyanates the diisocyanates that you've raised
22 with a -- in the priority products are a big target for --
23 they're in a lot of products and could contribute to that.

24 So I think that as a health issue or health
25 endpoint is something that we haven't -- you know, we

1 focused on cancer, reproductive toxicity, developmental
2 toxicity. And I think this Program raises that.

3 I think the other thing that the Safer Consumer
4 Products Program has elevated is a need to look -- I mean,
5 you've -- workers are considered a sensitive
6 subpopulation, and I think that's very appropriate. It
7 was something that I really touted in the beginning,
8 because, you know, in terms of the regulations, the
9 chemicals are not regulated to prevent the endpoints that
10 are of concern, cancer, reproductive, toxicity. Dr. Quach
11 mentioned a number of issues, low amounts of a number of
12 chemicals with the same endpoints, you know, not falling
13 beneath the regulation.

14 So I think this Program, you know, is bringing
15 all of these things together. And so it's -- you know, I
16 think discussions about where we go in terms of types of
17 studies we do could certainly show some nexus between the
18 two programs.

19 CHAIRPERSON LUDERER: I thank you very much, Dr.
20 Quint. I see that we, I think, have some public questions
21 or comments. Amy, do we have --

22 MS. DUNN: Just for after when the Panel is
23 assembled.

24 CHAIRPERSON LUDERER: All right. This might be a
25 good time to take the public comments at this point, or --

1 and then also, I thought it might be helpful to actually
2 show some of the questions that I had kind of raised in
3 the introduction for the Panel maybe to think about as we
4 begin the discussion.

5 (Thereupon a discussion occurred off the record.)

6 CHAIRPERSON LUDERER: Can we -- or should I -- I
7 can just read them?

8 MS. HOOVER: Yeah, why don't you -- sorry, that
9 was very loud. This is Sara Hoover again. We had a
10 little technical difficulty getting those slides, but why
11 don't you start with -- I mean, I think that from what was
12 just being said, to me, maybe the last question actually
13 where we were talking about, you know, what are the ways
14 that -- what are the intersections between the programs,
15 and maybe we could hear something about the Safe Cosmetics
16 Act too, is there any interaction there? So maybe talk a
17 little bit -- because that was the direction you guys were
18 already going about the intersections between the
19 programs.

20 CHAIRPERSON LUDERER: Yeah, so I think actually
21 kind of the last two. So one of them is does the Panel
22 have suggestions for how best the Program can collaborate
23 with researchers and other State programs to help identify
24 and assess chemical exposures for consumer products? And
25 then also how could biomonitoring be applied as a tool to

1 contribute to greater chemical safety in cosmetics and
2 other consumer product?

3 And I think that both Dr. Quint and Dr. Bradman
4 were really raising those issues.

5 Dr. Quint, did you have --

6 PANEL MEMBER QUINT: Yeah. This is Julia Quint.

7 I think -- we didn't talk a lot about -- Claudia
8 brought it up. We didn't talk a lot about CARB in this
9 last few minutes. But I think the Air Resources Board has
10 done a lot with consumer products, as Claudia mentioned,
11 including, you know, aside from VOCs, they've actually
12 restricted or banned the use of some of the chlorinated
13 hydrocarbon solvents, TCE, methylene chloride, and Perc in
14 a number of consumer products, which has not been done any
15 place else.

16 And I think they are about maybe -- I think they
17 conduct surveys or have in the past, and I think are
18 continuing to do that. And I think there's somebody from
19 CARB here which we could learn about -- a lot about the
20 surveys that they do, because they identify consumer
21 products, and there are a list of consumer products in
22 various categories, which I think would be extremely
23 helpful for all of us, because that's the missing piece
24 for a lot of this is where are the chemicals.

25 We have the exposure with biomonitoring, but we

1 don't know some of the ways that the exposure is
2 happening. And for everybody else, they have the
3 chemical, but they don't know where the chemical is
4 located. So I think collaboration with CARB and learning
5 from what they do. I know the Green Ribbon Science Panel
6 certainly learned a lot when we were deliberating about
7 the regulation. So anyway, without further ado.

8 CHAIRPERSON LUDERER: Go ahead and please
9 introduce yourself.

10 MR. EDWARDS: Thanks. My name is Dave Edwards,
11 and I work at ARB. And I'm the manager of the Consumer
12 Products Implementation Section, and I'm also coordinating
13 the current survey activities that we're working on.

14 So, first off, just thanks for having this
15 meeting. This has been very interesting. It's my first
16 time to it. The speakers and the discussion have been
17 very interesting overall.

18 So based on a couple of the presentations that
19 we've been hearing this afternoon, I wanted to give a
20 better overview for your information about what our 2013
21 survey is and what kind of data we collect. We've done
22 surveys the past 20 years on various types of consumer
23 products starting in the mid-nineties and going up through
24 some minor ones up in 2010.

25 The one that we're planning for 2013 is going to

1 be much more comprehensive. We regulate about 130
2 categories of consumer products, and this survey is
3 covering 430. And so it's very comprehensive. It goes
4 everywhere from deodorants, hair sprays, lubricants,
5 degreasers, aerosol coatings, adhesives. And the idea is
6 that we want to be able to use this information to inform
7 the upcoming 2016 State implementation plan, which we're
8 looking at probably further VOC reductions across the
9 State, particularly in the South Coast.

10 So some of the highlights of the survey, just to
11 kind of -- as opposed to the past, which is sort of a year
12 snapshot, we're looking at doing a three-year survey of
13 2013, '14, and '15 data to establish trends across all the
14 consumer product categories, those 430 that I mentioned.
15 And this, I think, will be beneficial for, one, our
16 inventory, and also informing the -- our future regulatory
17 actions to look at up and coming types of consumer
18 products.

19 And just to kind of piggyback on a couple of the
20 talks we had, we are -- we have added the product category
21 gel nail polish to our list. That's on our draft list.
22 And another item of interest is pet care products. Those
23 have shown about a 31 percent increase in the last couple
24 of years of use within California and the United States.

25 And as far as the data we collect on these

1 categories, we collect sales data. This year at -- well,
2 at this point, we're looking to do it at the S-K-U, or
3 SKU, level. Those little -- the black bars and the
4 numbers at the bottom. So we'll be able to -- hopefully
5 be able to get some pretty detailed information on
6 different sizes of products and the amounts of those
7 different products that are being sold in California.

8 On top of that, we also collect ingredient
9 information, so all speciated VOCs, exempt and non-exempt,
10 low vapor pressure volatile organic compounds, as well as
11 sort of generic idea -- concepts of color, fragrance,
12 surfactants, and resins. So we're going to be able to get
13 a pretty detailed overview of what's in most of these
14 products as well.

15 As far as availability goes, we do have sort of
16 aggregate data by category posted on our website from past
17 surveys, and we envision that we would be doing the same
18 thing moving forward.

19 So I'd be happy to answer any other questions you
20 might have, but that's sort of a general overview of what
21 the survey will be.

22 CHAIRPERSON LUDERER: Dr. Quint. Thank you very
23 much.

24 PANEL MEMBER QUINT: Thank you. Julia Quint.
25 Can you share the information with other State programs,

1 or is that -- I know, you aggregate data for the website,
2 because part of it -- some of it is confidential. But
3 what is the policy with regard to sharing with other State
4 programs?

5 MR. EDWARDS: I know from a -- just my past
6 position, I was in greenhouse gases. There are
7 memorandums of understanding that we do have between
8 different agencies. That is one possible route to sharing
9 data. And then as far as the other types of sharing, I do
10 know, as long as it's aggregated to some level, and it
11 sort of -- the confidentiality aspect moves -- gets out of
12 the question, then we can share the data a little bit
13 more.

14 For example, in some of the product categories
15 that have hundreds of products in those categories, we're
16 able to aggregate, I think, ingredients and sales in those
17 categories. Whereas, some of the smaller categories we'd
18 combine together.

19 PANEL MEMBER QUINT: And the second question I
20 had is I know you've restricted the use or banned three --
21 you know, the three chemicals that I mentioned, the
22 chlorinated hydrocarbon solvents, in certain -- a lot of
23 categories actually.

24 So how is that decision made? I mean, because
25 that's not based on VOC necessarily, because methylene

1 chloride and Perc are not -- are VOC exempt. So how do
2 you -- how do you decide which, you know, on the toxicity
3 issue, because those were done based on toxicity, as
4 opposed to VOC? I'm just wondering about that, because
5 that's another possible way to interact with your program,
6 I guess.

7 MR. EDWARDS: Okay. Well, I do know that we have
8 a couple contracts with -- or at least one contract for
9 sure with OEHHA to evaluate -- whenever we do like a VOC
10 exemption or we do plan to talk about the toxicity, we
11 have them do exposure assessments and toxicity evaluations
12 for those compounds to ensure that everything is okay and
13 exempting that compound or banning that compound.

14 I'm not 100 percent sure on how the TCE
15 exemptions came to be. That's a little bit before my
16 time.

17 PANEL MEMBER QUINT: Okay. Right. Exactly. The
18 reason I bring it up is because in certain -- you know,
19 when you -- for instance, when you restrict the use or ban
20 methylene chloride in a certain product, then you can have
21 the regrettable substitute of n-methylpyrrolidone, you
22 know, replace it. So I was just wondering how you dealt
23 with those sorts of toxicity issues?

24 But, you know, I mean, it did happen a long time
25 ago with the chlorinated hydrocarbon solvents. I don't

1 know how it happened, but it would be great to see -- you
2 know, if there is a process that we could avoid some of
3 these chemicals that are exempt for VOCs, but then raise
4 toxicity issues, because often those things are separated.

5 In this case, CARB did a great job of closing the
6 door on some of the -- you know, on the methylene chloride
7 and Percs that could be in other products, because now you
8 can't use them in certain categories. So I guess that
9 would be -- to find out more about that would be
10 interesting for this Panel.

11 MR. EDWARDS: Yeah, I can look back into our
12 regulatory record and do a follow-up with maybe Sara and
13 she can disseminate.

14 PANEL MEMBER QUINT: Yeah, that would be
15 interesting. Yeah, that history would be interesting.
16 Thank you.

17 CHAIRPERSON LUDERER: Dr. Alexeeff.

18 DIRECTOR ALEXEEFF: Hi. In the list of chemical
19 ingredients that you mentioned, you mentioned like VOCs
20 and things like that, you didn't mention toxic air
21 contaminants. Is that also something that you would ask
22 them for, what toxic air contaminants are in their
23 products?

24 MR. EDWARDS: Yes. It's included in the -- so we
25 regulatorily define what a volatile organic compound is,

1 and what a low vapor pressure volatile organic compound
2 is. And so the way that we're going out right now is that
3 we're requiring speciation for both of those categories,
4 minus generic color, fragrance, surfactants, and resins.

5 So every other organic compound that is in the
6 product will be speciated. So if it doesn't fall into a
7 VOC category, it would likely fall into that LVP category,
8 which is above a certain vapor pressure and boiling point.

9 From a sort of -- from the industry perspective,
10 they would rather we have another cutoff at another
11 arbitrary higher number, so they would not have to
12 speciate all of the organic compounds. But the idea is
13 that we do want to get that speciation information, which
14 we -- and that is something new that we've never attempted
15 to get in the past.

16 DIRECTOR ALEXEEFF: Thank you.

17 CHAIRPERSON LUDERER: Do we have any other
18 questions, comments from Panel members?

19 We can take some of the public comments at this
20 point, if not, or if we have any responses from any of our
21 speakers, if they wanted to say something.

22 Of course.

23 DR. DiBARTOLOMEIS: Michael DiBartolomeis. I
24 heard somebody on the Panel wonder about the link between
25 Cosmetics Act disclosure list or whatever and maybe

1 Biomonitoring. It wasn't quite asked that way, but I know
2 something a little bit about the cosmetic ingredients.

3 So when I first took over the spot of -- for the
4 Program lead for this Biomonitoring Program, I asked that
5 question myself, how many chemicals are frequently
6 reported as being in content of cosmetic products are on
7 our priority chemical list for biomonitoring?

8 I didn't really -- I guess I was also interested
9 specifically on what we had methods for. And the overlap
10 is very small, quite honestly. Phthalates are one
11 overlap, metals, some of the metals.

12 The number one reported chemical, of course,
13 we've talked about over -- I think you probably know what
14 it is, is titanium dioxide. It's in just about
15 everything. I don't even know if it can be biomonitored
16 for, but it's obviously not -- I don't even know if it's
17 on our designated list, but in any case. So that would be
18 clearly one that if we wanted to look at any cosmetic
19 product specifically for a chemical that you know is going
20 to be in them, that would be one.

21 The class of chemicals that I think is the most
22 glaring omission are VOCs. And I think that's also going
23 to be true for all consumer products as we kind of go
24 forward. VOCs maybe has a very specific definition, but
25 anything that's volatile that you can either look at a

1 parent compound or metabolites in specimens would be
2 something I think important to look at. There are quite a
3 few issues with doing that.

4 And then, you know, something like formaldehyde,
5 I don't think there -- you can't just go in and do a blood
6 study or urine. You need to probably do some kind of
7 protein binding thing or whatever. But again, you know,
8 formaldehyde we've talked about it's a crucially horrible
9 chemical. So, you know -- so when we're talking about
10 these things, I would love to hear a little bit more about
11 what we would do -- you know, what should we do about
12 those chemicals that we don't have a method for or it's
13 not on our list, but it would be key for informing whether
14 it's cosmetics or other consumer products or even some of
15 the environmental interactions for biomonitoring.

16 So that's all I wanted to say, but I have done
17 that exercise, and there isn't a great overlap
18 unfortunately. We'd have to do some work.

19 CHAIRPERSON LUDERER: Dr. Bradman.

20 PANEL MEMBER BRADMAN: Yeah. I think that was,
21 you know, the point I was trying to get at in my earlier
22 comments, in that maybe we need to systematically review
23 our current lists, our current analytical capability, and
24 then our -- you know, the things that are being worked on
25 as potential, you know, things right now, and then see how

1 that matches up with some list of priority consumer
2 product chemicals.

3 And I'm not sure how to systematically generate
4 that list. I mean, you brought up some good points,
5 and -- but maybe there's a way where we can look at
6 existing lists, and perhaps from that do some screens to
7 try to nail down, you know, what set we might want to
8 prioritize for method development. And that's where I
9 take it back to, you know, how can the Panel make concrete
10 suggestions on say specific classes to prioritize?

11 And maybe that is a -- could be a recommendation
12 right there is to ask, you know, the Biomonitoring staff
13 to perhaps begin to take that universe of chemicals and
14 systemize it, so we can start reviewing it.

15 I just echo your comments about VOCs. I think
16 that's an excellent point. Certainly my experience in
17 monitoring for cleaning products and formaldehyde and
18 other VOCs in child care, there's a whole, you know, range
19 of exposures going on out there that I think are
20 important.

21 DR. WILLIAMS: This is Meredith Williams. And
22 one thing -- I think one opportunity to start that process
23 would be to look at the workplans. So the way the
24 workplan is likely to evolve is that we will publish these
25 product categories. When we do that, we actually do have

1 to say something about chemicals or classes of chemicals
2 or functional use categories, adhesives, surfactants,
3 those kinds of things that are causing our concern and
4 that led us to include the product category. And that can
5 be -- and then we'll likely go out and conduct workshops
6 around those, try and dig into those a little bit more.
7 And somewhere in that process, I think there will be a
8 natural place where we can have that conversation around
9 at least those groups of chemicals that are associated
10 with the workplan. So that may be one opportunity.

11 Can I, while I'm standing up here, throw out my
12 other?

13 CHAIRPERSON LUDERER: (Nods head.)

14 DR. WILLIAMS: So I had a bullet on one of my
15 slides about complementary studies, and I know that
16 Heather Stapleton I believe came to talk to you last year
17 about dust studies. And that's not something that you can
18 undertake, but it may be something that DTSC could look
19 into or consider. And so the idea that those dust studies
20 could inform our decisions and inform your priorities is
21 something that I think we would be very interested in
22 exploring, especially given the non-targeted testing
23 that's about to come online.

24 CHAIRPERSON LUDERER: I know Dr. Cranor had a
25 question. I was thinking it might useful also if we could

1 put that list up again that we went through at the
2 beginning and -- because I think that highlighted some
3 other chemicals that we have already designated and/or
4 prioritized that are in -- actually in cosmetics.

5 Dr. Cranor, while we're getting that up.

6 PANEL MEMBER CRANOR: I wanted to follow up Asa's
7 comment. It seems to me that this is a place where the
8 staffs of the various agencies could get together and have
9 some conversations. The limits of the lab, I take it, are
10 going to be difficult to overcome at least initially. So
11 there would be a question of what kinds of things that can
12 be detected, and those -- that creates a possible list,
13 but then also conversations with agencies that
14 biomonitoring can assist would feed into information that
15 the Committee could designate as priority chemicals, we
16 can choose to do that if the labs can detect it.

17 So finding the net overlap between what the labs
18 can do and what our priority concerns for the other
19 agencies at the staff level could inform the Science
20 Advisory Committee, and then we could just designate some
21 things because they're going to be helpful to California
22 in terms of addressing hazardous exposures, if we haven't
23 already identified those, it would seem to me.

24 CHAIRPERSON LUDERER: Dr. Quint.

25 PANEL MEMBER QUINT: This is Julia Quint.

1 You know, along those lines, solvents or the
2 volatiles are a big class of chemicals that have been
3 regulated over time. You know, we mentioned three of
4 them, TCE, Perc, and methylene chloride, and
5 n-methylpyrrolidone. I mean solvents are a huge class.
6 Aside from the laboratory challenges of whether or not we
7 have methodologies, is the collection of the samples are a
8 problem as well, because, you know, a lot of them are best
9 measured in exhaled air, which is, you know, not blood or
10 urine.

11 And the occupational health, I mean, that's
12 one -- biological exposure indices have been done or by --
13 in the occupational health arena for a long time. And
14 solvents have been a huge part of that. So they have
15 methodologies for doing it, but the timing of the
16 exposures is really important.

17 If you notice in NHANES, methylene chloride is
18 one of the measured chemicals, but, you know, the levels
19 are extremely low. And it probably has to do with the
20 fact that -- of the way the sample was collected. So it's
21 a huge challenge for biomonitoring, I think, in terms of
22 solvents. You'd have to look at each one, but it's -- you
23 know, and it relates to the toxicokinetics and when these
24 things go into the body and then when they come out. And
25 you have to be there to capture it, otherwise it will look

1 like a non-detect.

2 So it is a problem. It's not something that, you
3 know, we can't possibly overcome. But it's unfortunate,
4 because, you know, we know that there is exposure to a lot
5 of these chemicals just from their very nature, but
6 proving that, in terms of biological monitoring, may be
7 a -- you know, more of a challenge than some of the other
8 chemicals.

9 But I mentioned this morning, I mean, isocyanates
10 is, you know, another -- if you're talking about asthma,
11 there are, as I said, two published -- I saw two abstracts
12 where there is a method. We could look at that and see.
13 And so there may be other chemicals.

14 And in terms of the cosmetics, I think even in
15 nail polishes, from the MSDS's that I've looked at, there
16 are numerous chemicals that are on our biomonitoring list
17 in nail polishes, bisphenol A is one, TXIB, some of the
18 newer chemicals that are substituting out for the
19 phthalates. I mean, chemicals that I don't -- the
20 function of those chemicals in the product is unknown,
21 which is another way the safer consumer products would
22 come in, because the first question is what is the
23 function of the chemical? So I'm not sure what the
24 function is. I know they're not in all nail polishes.
25 Benzophenone-3 is -- I mean, how much is in there varies.

1 But all of these chemicals are in nail polishes. And so
2 they're not on the Prop 65 list, but they are in, you
3 know, a number of cosmetics and they do correlate well
4 with what's on our list.

5 So we could -- you know, that's another possible
6 target.

7 CHAIRPERSON LUDERER: Dr. Quintana and then Dr.
8 McKone.

9 PANEL MEMBER QUINTANA: Hi. Jenny Quintana.

10 I had a question, I guess, to those in the
11 audience and to the Panel, which is I believe one of your
12 questions to us was how can biological monitoring help in
13 regulation of consumer products?

14 And it seemed to me that these intervention
15 studies like we've seen today, the Hermosa Study that you
16 mentioned, Dr. Bradman, where you show that by behavioral
17 change, by avoiding these products, you measurably reduce
18 body burden, I think, gives ammunition or help to people
19 trying to regulate these products. Because I think people
20 might say why are you picking on our industry, because
21 many other places have the same chemicals, but if you can
22 have these very targeted studies that show, yes, they are
23 coming from these products, yes, you can make a
24 difference, it seems to me that's a fairly powerful
25 message. But I was interested in people's comments on

1 that.

2 CHAIRPERSON LUDERER: Dr. McKone

3 PANEL MEMBER MCKONE: Well, my comment -- wow,
4 sorry. My comment is not on that, but it was back to the
5 issue of the persistence of the biomarker or the existence
6 of a marker. And, you know, I think we should think about
7 the importance of, I guess, it's the unknown unknowns or
8 something. You know what we worry about is something that
9 could be very harmful and there's no marker. You just
10 don't know if it happened. There's no way of knowing.

11 And I'll give you an example of this. It's like
12 if you get exposed to x-rays, right, or gamma rays,
13 historically, I mean, you wouldn't know that, right? You
14 could walk in front of an x-ray machine, you walk away,
15 and there isn't something in your blood that would say --
16 well, there is now, but it used to be there was no
17 chemical signal, but you could get extreme amount of
18 damage without a really easy way to monitor it.

19 Another -- at the other end of the spectrum might
20 be like dioxins or PCBs which might persist in the blood
21 lipids for 20 years, right? So if you get exposed, you
22 can see it.

23 Now, in the case of radiation, what people
24 learned to do is not look for the -- you know, you can't
25 find x-rays. You know, they don't attach to anything.

1 They just go through you, do all the damage, but they're
2 gone. But x-rays leave heritable genetic damage, right,
3 and then we learned to look for that.

4 And this is something Larry Needham brought up,
5 right, way, way back when we were talking about the need
6 for finding markers for things that could be quite harmful
7 but don't stay long in the body, like very volatile
8 compounds, that you're going to breathe them out within
9 minutes after you're exposed. So unless you get
10 somebody's breath instantly, you don't know what happened,
11 right? This is like you get a lot of damage, no evidence.

12 And so I think we have to continuously sort of
13 look for -- you know, define this spectrum of things
14 that are important to us. I think we know a lot of those.
15 Unfortunately, you know, we tend to go under the lamp
16 post. We know the chemicals that persist and are harmful
17 and we keep looking for those, but we really have to drill
18 into methods for finding the chemicals that are
19 potentially quite harmful, but don't leave a trace, or
20 don't leave a good trail, or leave a very confusing trail,
21 because they don't last in the body long enough to be
22 seen.

23 CHAIRPERSON LUDERER: Dr. Quint.

24 PANEL MEMBER QUINT: I wanted to comment on the
25 last question -- the previous question about how do we,

1 you know, show this great -- the changes. You know,
2 worker groups -- occupational health studies are one way
3 to do that, because you know, and I think Dr. Quach
4 mentioned, with the phthalates, you know, showing -- doing
5 a measurement before, and then after the person has worked
6 with it, to rule out the non-occupational exposures
7 because you know what the person -- presumably, you know
8 what the person is exposed to at work.

9 And I think that that is one population that you
10 could possibly more define what the exposures are. And if
11 you saw differences, you could pinpoint it to the exposure
12 to the chemical, as opposed to -- you know, you do have to
13 factor in the non -- the phthalates you put in the
14 cosmetics from the phthalates that are being -- you're
15 exposed to at work, but there is a way to do it. And
16 that's the way the biological exposure indices have been
17 done over time, because, you know, they've -- occupational
18 health has always done biological monitoring. They just
19 haven't tied it to chronic conditions, but -- and that's
20 because exposures happen both by inhalation and skin
21 exposure. So you've used biological monitoring to look at
22 the total exposure, and they've always had to factor out
23 the non-occupational exposures from the occupational ones.

24 But you definitely can tie it more directly to
25 the product or to the chemical that the person is being

1 exposed to. So that's a group that we could make that
2 correlation with.

3 DR. QUACH: So I just wanted to comment. I'm not
4 sure what my point is in saying this, but I'll just kind
5 of think out loud. For those that know me, know that in
6 working with nail salons, I've been hot and cold on this
7 biomonitoring thing.

8 You know, as someone who started in the
9 biomonitoring world and helping to plan some of these
10 efforts, you know, I was really struck by the science,
11 but, you know, knowing about the limitations with the lab.
12 However, when it came to the nail salon workers, there was
13 a lot of concerns. I think Julia really pinpointed about
14 the collection -- complexities of collection.

15 We actually work with Myrto's lab in trying to
16 collect some of the urine samples. You know, this is one
17 of the first kind of like a feasibility effort just to see
18 if the workers were even going to give us urine samples.
19 And we were really pleased that I think 90 percent of them
20 in the small pilot study that I did actually gave us the
21 urine samples. But, you know, my staff were like it was
22 really hard to collect, and we only collected it at the
23 end of the workshift. So I don't know how it's going to
24 be when you're going to collect it before the workshift
25 and you're trying to get in in between customers.

1 So those concerns make me wonder does that really
2 set you up for really detecting something that's not going
3 to be very -- something that's going to be worthwhile in
4 terms of communicating to them, because you've already set
5 it up so they can.

6 And then issues around how you communicate it
7 back. One of my biggest concerns has been that we do the
8 biomonitoring and we find that the levels which we keep
9 saying are really high of phthalates in workers aren't
10 really that high. And I think some of our preliminary
11 results really show a range in that. And so what do we
12 communicate back?

13 You know, your levels of phthalates aren't that
14 high, so, you know, don't worry about anything, when we
15 know that there are regrettable substitutes. So I'm
16 constantly struggling with these issues when thinking
17 about biomonitoring and what I'm going to communicate back
18 to the workers who are really looking to me for some of
19 the answers and really trying to encourage them for these
20 exchanges.

21 You know, if the results aren't what we think
22 it's going to be, how do we communicate that, because we
23 know that these things aren't -- are harmful to them? And
24 then if the data doesn't show because of the limitations
25 in how we collect, or the laboratory detection limits and

1 such, what are we going to say to them, like, don't worry
2 about it?

3 And we're struggling with that, even with the
4 personal air monitoring. So I just wanted to maybe say
5 some of those as -- as some of the concerns where -- I've
6 been hot and cold. There are days when I'm like I'm
7 putting in a grant and I did put in a grant on phthalates
8 and biomonitoring. And then when they asked me to
9 resubmit, I'm like I don't know. I'm getting a little
10 nervous in terms of my accountability to the worker
11 population that I serve.

12 CHAIRPERSON LUDERER: Thank you very much.

13 We have another comment.

14 DEPUTY ATTORNEY GENERAL POLSKY: Yeah. I just
15 wanted to describe a biomonitoring study that I would love
16 at some point to see. And this picks up on a few threads
17 that have been mentioned.

18 One is this issue that Dr. McKone raised of
19 trying to find markers for transient exposures that may be
20 important, but don't leave a very clear trace or not one
21 we know how to find. And something Dr. Quintana said
22 about focused biomonitoring studies, including of worker
23 populations. And then what Dr. DiBartolomeis was saying
24 about the interaction between the Safe Cosmetics Program
25 in particular and the universe of cosmetics products with

1 biomonitoring.

2 One of the big regulatory gaps, of which I'm sure
3 many people are aware, is around the area of fragrances.
4 It's an area of great consumer ignorance, because they're
5 not required to be disclosed on product labels under the
6 federal Food, Drug and Cosmetic Act. I don't think
7 there's been, you know, uniform reporting to DPH on
8 fragrance ingredients probably in California.

9 And we were part of a very interesting, not
10 concluded, investigation with multiple California agencies
11 trying to get a handle on a very specific and somewhat
12 surprising fragrance problem. And this was not the use of
13 fragrance in say cleaning products, which is an issue, or
14 the use of perfumes, which is an issue. You know,
15 possibly almost life-long exposure to something on your
16 biggest organ, your know almost nothing about what's in
17 it.

18 This was an interesting, and I hate to say
19 possibly emerging issue if you read marketing
20 publications, which is the emergence of scent branding as
21 a marketing frontier. And that is a store that is not
22 primarily a purveyor of perfumes deciding that because
23 olfactory memory is so very strong, it's in our reptilian
24 brain, when you walk by their store, they want you to be
25 able to know that you're walking by their store and walk

1 right in. And when you go inside, the air is super
2 saturated with a distinctive corporate fragrance.

3 And we encountered a situation where a particular
4 chain had made scent marketing a very, very strong
5 frontier. And there were lots of workers who had an array
6 of extremely unpleasant, mostly transient symptoms. If
7 they went home at 5:00 o'clock feeling crummy, sore
8 throat, nauseated, dizzy, headachy, a little bit
9 cognitively foggy, maybe by 9:00 o'clock at night, they'd
10 feel eh. If they went home on Friday feeling that way, by
11 Monday they'd feel really good, but then they'd feel
12 terrible by the end of their shift.

13 And these workers were required not only to work
14 in this high scented environment, but to manual reapply
15 scent to merchandise at regular intervals. This is part
16 of their job description, okay? This company is an
17 employer of thousands and thousands of low wage workers in
18 America.

19 This is fascinating to me on many levels. It was
20 fascinating in part because no agency had a regulatory
21 hook on this. We don't know what's in the product. The
22 workers are scared to do anything voluntarily. And then
23 they're really -- this is a very unregulated space.

24 And so I know Dr. Bradman was talking about are
25 all the chemicals on your list that should be. I don't

1 know. I think this is also sort of a role for
2 non-targeted screening, because probably there are lots of
3 things used in fragrances that we're not even aware of.

4 But I do think that multi-agency discussion
5 around the issue of fragrance use, perhaps starting with
6 something like an occupational population, might be an
7 interesting kind of study.

8 Thanks.

9 CHAIRPERSON LUDERER: Yeah. Thank you. And
10 actually, I was going to -- we were talking about trying
11 to get the list up and I don't think we were able to. But
12 one of the classes that is -- of chemicals that's
13 designated -- that the SGP designated was the synthetic
14 polycyclic musks and related class of fragrance chemicals.

15 So I think that's the only group of fragrance --
16 or two groups of fragrance chemicals that are currently on
17 the designated list. But that is something that the
18 Scientific Guidance Panel has definitely, you know,
19 thought about, and it would be, you know, interesting to
20 see if there are other classes of fragrance chemicals that
21 could perhaps be brought to the Guidance Panel that we
22 could also consider.

23 And also, that group is not one that we have
24 recommended as a priority. And that might be something,
25 you know, that we might want to consider discussing that

1 again at an upcoming meeting.

2 And I also wanted to just, since we don't have
3 that list in front of us, to mention some other classes
4 that are currently on the list that are also in personal
5 care products and cosmetics, the cyclosiloxanes, where a
6 group that -- it was one of the earlier groups of
7 chemicals that we were concerned about. They're in
8 personal care products, household products, dry-cleaning.
9 They're being used as green dry-cleaning agents.

10 And also, the -- a lot of the antimicrobials that
11 are in personal care products, parabens, triclosan,
12 triclocarban, those are also already on the list. And so
13 those might be things that we, as a Panel, might want to
14 discuss and consider kind of in view of all the -- what
15 we've been talking about today. So just throw that out.

16 Dr. DiBartolomeis.

17 DR. DiBARTOLOMEIS: Just so you have a little bit
18 more information if you're going to have a discussion
19 about some of those things you mentioned. Remember, the
20 Cosmetics Act requires that they are either known or
21 suspected carcinogens or reproductive toxicants.

22 Endocrine disruption is not a basis for listing
23 as a reproductive or developmental toxicant. So one of
24 the glaring omissions on the other side of the fence is
25 they're not reporting parabens or some of these other

1 endocrine disrupting chemicals.

2 So that's another gap. To anybody who is out
3 there listening about maybe doing some legislation in the
4 future to add -- you know, to bone up on the Cosmetics
5 Act, that would be something you would want to do, but
6 that -- so that's another kind of gap that we have to deal
7 with.

8 CHAIRPERSON LUDERER: We have a stack of public
9 comments, so I think that we should go ahead and do that
10 now, and then we can have some more discussion afterwards.

11 So we have Mr. Ernest Pacheco from CWA.

12 MR. PACHECO: Hello. This is mostly more of a
13 comment and a little bit of a question. When I found out
14 last week from Nancy at Breast Cancer Fund that you guys
15 had lost or didn't get your budget from the State, I was
16 really disappointed.

17 Dollar for dollar, what comes out of the
18 Biomonitoring Program, has got to be one of the best deals
19 that the State could get. It's really useful information
20 for all the reasons that have been talked about today.

21 I came here to kind of just listen and learn.
22 And CWA represents a lot of different kind of workers. We
23 represent a lot of telecom workers, industrial workers,
24 furniture manufacturer, air flight attendants, whatnot.
25 And we're very interested in trying to get a biomonitoring

1 program for our air flight attendants for a really nasty
2 neurotoxin TCP, tricresyl phosphate, which our people have
3 been battling with their employers for years about.

4 Also, while -- and we really appreciate the DTSC
5 SCP process that's going on with the priority products.
6 Our workers are working with toxic fire retardants that
7 are not chosen. The one that is chosen is entirely valid.
8 And we would love to have a monitoring program for our
9 people about what toxic fire retardants they're being
10 exposed to in the manufacturing plants for mattresses and
11 whatnot.

12 I don't know what we can do with your guy's now
13 limited budget, but I'm interested in figuring out what,
14 if anything, we can moving forward.

15 Thank you.

16 CHAIRPERSON LUDERER: Thank you very much.

17 Nancy Buermeyer from the Breast Cancer Fund.

18 MS. BUERMEYER: Thanks very much. Nancy
19 Buermeyer of the Breast Cancer Fund.

20 This has been an incredible afternoon of learning
21 and getting excited and getting mad and wanting to do more
22 and wondering where any of us are going to have the time
23 to do more, but thank you to the Panel, and thank you to
24 the team that put the Panel together and brought us all
25 here.

1 The Breast Cancer Fund has been incredibly
2 involved in all of these programs. We helped create the
3 Biomonitoring Program. We were a part of the team that
4 created the Cosmetics Program. We were very involved in
5 the Safer Consumer Products Program. So we have a big
6 interest in all of this work. We also have a very big
7 interest and have talked, probably more at the federal
8 level than the State level at this point, about how do you
9 integrate the very complex system of chemical regulation?

10 I've done a lot of that on the federal level.
11 I've never seen it presented quite as well as Claudia did
12 today on the State level, but are very interested in
13 helping to facilitate, any way we can, bringing those
14 programs together and helping to augment each other and
15 have that kind of synergetic effect.

16 One resource -- and to finish that thought. I
17 really want us, as an organization, with the numerous
18 other advocacy groups that we work with, to help you and
19 all of the agencies tell the story beyond the State
20 government, to really be able to communicate what these
21 programs mean, how they can work together, to a number of
22 audiences: The environmental health audience for sure,
23 and the policymakers, it be the State legislature in an
24 effort to replace that funding, and at the national level,
25 because, you know, a chunk of the money that goes to a

1 number of these programs, certainly the Biomonitoring
2 Program, has come from the CDC. And it's not necessarily
3 easy to get the CDC enough money to be able to give it to
4 the State.

5 So we want to help sort of pull all those pieces
6 together and tell a cohesive -- an integrated story around
7 why these things are so important.

8 A couple of more specific comments I just wanted
9 to make quickly. In thinking about how we collect use
10 data and how we understand how chemicals are used in
11 different consumer products, I would encourage us not only
12 to use the vast resources of the State -- and I just
13 learned about the ARC, ACR?

14 CHAIRPERSON LUDERER: ARB.

15 MS. BUERMEYER: ARB. And I'm going to track him
16 down, because that stuff is awesome.

17 (Laughter.)

18 MS. BUERMEYER: But we can look beyond the
19 borders of California. The State of Washington has a
20 program that requires manufacturers to report to the State
21 ingredients in kids products, so they can printout an
22 entire list of phthalates used in kids products. And
23 that's the kind of information that might be -- bring in
24 and sort of augment what we're doing here. And there are
25 other states that are doing programs that may be helpful

1 in this process.

2 In terms of the fragrance chemicals and chemicals
3 generally, I think when we spoke about this at a previous
4 meeting, we talked about some specific phthalates, but
5 phthalates as a class per se had not been designated,
6 which gives the Program a little less flexibility in terms
7 of being able to shift as the market shifts, and we've
8 certainly seen market shifts. And it would be great to be
9 able to look at different kinds of phthalates as we can
10 develop those methodologies.

11 And then last, I want to actually comment on
12 something that we talked about awhile ago, which is
13 results return. And as Dr. Bradman said, there's been a
14 lot of pushback about giving results back to communities.
15 And we've had this conversation with the CDC, and a number
16 of other folks. And the two issues are resources, which
17 is a very real one, and then this concept that communities
18 can't handle the information, because we can't give them a
19 definitive answer about what it means.

20 So I hope that the experience that the California
21 Biomonitoring Program has had can be integrated into some
22 kind of a publication to try to set aside at least that
23 latter concern about the fact that communities can't
24 handle it. I think it's a very paternalistic approach to
25 working with communities on these issues, and it's an

1 issue we fought hard for to require the reporting in the
2 California Program.

3 So I hope that the Program will look at how do we
4 take that experience in what we've learned and put that
5 into the scientific literature, so that we can have stuff
6 in hand to go to other programs with.

7 So thank you all, as always, for the great work
8 that you do. And I look forward to continuing to learn
9 more and working with folks on the Panel, and, you know,
10 moving this stuff forward and trying to get you guys the
11 resources and credit that you deserve for the great work
12 that you do.

13 Thank you.

14 CHAIRPERSON LUDERER: Thank you very much. Our
15 next comment is from Veena Singla, NRDC.

16 DR. SINGLA: Thank you. Veena Singla with the
17 Natural Resources Defense Council. I wanted to echo that
18 this has been a very interesting and informative
19 discussion, and it's been great to learn about the
20 different programs and the many different possible
21 collaborations and synergies that could be possible.

22 One area that I think was not covered this
23 afternoon was possible program collaborations in the area
24 of pesticides, and how the Biomonitoring Program could
25 support more information about pesticide exposures and

1 inform policy regulation there. So I wanted to note
2 that's an area to think more about and possibly discuss at
3 a later meeting.

4 And I think Dr. Quach's last comments in terms of
5 what -- you know, what do these results mean for workers
6 and what can we really say when there's regrettable
7 substitutions, even though their exposure is to certain
8 classes maybe lower, points to the fact that, you know,
9 fundamentally consumers can't clean or shop their way out
10 of this problem, and workers can't either.

11 So, you know, what we really need is a
12 fundamental paradigm shift in terms of using inherently
13 hazardous chemicals and products. And that hopefully with
14 the Safer Consumer Products regulations and some of these
15 program collaborations that that's what we're going to be
16 moving more towards.

17 Thanks.

18 CHAIRPERSON LUDERER: Actually, could I ask you a
19 quick clarifying question?

20 DR. SINGLA: Um-hmm.

21 CHAIRPERSON LUDERER: When you were talking about
22 pesticides, were you specifically thinking about
23 pesticides in consumer products or pesticides in general
24 also as occupational?

25 DR. SINGLA: I was talking about pesticides in

1 general.

2 CHAIRPERSON LUDERER: All right. The next public
3 comment is from Trudy Fisher.

4 MS. FISHER: Hi. Trudy Fisher. I just wanted to
5 thank everybody, Breast Cancer Fund, NRDC, Science
6 Guidance Panel, everyone with OEHHA and the Biomonitoring
7 project for all your hard work. This is a project so dear
8 to my heart. It means a lot to me.

9 And before I say anything else, I just wanted to
10 say fabric softeners. I think of all the consumer
11 products, they're probably one of the least necessary and
12 most hazardous products around.

13 But as I just wanted to let you know, you know,
14 20 years ago, whenever it was, the product -- one of the
15 chemical cocktail products that I was exposed to at work
16 through the ventilation system was actually hexamethylene
17 diisocyanate, at least that was one of the material safety
18 data sheets that my employer gave me after the fact.

19 So just a little bit of insight, because there's
20 so little understanding of it and so on. In the course of
21 the seven years I was working in the building, I and most
22 of my colleagues lost our sense of smell, probably from
23 breathing those chemicals.

24 And, of course, after I left the building and
25 detoxified, my sense of smell normalized. But as you

1 probably know, often people who've become overreactive,
2 sensitized to chemicals, and so on, gain an ability to
3 smell chemicals at very small amounts, very small. I mean
4 I could smell mercaptan in a gas leak when PG&E couldn't
5 get a reading on it in a building.

6 So I just want to urge you guys in areas where
7 literature is very limited, there can be understanding
8 gained through anecdotal, you know, understanding, and so
9 on, from people who've been through it.

10 So thanks for all your help.

11 CHAIRPERSON LUDERER: Thank you. David -- the
12 last commenter is David Edwards. I know that you already
13 spoke. Did you have any additional comments?

14 MR. EDWARDS: (Shakes head.)

15 CHAIRPERSON LUDERER: Okay. Great. Thank you.

16 All right. Do we have any additional discussion
17 and comments from the Panel or from any of our speakers
18 today?

19 Sara.

20 MS. HOOVER: Yes. Sara Hoover, OEHHA. I just
21 wanted to circle back to what's on our list, what's not on
22 our list. I really liked Asa's idea of let's take a
23 systematic look of what's on or off.

24 Just a clarification. For the designated
25 chemical list, we have many VOCs on the designated

1 chemical list, because those were captured under CDC.

2 And I think one thing I wanted to raise in terms
3 of intersection was a very interesting discussion at the
4 GRSP, the Green Ribbon Science Panel, when there was a
5 discussion of the product categories. And then there was
6 a subsection of that where the different Panel members
7 talked about what are some priority chemicals and priority
8 products that might be of interest going forward.

9 And I was really struck -- I was working with
10 Meredith preparing for this, and I looked back at these
11 detailed notes, and so many of them that people raised are
12 on our list already. So we've already captured them. So,
13 for example, the non- -- the non-halogenated aromatic
14 phosphates like triphenyl phosphate, tricresyl phosphate,
15 that's on our list. We don't have methods for that as
16 yet. Triclosan was raised again as an important
17 consideration. Lead-containing products were still
18 considered very important. PCBs in pigments. Apparently,
19 there's still some PCBs out there, that was raised. We
20 don't have PCBs listed as a class.

21 You know, so again there's that limitation. I
22 think that was a good point to pick up other things that
23 we don't have listed as a class, like phthalates, PFCs,
24 those sorts of things that are getting substituted.

25 Also, plasticizers, you know, a functional group.

1 Functional -- various functional groups were raised like
2 plasticizers, adhesives, that sort of thing. And then the
3 other -- another thing that was mentioned was epoxy-based
4 food packaging and other epoxy-based plastics, and -- for
5 example, we have BADGE and BFDGE on our list.

6 So I think actually there is quite a lot of
7 opportunity for -- already actually looking for linkages
8 between the Safer Consumer Products going forward and what
9 we're already -- what we've already picked out as
10 important emerging chemicals, and again, the gap in the,
11 you know, resource issue, and looking at new methods is
12 difficult.

13 And the other thing, when Thu was coming, we had
14 a discussion, and I, again, raised the same issue about
15 okay we know about the toxic trio, but what about what's
16 coming in behind. And so I think that would be a very
17 interesting place to look at non-targeted screening, you
18 know, to -- or semi-targeted screening. As Jianwen likes
19 to say, it's not completely non-targeted, but looking for
20 certain types of chemicals and seeing what's coming in
21 behind some of these known toxicants.

22 So I think there's many different opportunities.
23 And I liked Asa's concept. And maybe you can have a
24 little bit of discussion about some specific directions.
25 Like you gave us a specific direction to go and

1 systematically look at our lists. So we can do that, and
2 we can talk about ways to do that.

3 But other ideas -- besides VOCs, we've heard VOCs
4 as an important class to consider, you know, going forward
5 with regard to consumer products and personal care
6 products. But are there other things we're missing? You
7 know, just thinking about are there other product
8 categories, are there other functional uses? We've done
9 some functional use categories on our list, like flame
10 retardants. Are there other functional use categories we
11 should be looking at related to consumer products or any
12 other types of chemicals that people are aware of, or are
13 concerned about, or just anything, you know, that's out
14 there?

15 I named a few that came up in the GRSP, but we've
16 covered those. So that was kind of my idea for you in the
17 next little while to think about any specific
18 recommendations you might have about either collaborations
19 or chemicals that we might want to go forth and look at.

20 CHAIRPERSON LUDERER: Dr. Quint.

21 PANEL MEMBER QUINT: I have so much trouble with
22 this thing. Okay. It's on. Julia Quint.

23 This isn't a class of chemicals to recommend, but
24 I think something that we do in the Biomonitoring Program
25 that could be really of use to certainly the SCP program

1 is, you know, looking at the emerging chemicals, because
2 what -- in the SCP Program, I mean, it's very possible
3 that people will offer as alternatives some chemicals that
4 are not on the list. As I said before, that could be
5 regrettable substitutions.

6 And with this Program, we've, you know, looked --
7 tried to keep track of what's emerging and list those in
8 classes. And the way I see that working with SCP is those
9 could be -- you can't tell people they're not on a list,
10 so they can't be candidate chemicals if they're not on a
11 list, or COCs, but you could say that these were not --
12 are not considered safer alternatives as you've done with
13 the n-methylpyrrolidone for the priority product of the
14 paint thinners -- paint removers.

15 So I think that that would be really interesting,
16 so that we could -- it's not -- the non-targeted is
17 important as well, but there are some things that we know
18 right now are suspect chemicals, and we've already
19 identified those. And I think exchanging that information
20 would be really important.

21 And that also applies to CARB to be aware of some
22 of these chemicals. They do take a look at when they're
23 exempting VOCs, and -- you know, they do have OEHHA look
24 at them, but I think also to -- being anticipatory of some
25 of these classes, where, you know, they haven't made

1 lists, they won't be regulated for a while, but to be
2 avoided, I think, would save us all a lot of headache.

3 DR. WILLIAMS: So that was one point that excited
4 me when I was preparing for this talk was the fact that
5 you do look at chemicals of emerging concern. You're kind
6 of ahead of the curve. And I did want to point out that
7 there is a nomination process in our regulations. So
8 although we use the authoritative lists as our default,
9 people can nominate chemicals to add to the list based on
10 emerging concerns. So I did want to make sure people were
11 aware of that.

12 CHAIRPERSON LUDERER: Dr. Quintana.

13 PANEL MEMBER QUINTANA: Hi. There's a paper that
14 came out recently in *Environmental Health Perspectives*
15 called *New Exposure Biomarkers as Tools for Breast Cancer*
16 *Epidemiology, Biomonitoring, and Prevention: A Systematic*
17 *Approach Based on Animal Evidence*. And they have tables
18 and tables of chemicals in there based on animal data.

19 And I looked at it briefly. It seemed like we
20 were already covering many of them, but I guess, since you
21 asked for recommendations, I would recommend that you go
22 through this paper, and review the evidence, and see if
23 there are consumer products or, in general, other
24 categories in this paper which seems to be a quite
25 extensive review. The lead author is Ruthann Rudel.

1 CHAIRPERSON LUDERER: We've heard quite a bit
2 this afternoon I think already about the fragrance
3 chemicals. And another -- and you were sort of talking
4 about classes of uses, another one to think about might be
5 air fresheners, which basically consist of fragrance
6 chemicals largely. And that was -- I think that ties in
7 with the idea of the scent marking. I know that's not
8 exactly what you called it, but I that's basically what it
9 is. So that might be something to pursue.

10 Dr. Quint.

11 PANEL MEMBER QUINT: Julia Quint. I raise
12 isocyanates. I don't know if I need to say it more
13 formally, but I think that that would be a good group, and
14 also the acrylics. The method -- the methyl methacrylate
15 and all of those. They're a large group and cause asthma
16 in all forms. And what applies to the polymers for the
17 acrylics also applies to the isocyanates as well.

18 CHAIRPERSON LUDERER: Dr. McKone.

19 PANEL MEMBER MCKONE: A slightly different topic,
20 but still, you know, in the -- sort of the interest of
21 brainstorming. You know, we talked about -- you know, we
22 tend to be somewhat focused on chemical markers in blood
23 and not affect markers. And one of the things we haven't
24 talked about is -- and again, it might be outside of our
25 realm, but a lot of the fragrances and the chemicals --

1 you know, we talked about this a bit in the nail polish,
2 but in these scent marking chemicals. I just looked it
3 up. It's fascinating. I mean, there's whole companies --
4 this is a big business, right, and thousands of companies
5 are purchasing scent markers.

6 (Laughter.)

7 PANEL MEMBER MCKONE: But I know of enough people
8 who are really chemical sensitive. And, you know, what
9 you -- it's hard to find something in their blood, but you
10 can test them for sensitivity. And there are --
11 allergists now have panels of hundreds of chemicals that
12 they can -- you know, they -- it's a bit painful, but they
13 put all these chemicals on your back and they can measure
14 sensitivity to a broad range of chemicals.

15 And I'm just wondering if that isn't an
16 indication that somebody is -- you know, again, it's not a
17 direct marker. It's an effect marker, but it relates to
18 somebody who's been pushed over the edge. And, you know,
19 just a thought about, is this something we should be
20 looking at, because I think we're going to have a very
21 difficult time finding the people who have been affected
22 or are being exposed to low levels of chemicals that are
23 actually potentially harmful to them because of their --
24 they've been exposed to so many of these, they get pushed
25 over the -- their immune system gets overwhelmed.

1 So, you know, just a future topic of thinking
2 about how we might look at markers for very low levels,
3 where we can't find the chemicals in blood or breath, but
4 we could find them by some other mechanism.

5 CHAIRPERSON LUDERER: Laurel.

6 DR. PLUMMER: So another group of chemicals that
7 we've talked about benzophenone-3 is a member of. And
8 it's actually -- in addition to being used in sunscreens,
9 which is an obvious use, it's actually limited to being
10 only, I think, between like six and ten percent of the
11 formulation.

12 So if you look at a sunscreen label, you'll see
13 quite a few other UV stabilizers, UV filters that are
14 used. And some recent research we've done in preparation
15 for the benzophenone-3 FOX paper led us to some really
16 interesting evidence about use in plastics. And this
17 applies to consumer products in a couple of ways. It's
18 added directly to products in some cases. It's added to
19 packaging to prevent degradation of the packaging itself,
20 but also the contents of the packaging.

21 And so there has -- there's, you know, continuous
22 research going on about is it leaching, you know, into the
23 product, is it because it's in the product because it was
24 added, you know, trying to figure out the source of
25 exposure there.

1 So I think -- and it's also been found in
2 environmental samples, water, things like that, too. So
3 that might be something of interest to the group.

4 CHAIRPERSON LUDERER: Thank you.

5 Any other comments, thoughts, from Panel or the
6 public, or any of our speakers this afternoon?

7 Did you want us to go back to any of those
8 questions?

9 MS. HOOVER: (Shakes head.)

10 CHAIRPERSON LUDERER: Okay. I just saw a raised
11 hand.

12 Jianwen. Dr. She.

13 DR. SHE: Just one comment for Dr. Quach's
14 concern about today's method is it sensitive enough? As
15 you can see, we did this HERMOSA Study, which included
16 phthalates.

17 And then in the hair salon, you talk about DBP,
18 dibutyl phthalate, this is in occupation populations. Our
19 method is designed for general populations, so you do not
20 need to concern we cannot see before the workshift or
21 after the workshift. So I think this part is we are very
22 proud. And then we always compare with the CDC. We can
23 reach the very, very low level. You do not need to worry
24 we're going to see any difference or the result is not
25 reliable.

1 Regarding the second comment on VOC. VOC may be
2 a very important issue, but I'm not sure biomonitoring
3 will be ready to us. The reason, like Dr. Quint say, how
4 you catch this instantaneous exposure, and then bring the
5 sample back to the lab, you need to consider holding and
6 times, so that challenge is both laboratory may not have
7 so much experience, and then consider CDC ask us to
8 provide more detail.

9 The Program may need to think, okay, is this the
10 best tool or field test maybe a different monitoring tool
11 to use. So just provide all this information to the Panel
12 and the public, our known laboratory, may have some
13 limitation.

14 Thank you.

15 CHAIRPERSON LUDERER: Yes. Dr. Solomon.

16 CAL/EPA DEPUTY DIRECTOR SOLOMON: Gina Solomon.
17 This meeting has been fantastic. I've learned a lot, and
18 I think there's some really great things that are going
19 to -- that are coming out of the meeting and really good
20 ideas. I did hear some good ideas or thoughts come from
21 public commenters and from staff. And I didn't hear clear
22 responses from the Panel about whether you were interested
23 in really having, you know, the Program pick up on them.

24 One of them I think from one of the public
25 commenters was to look at phthalates as an entire class.

1 And since that issue kept coming up today about that --
2 you know, certain phthalates in consumer products, I just
3 sort of wanted to see if that was something that the Panel
4 feels should be -- might be something staff should look
5 at?

6 And then I also think I heard a similar
7 recommendation around the perfluorinated chemicals.
8 Again, very relevant to consumer products, and one of
9 these areas where there's very rapid substitution. I know
10 it's something the Safer Consumer Products Program is
11 looking at. So, you know, again, does the Panel feel that
12 that should be a priority for staff to look at and bring
13 back as a somewhat broader class?

14 And then similarly with these UV stabilizers, I
15 actually hadn't -- I wasn't aware of that, but it's -- it
16 intrigued me and it seems like those are very
17 biomonitorable.

18 Honestly, I'm a little more concerned about the
19 VOCs at the moment just on the technical front. And so I
20 want to make sure that we're taking on things where we
21 kind of -- where it would be fairly easy to build on the
22 lab methods that we already have, and sweep in and bring
23 in more information without having to take on something
24 super difficult from a lab perspective. And so I just
25 wanted to put those thoughts out.

1 Thanks.

2 CHAIRPERSON LUDERER: Thank you.

3 Dr. Bradman, did you have a response to that. It
4 looked like you --

5 (Laughter.)

6 PANEL MEMBER BRADMAN: Actually, I'm not quite
7 sure if I'm ready to respond, but maybe I'll try. Gina, I
8 always appreciate your capacity to take the amorphous and
9 make it concrete.

10 (Laughter.)

11 PANEL MEMBER BRADMAN: Which I think that's maybe
12 a little bit what's going on right here. And maybe we
13 should have some specific discussions on what kind of
14 concrete recommendations we want to make as a Panel
15 ideally in the next 15 minutes before we adjourn.

16 MS. HOOVER: Just one note, we have about eight
17 minutes left in this period. Then we have a ten-minute
18 open public comment period. So I don't know if we
19 actually will have any open public comment, but we have a
20 little bit shorter time, so I would sort of cut to the
21 chase.

22 PANEL MEMBER BRADMAN: Okay. Well, one concrete
23 recommendation, you know, I wanted to follow up on, was
24 that we have some sort of --

25 MS. HOOVER: There's nothing for open, so go for

1 it. Go back to 15 minutes.

2 PANEL MEMBER BRADMAN: Okay -- that we have some
3 sort of systematic evaluation of what we have already
4 designated and prioritized, and where they fall in the
5 realm of consumer products.

6 And then I feel like we need some information
7 gathering process, maybe even some sort of crowd sourcing
8 or nomination or input from our own professional
9 experience in staff and other researchers to see whether
10 we want to grow that list.

11 I mean, I think the chemicals that Gina just
12 raised I think we're all interested in. I mean, I've done
13 work on PFCs in child care. We've all done work on --
14 many of us have done work on phthalates. And I thought
15 phthalates already were one of our priority compounds. So
16 I think --

17 MS. HOOVER: Phthalates as a class, Asa. So we
18 have phthalates that were already measured by CDC, which
19 were designated. And those were put on the priority list,
20 not as a class.

21 PANEL MEMBER BRADMAN: Okay. I mean, everything
22 Gina mentioned I know we think is important. So how do we
23 kind of cut through the fog to be concrete? So I guess I
24 want to -- I'm asking that we can have an interaction with
25 staff to kind of systematize that evaluation.

1 CHAIRPERSON LUDERER: I mean -- so are you -- but
2 you're suggesting that this would be something that we
3 could do at a future meeting to go through the list of
4 designated chemicals and the priority chemicals, see
5 what's in consumer products, and kind of maybe prioritize
6 those? I know, that's a --

7 PANEL MEMBER BRADMAN: Yes. I mean, that would
8 be a recommendation. I certainly would be comfortable
9 with making a decision about phthalates.

10 (Laughter.)

11 CHAIRPERSON LUDERER: Dr. Cranor.

12 PANEL MEMBER CRANOR: I don't like to slow things
13 up, and I certainly share the enthusiasm for what's
14 occurred today, but it does seem to me in the spirit that
15 Asa has suggested, maybe we can do something quickly
16 today. But that's why I suggested earlier that there was
17 staff work that could pull this together and give us
18 something much more systematic to work on next time.

19 Unfortunately, that's three or four months from
20 now. That's too bad, but I don't know of another way to
21 speed it up. But the staff could have a whole
22 presentation next time, so that we could be a little
23 better organized. It's kind of come out in various ad hoc
24 ways today, you know, except for a couple of the
25 suggestions that Asa has made, and no doubt Sara has some

1 ideas as well.

2 MS. HOOVER: I was just going to say that with
3 regard to your suggestion for November, we're already
4 planning something that would fit really well with this,
5 which is an item to do agenda planning for the next year.
6 So we'd like to get input from the SGP. So we could
7 actually use a lot of the suggestions we've gotten here,
8 bring them for a discussion in November to pick what would
9 be our highest priority agenda items to pursue for the
10 next three SGP meetings in the next calendar year. So
11 that would be a way to approach it.

12 I guess I think what Gina was trying to say and
13 what we were trying to say is I don't think anyone would
14 oppose us like looking into phthalates as a class, PFCs as
15 a class, UC stabilizers, actually there was a
16 recommendation. And, Marion, you might remember, but a
17 long time ago, we were looking at BP-3 as a priority
18 chemical. And it was -- the Panel didn't act on it and
19 said, well, bring us back the group of sunscreens. Why
20 should we look at one?

21 So that's already something that we could go back
22 and cover. So I think we have some specific
23 recommendations. I really like your systematic review
24 idea, so we can do some of that work. And then if
25 something else pops out from our systematic review, we

1 could include that in a discussion in November.

2 So does that seem like a reasonable approach?

3 Okay. And then I think just -- I don't know if
4 this is the time for --

5 CHAIRPERSON LUDERER: I think so.

6 MS. HOOVER: So we'll go ahead.

7 CHAIRPERSON LUDERER: Yeah. So Dr. Lauren Zeise
8 the Deputy Director for Scientific Affairs of OEHHA is
9 going to do a summary of the key action items that have
10 come out of this discussion today.

11 Dr. Zeise.

12 DR. ZEISE: Well, I think we've had quite a good
13 discussion of some of the key action items coming out. So
14 I think I'm going to try not to repeat the issue around
15 doing a systematic review and what that might look like,
16 and also bringing to the Panel, as an agenda item, a
17 discussion of what will be coming up in upcoming meetings.

18 So I'll set those aside, and just remind some of
19 the other points from the discussion. The first thing was
20 that, in addition to seeing and hearing about the
21 different chemical levels being measured, you'd really
22 like to have a discussion around some of the studies. And
23 you'd like to hear from some of the collaborators as well
24 as staff on what we're finding in the Program's focus on
25 the specific studies. So I'm seeing that I captured that

1 okay, and you don't want to add to that, is that right?

2 Okay. And then around non-targeted sampling,
3 what I heard was that there -- the issue on identifying
4 metabolites still continues to be a very big issue for
5 non-targeted sampling. And we do have a group that's
6 beginning to look at that issue, but that seems like
7 something to put on this list of things coming back to the
8 Panel. How do we tackle metabolites? How do we address
9 that issue and non-targeted, so we have the right look-up
10 list as we go forward?

11 Then another piece was in thinking about
12 non-targeted sampling, and this whole issue of illegal
13 substances, and being very careful about how we develop
14 our study designs, how we go forward on this whole issue
15 of non-targeted, given the issue around drugs and other
16 illegal substances.

17 Then, let's see, we had many -- throughout the
18 day, this issue of not having adequate toxicological
19 coverage around the whole issue of sensitization, asthma,
20 respiratory endpoints. So I think I heard a clear message
21 that the Program needs to be alert around those sets of
22 endpoints. And really as we bring up chemicals, we
23 consider -- isocyanates was something that was brought up.
24 But as we bring forward to the Panel, through our
25 discussion of different designated chemicals, to really be

1 careful about this whole issue of sensitization and try to
2 get as much information we can around those endpoints.

3 And I heard from Tom even kind of taking it the
4 next step, which is, well, what about some biological
5 markers, and should the Program begin to think about that
6 issue?

7 Let's see. And we already talked about the whole
8 issue of systematically looking at our chemical list. But
9 I guess also we heard a number of comments around the
10 consumer product sensitivity -- well, studying
11 populations -- in terms of studying populations, we talked
12 a lot about, you know, the systematic approach to
13 chemicals, but also the Panel brought up this whole issue
14 of in terms of studying populations, looking at workers,
15 considering study designs and collaborators for
16 intervention studies. And then in sample collection
17 methods thinking about how to catch transient chemicals.

18 And then in terms of creating this list, we were
19 encouraged to develop relationships with the ARB to look
20 at their survey. And that was one source of chemicals for
21 consumer products, but also forming kind of an interagency
22 or inter-program group to think about how we establish
23 this consumer list to look at.

24 And I think that's it.

25 DIRECTOR ALEXEEFF: There were at least two other

1 items. One was I think for staff to look at the
2 methacrylates as a group and see what's there.

3 MS. HOOVER: Yes.

4 DR. ZEISE: Oh, yeah, so maybe I should --

5 DIRECTOR ALEXEEFF: Do we know a couple of them?

6 DR. ZEISE: Maybe I should walk through then the
7 chemicals I captured.

8 MS. HOOVER: Yes.

9 DIRECTOR ALEXEEFF: Okay. And then well -- and
10 the other thing I just wanted to mentioned was the
11 consideration of that recent review article that Dr.
12 Quintana mentioned about chemicals. So look into that.

13 DR. ZEISE: Yes. Maybe -- yeah, let me walk
14 through the list of chemicals then, because I think -- so
15 we heard fragrances, isocyanates, acrylates, UV
16 stabilizers, VOCs, phthalates as a class, perfluorinated
17 chemicals, and breast and mammary carcinogens. Okay.

18 CHAIRPERSON LUDERER: Okay. I thought I would
19 check to see if we had any public comments? And I see one
20 for sure. Any -- and okay. So two. Sorry, go ahead.

21 PANEL MEMBER QUINTANA: And just to add to your
22 summary of action items, I heard from many members of the
23 public today their disappointment in the funding shortfall
24 that was announced today. And I'm not sure if the
25 Scientific Guidance Panel could echo that sentiment that

1 the funding reductions will prevent some of the exciting
2 science, in terms of method development and other things,
3 but -- I'm not sure if it's appropriate, but I'd like to
4 add that.

5 CHAIRPERSON LUDERER: Okay. So we have Nancy
6 Buermeyer from the Breast Cancer Fund, and --

7 MR. ENDLICH: Brian Endlich, DTSC.

8 CHAIRPERSON LUDERER: Okay. Nancy, did you --
9 since I saw you wave there.

10 MS. BUERMEYER: Nancy Buermeyer, Breast Cancer
11 Fund. I wasn't sure if we had missed the last
12 opportunity, but really supportive of doing the systematic
13 review of the chemicals. And I was going to request that
14 there be some mechanism for the public to add input before
15 we actually get to the meeting.

16 So, for instance, we're developing a list of
17 chemicals we want to share with retailers around cosmetics
18 to say to them you should not carry cosmetics with these
19 chemicals in it. So is there a way to get that into the
20 conversation before we get here, because by the time we
21 get here it's hard to look at a list of 90 chemicals?

22 So just a request for there to be some kind of
23 call to the public to have input into that process as we
24 go.

25 And I think your idea about having the Science

1 Guidance Panel weigh-in on the funding thing is awesome.
2 So maybe -- I would like to work with you all to see if
3 there could be like a letter signed by all of you to the
4 legislature or to the Governor that we could use to try to
5 bring this Program back up to full capacity.

6 Thanks.

7 CHAIRPERSON LUDERER: Thank you very much.

8 Will you please introduce yourself.

9 MR. ENDLICH: Yes. I'm Brian Endlich, a
10 toxicologist with Department of Toxic Substances Control.
11 I just want to make a quick comment about the fragrances
12 and the other irritant sensitizers that we're trying to
13 get a -- wrap our hands around, and the idea of scent
14 branding and exposures that we might not be able to
15 capture through biomonitoring.

16 And I was just thinking along the same lines as
17 Dr. McKone about are there some fast reacting markers of
18 exposures and effects that we could look at within the
19 immunological world, such as cytokines, chemokines,
20 histamines, things like that. So there might be
21 opportunities for some collaborative studies with various
22 immunology groups at local universities or something like
23 that.

24 Thank you.

25 CHAIRPERSON LUDERER: Okay. Thank you very much.

1 Do we have -- before we wrap-up, Dr. McKone, did
2 you have a comment?

3 PANEL MEMBER MCKONE: Well, are we going to make
4 a consensus finding on the -- our concern about the
5 shortage of funding? I mean, I don't know how we quite do
6 that other than -- it was mentioned, but I don't know how
7 we follow up.

8 CHAIRPERSON LUDERER: Right. I mean, is it --
9 can we write a letter as a Panel? Is that something that
10 we are permitted to do?

11 I think there's probably consensus on the Panel
12 that we would be happy to do that.

13 STAFF COUNSEL KAMMERER: (Nods head.)

14 PANEL MEMBER MCKONE: Because I didn't want to
15 leave that without commenting on it.

16 CHAIRPERSON LUDERER: No, right.

17 Dr. Alexeeff.

18 DIRECTOR ALEXEEFF: So before the Chair wraps-up,
19 I just wanted to thank the Chair for running such an
20 excellent meeting. And we had a lot of interesting ideas,
21 and she kept them all under control, and helped organize
22 this meeting. So I just wanted to thank her, and, of
23 course, the Panel members and the public for the
24 participation.

25 CHAIRPERSON LUDERER: All right. Thank you,

1 everyone actually for participating in this very excellent
2 meeting, the speakers, the staff, the Panel, and the
3 members of the public. And with that, I would like to
4 remind everyone that we do have another meeting coming up.
5 November 6th is the date for the next SGP meeting, which
6 is in Sacramento. And there will be a transcript of the
7 meeting posted as always on the Biomonitoring California
8 website. And I know that there's always an email sent out
9 to the listserv when that is posted.

10 And I also wanted to remind everyone that this
11 facility closes at 5:00 p.m. promptly. So if you have
12 ongoing conversations that you would like to hold to --
13 you don't want to get locked into the building.

14 (Laughter.)

15 CHAIRPERSON LUDERER: All right. So with that,
16 I'd like to adjourn the meeting and thank you all again.

17 (Thereupon the California Environmental
18 Contaminant Biomonitoring Program, Scientific
19 Guidance Panel meeting adjourned at 4:30 p.m.)
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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, and Registered
4 Professional Reporter, do hereby certify:

5 That I am a disinterested person herein; that the
6 foregoing California Environmental Contamination
7 Biomonitoring Program Scientific Guidance Panel meeting
8 was reported in shorthand by me, James F. Peters, a
9 Certified Shorthand Reporter of the State of California,
10 and thereafter transcribed under my direction, by
11 computer-assisted transcription.

12 I further certify that I am not of counsel or
13 attorney for any of the parties to said meeting nor in any
14 way interested in the outcome of said meeting.

15 IN WITNESS WHEREOF, I have hereunto set my hand
16 this 21st day of July, 2014.

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