

March 2026 Meeting of the Scientific Guidance Panel for Biomonitoring California

Summary of Input and Recommendations

The Scientific Guidance Panel (SGP) for the California Environmental Contaminant Biomonitoring Program (also known as Biomonitoring California) met in Oakland on March 4, 2026. This document briefly summarizes input and recommendations received from the Panel, as well as the range of topics discussed with the audience. Visit the [March 2026 SGP meeting page](#) to access the presentations, transcript, and other meeting materials.

SGP Panel Members in Attendance

Thomas McKone, PhD, Chair
Carl Cranor, PhD, MSL
Lara Cushing, PhD, MPH
Timur S. Durrani, MD, MPH, MBA
Oliver Fiehn, PhD
Amy Padula, PhD, MSc
Penelope (Jenny) Quintana, PhD, MPH, *attended remotely*

Program Update

[Presentation](#): Nerissa Wu, PhD, MPH, California Department of Public Health (CDPH)

Panel members and the audience discussed the following topics with Program staff:

- Use of the Digital Exposure Report-Back Interface (DERBI) platform to return results to participants.
 - A printed copy of the results will always be accessible to study participants since access to the internet or a smartphone may differ across study participants and communities.
 - DERBI has an option to generate a report that can be printed out.
- The feasibility of using micro-sampling devices to collect blood and serum samples in Biomonitoring California studies.
 - The devices can be self-administered by participants.
 - For whole blood collection, the ethylenediaminetetraacetic acid (EDTA) tubes can be detached, stored in a participant's home freezer, and shipped to the Program's labs.
 - This would be particularly useful for biomonitoring after a disaster when sample collection needs to happen quickly.
 - For serum collection, serum separator tubes would need to be centrifuged immediately and therefore are less feasible for collection at participants' homes.
 - The Program is testing for potential contamination from the micro-sampling devices.

- The Environmental Health Laboratory (EHL) and the Environmental Chemistry Laboratory (ECL) screened the devices for metals and PFASs respectively. The labs will compare concentrations of chemicals in samples collected through micro-samplers and phlebotomy.
- Participants in the intra-program pilot study designed to test out these micro-sampling devices frequently reported a bruise or a mark after use.
 - The bruises or marks tended to go away after a few weeks, but some persisted.
 - Both micro-sampling devices that were tested left a mark, but the TASSO+ device appeared to leave more pronounced marks.
- The Program's recent use of individual carbon-13 polycyclic aromatic hydrocarbon (PAH) standards when measuring PAHs in urine.
 - The previous method used one standard for multiple isomers of a specific PAH metabolite.
 - Although the updated methods are more robust, previous PAH results generated by EHL remain valid.
- Useful information to include on the Biomonitoring California website, including suggestions for formatting of study results data.
 - The data on the website is currently structured similarly to the presentation of data from National Health and Nutrition Examination Survey (NHANES) on the Centers for Disease Control and Prevention's website.
 - Additional information such as differences by demographic groups (e.g., age, sex) are currently included in reports or publications by the Program (e.g., [The California Regional Exposure \(CARE\) study report](#)). Data on the website are not presented by demographic groups.
 - Raw data is useful to researchers for use in novel algorithms to potentially examine the diversity of variants of data sets.
 - The Underwriter Labs Chemical Research Institute may be a good resource to see which data would be useful to include on the Biomonitoring California website as they are reenvisioning data repositories and are interested in exposure data from California that can be formatted to be more exchangeable.
 - All chemicals reported should have an associated international chemical identifier (e.g., CAS registry number).
 - The detection frequencies of chemicals are important to advocates who use the information to pass legislation.
 - Aggregating the detection frequencies within a class makes the messaging easier to understand.
 - The [CARE- at-a-glance fact sheet](#) includes aggregated messaging.

Microplastics: Monitoring Methods and Examples of State Efforts

Presentation: Jeff Wagner, PhD, Environmental Health Laboratory, CDPH

Presentation: Dicle Yardimci, PhD, MS, Department of Toxic Substances Control

Presentation: Matt Campen, PhD, MSPH, University of New Mexico

Panel members and the audience discussed the following topics with guest speakers and Program staff:

- The importance of identifying target organs and associated health effects of microplastics (which often include smaller, nano-sized plastics).
 - Currently, health-based standards have not been set for exposure to microplastics.
 - The shapes and sizes of the microplastic particles have a significant impact on where they end up in the body.
 - Research suggests that microplastics that are ingested can be absorbed into the body through lipoproteins such as chylomicrons.
 - Chylomicrons can enter cells and transport microplastics to organs such as the liver and brain.
 - In brain samples, 60-75% of all solid particles are a type of polymer (i.e., plastic). Other particles found are minerals such as lead and organic particles such as soot.
 - Research has also shown microplastics can migrate across the placenta and into the fetal brain. There is a small link between concentrations of plastics in the placenta and complications in maternal and fetal health.
 - Transport of microplastics across the placenta is thought to be mediated through apoproteins and chylomicrons.
 - More research is needed to characterize exposure trends over time and identify any potential impact of micro- and nano-plastics on health, including lifespan.
 - Environmental health advocates are encouraging researchers to continue to assess potential trends of increased cancer rates and exposure to microplastics and report findings to the public.
- Methods used for measuring microplastics and accounting for potential contamination.
 - Microspectroscopy is the most commonly cited method for measuring microplastics in published literature.
 - Pyrolysis Gas Chromatography-Mass Spectrometry (py-GC-MS) is an emerging method and may be more amenable to biomonitoring.
 - Standards need to be developed for microplastics for analysis via py-GC-MS.
 - Pyrolysis simplifies the identification of different polymers, such as polyethylene, within the same tissue sample. It breaks the polymers

- down into a few common compounds when the tissues are combusted.
- There are multiple quality control procedures involved in conducting analyses using py-GC-MS, such as procedural blanks and tissue blanks.
 - Contamination from the lab analysis process itself can be minimized, particularly in tissue samples where the microplastics on the surface of tissues do not penetrate the tissue and can be washed away.
 - Contaminants can be observed with Fourier-Transform Infrared (FTIR) Spectroscopy, but it is infrequent.
 - Measuring other plastic-related chemicals such as plasticizers and flame retardants at the same time as microplastics to provide a more complete picture of exposure.
 - The py-GC-MS method incinerates the tissue making it hard to measure some other chemicals.
 - Microplastics measured in human tissues may no longer contain plasticizers, metals, or flame retardants if these chemicals already leached out as the plastic degraded and traveled through the body.
 - Other potential biomatrices to measure microplastics.
 - For urine, more research is needed to examine potential short-term temporal changes in microplastics.
 - Robust concentrations of microplastics have been reported in cerebrospinal fluid, however it is harder to obtain.
 - The release of microplastics from plastic products.
 - Heat is one of the main contributors to the release of microplastics from plastic products.
 - Plastic products in landfills are exposed to environmental factors such as sunlight, water, wind, and microorganism activity which generate microplastics.
 - Mechanical wear and tear through the use of plastic products can also release microplastics.
 - The listing of products that contain or can generate microplastics as Priority Products by the Safer Consumer Products (SCP) program at the Department of Toxic Substances Control (DTSC).
 - The SCP program needs to show potential for exposure and adverse impacts to add microplastics to its candidate chemical list. It does not need to quantify a safe limit.

- As a part of the SCP framework, the SCP program conducts alternatives analysis on priority products that contain candidate chemicals.
 - The alternative analysis will include conversations with product manufacturers and experts to identify potential alternatives to products containing harmful chemicals.
 - Manufacturers must conduct an alternatives analysis once a rulemaking is complete on a specific priority product.
 - A public commenter at the SGP meeting stated that cellophane, made out of cellulose, may be an alternative for plastic wrap but more research is needed to examine its toxicity and potential as a safer alternative.
- The SCP program typically does not choose to regulate an entire class of products, as they have limited capacity to examine all the potential products within a class at a given time.
 - Furthermore, products within the same class can vary significantly, which can make identifying alternatives difficult.
- The SCP program cannot promote specific types of products or brands.
- Biomonitoring California data is often used by the SCP program to demonstrate exposure in California. Furthermore, chemicals on the Biomonitoring California priority list are automatically added to the SCP candidate chemical lists.
 - Biomonitoring California uses information published by the Safer Consumer Product program to identify potential exposure sources for chemicals and to inform study questionnaires.
- The European Union's REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) regulation in 2023 which restricts intentionally added microplastics in products.
 - Manufacturers are working on alternatives to comply with the regulation but it may be a few years before the alternatives are implemented and the impacts are observed.

Open Public Comment

- Dr. Ahimsa Porter Sumchai from Hunters Point Biomonitoring Foundation presented research on heavy metal and radiation exposures and breast cancer clusters within one mile of the Hunters Point Naval Shipyard, which is a federal superfund site.
- Dr. Arlene Blum from the Green Science Policy Institute recommended chloroxylenol, an organohalogen anti-microbial, to be added to the Biomonitoring California list of designated chemicals.

- This was supported by Rebecca Fuoco, the Director of Science Communications at the Green Science Policy Institute and Nancy Burermeyer at Breast Cancer Prevention Partners.
- Chloroxylonol has been detected in human breast milk and has been linked to endocrine disruption, reproductive toxicity, cancer, neurotoxicity, cardiovascular toxicity, and skin harm. Emerging evidence suggests it may also contribute to antimicrobial resistance.
- There is concern that it might be used as a regrettable substitute for the replacement of quaternary ammonium compounds.