November 6, 2014

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Dear Directors Chapman, Lee, and Alexeeff:

I am writing on behalf of the Scientific Guidance Panel (SGP) for the California Environmental Contaminant Biomonitoring Program (also called Biomonitoring California) with our recommendations regarding the ongoing funding requirements of the Program. As you may know, Biomonitoring California was established in 2006 by legislation (Senate Bill 1379) to monitor the presence and concentration of selected chemicals in Californians. This legislation also established the SGP, which meets three times yearly to review progress and advise the Program. We met most recently on November 6, 2014. The SGP strongly recommends that state funding for Biomonitoring California be increased to provide an ongoing commitment of total funding at least equivalent to $4.8 million annually (i.e., the annual combined total funding during the five years ending on August 31, 2014). In the absence of such a commitment, the SGP fears that the impressive gains made by the Program during the past five years will not be sustainable.

The staff of the California Department of Public Health (CDPH), the Office of Environmental Health Hazard Assessment (OEHHA), and the Department of Toxic Substances Control (DTSC) have continued to do a truly outstanding job growing and developing the Program and ensuring transparency and high quality participation across stakeholders and the general public. Moreover, they have accomplished this in the face of limited and declining budgets.

To address budget constraints, the SGP strongly endorses the efforts of Biomonitoring California staff to obtain external resources to supplement State funding. We were extremely pleased that the cooperative agreement between Biomonitoring California and the U.S. Centers for Disease

Control and Prevention (CDC) provided $2.65 million annually for five years (FY 2009 – 2014; ending August 31, 2014). Together with the annual $2.2 million in State funding for the Program, the CDC cooperative agreement enabled the Program to expand laboratory capability and capacity and to undertake targeted biomonitoring studies. These laboratories established and validated more than 100% of the laboratory methods originally proposed in the CDC agreement and the Program is already generating scientifically credible data on environmental exposures that are relevant to public health and regulatory programs in California (refer to the Biomonitoring California website for complete details on completed and ongoing biomonitoring studies: www.biomonitoring.ca.gov).

The SGP applauds the excellent progress made by both the CDPH Environmental Health Laboratory and the DTSC Environmental Chemistry Laboratory to develop new methods for the measurement of priority chemicals identified by the SGP, which are highly relevant to the work of DTSC, OEHHA, and CalEPA in general. Examples of these methods include:

- Measurement of environmental phenols, including bisphenol A, which can adversely affect endocrine function. Bisphenol A has been banned by the California legislature from certain children's products due to health concerns related to endocrine disruption.
- Arsenic speciation. Arsenic is a heavy metal and a known carcinogen. Arsenic speciation is important because this metal exists as several different species, which have different toxicological properties.
- A breakthrough method that allows the analysis of persistent chemicals (PCBs, PBDEs, and organochlorine pesticides) in a very small volume sample. The DTSC laboratory demonstrated that Californians have the world's highest levels of PBDE flame retardants, and these results led the California legislature to ban these chemicals. Persistent organochlorine pollutants, including the known carcinogens DDT and PCBs, continue to pose public health threats despite having been banned in the U.S.

The SGP also applauds the CDPH and DTSC laboratories development of new methods to screen for previously unknown contaminants, which will be broadly applicable to all aspects of DTSC's and CalEPA's work.

The SGP commends Biomonitoring California for their outreach efforts to form partnerships with other State programs and with academic researchers to conduct innovative and informative targeted studies. The SGP also commends Biomonitoring California's focus on highly exposed and/or vulnerable subpopulations for these projects. Examples of key findings from these successful ongoing and completed collaborations include:

- **Higher levels of PBDE flame retardants, PCBs, and organochlorine pesticides** were found in **infants' cord blood** compared to blood samples from their mothers. [Paper submitted]
- **High levels of PBDE flame retardants** were measured in Southern California **firefighters** compared to the U.S. general population. [Paper under development]
- Firefighters were unexpectedly found to have **higher levels of benzophenone-3** (BP-3) compared to the U.S. general population. BP-3 is an endocrine disruptor widely used as a

UV stabilizer in personal care products, plastic packaging, and other polymers. [Paper submitted]

- Firefighters also showed **higher levels of one perfluorochemical** (PFC) compared to the U.S. general population. PFCs can affect fertility, hormone balance, and the immune system. [Paper in press]
- DTSC's laboratory collaboration with the 3 Generations Study has detected **temporal changes in PFCs**, providing evidence of the **emergence of new PFCs** in the market.
- Californians living in the Central Valley were found to have **elevated levels of arsenic** relative to the US population. [Analysis continuing; paper in development]
- Results of several studies have shown **lead** levels to be consistently lower than those of the general U.S. population, **providing evidence for the effectiveness of California's efforts to reduce exposure to this highly toxic heavy metal**.

These highlighted efforts demonstrate that Biomonitoring California is providing information on exposures that can ultimately support money-saving public health initiatives, reducing health care costs and preventing the need for costly environmental remediation. Biomonitoring California provides an early warning system to identify emerging chemicals of concern in California. The increased capacity of California laboratories enabled by the Program also improves the ability of our State to respond to terrorist attacks, industrial accidents, or other disasters involving human exposures and health effects.

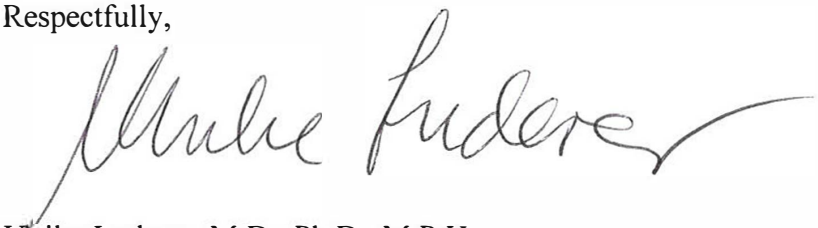
The SGP was very gratified to hear that Biomonitoring California has been awarded another round of CDC funding, at a level of $1 million annually for five years. However, the SGP also recognizes that this represents a significant reduction in federal funding compared to the prior CDC cooperative agreement and that this award does not support any new methods development. As a result, the Program has lost two thirds of the 15 staff positions that were funded under the previous cooperative agreement and may have to curtail new methods development activities without increased state support. The SGP was therefore also very pleased to hear that temporary state funds of $700,000 per year for two years in addition to the baseline state funding have been allocated to the Program. The SGP strongly recommends that state funding for Biomonitoring California be increased to provide an ongoing commitment of total funding at least equivalent to $4.8 million annually (i.e., the annual combined total during the past five years from the previous CDC cooperative agreement and baseline state funding). In the absence of such a commitment, the SGP fears that the impressive gains made by the Program during the past five years will not be sustainable.

The SGP strongly commends the outstanding progress Biomonitoring California has made with limited resources. The SGP recognizes that the Program would need additional resources beyond even the combined state and CDC funding level of the past five years to fully accomplish the objectives of the law. Specifically, the law directs the State to establish a biomonitoring program that, "*will assist in the evaluation of the presence of toxic chemicals in a representative sample of Californians, establish trends in the levels of these chemicals in Californians..., and assess effectiveness of public health efforts and regulatory programs to decrease exposures...*." The funding needed to biomonitor a representative sample of California's 37 million residents would amount to an estimated $10 million annually, which is about five times greater than the baseline state budget for the Program. The remarkable progress made by Biomonitoring California to date

will enable the program to quickly ramp up to a fully representative statewide sample should the funding become available.

Thank you for considering this information. We look forward to continuing our assistance to the State agencies charged with implementing this extremely important public health program.

Respectfully,



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Other Panel members in attendance at the November 6, 2014 meeting

Asa Bradman, Ph.D., M.S.
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Thomas McKone, Ph.D.
Adjunct Professor, School of Public Health University of California at Berkeley and Senior Scientist and Deputy Department Head, Indoor Environment Department Lawrence Berkeley National Laboratory

Oliver Fiehn, Ph.D.
Full Professor of Molecular and Cellular Biology, University of California, Davis

P. **Jenny Quintana, Ph.D., M.P.H.**
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Marion Kavanaugh-Lynch, M.D., M.P.H.
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