January 16, 2017

Comments from Academics, Scientists and Clinicians on the New Chemicals Review Program under the Toxic Substances Control Act

EPA-HQ-OPPT-2016-0658
FRL-9955-18

Comments submitted to EPA-HQ-OPPT-2016-0658 and by email to Greg Schweer, Chemical Control Division (7405M), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460–0001; telephone number: (202)564–8469; email address: schweer.greg@epa.gov.

These comments are submitted on behalf of the undersigned academics, scientists, and clinicians from universities and non-profit organizations located within the United States and other countries. We collectively declare that we have no direct or indirect financial or fiduciary interest in the manufacture or sale of any chemical that would be the subject of the New Chemicals Review Program.

We appreciate the opportunity to provide written comments on changes to the New Chemicals Review Program under the Toxic Substances Control Act (TSCA) as amended by the Frank R. Lautenberg Act. EPA held a public meeting on December 14, 2016 in Washington D.C. and several of the undersigned submitted oral comments at that time. We appreciate this subsequent follow-up opportunity to submit detailed comments and to respond to information shared by EPA and other public commenters during this meeting.

We strongly support EPA in its efforts to improve its New Chemical Review procedures through the Frank R. Lautenberg Amendments to TSCA to make them timely and health protective. Such improvements are urgently needed and long overdue, as previous approaches to regulating new chemicals are well documented to have resulted in new chemicals entering the market in the absence of safety review and later shown to be toxic. We recommend the Agency continue to fulfill these statutory mandates in a timely manner while simultaneously supporting the Agency's overall duty to protect public health and prevent harmful exposures to environmental chemicals. In fulfillment of these mandates, we recommend EPA should:

1. **Utilize scientific data in a way that supports timely decision-making;**
2. **Identify scenarios where toxicity data are lacking, and explicitly outline where data gaps exist and where data are most needed to facilitate the development and design of studies that will generate relevant health data in a timely, reliable, and reproducible manner;**
3. **Ensure that exposures do not result in unreasonable risks to vulnerable and susceptible populations by taking into account potential occupational exposures, sensitive life stages, human variability, concurrent exposures to multiple chemicals and other external factors that greatly influence risk including pre-existing health conditions and stressors such as poverty.**

Comments on the New Chemical Review process

Collectively, as academic and clinical scientists, our research goals involve creating a healthier environment for human reproduction and development. We work towards this mission by advancing

scientific inquiry, clinical care, and health policies and regulations that prevent exposures to harmful chemicals in our environment, particularly during critical time periods of life stages, such as pregnancy or during child development that can have both acute and long-term impacts on individual health, some effects which can persist through several generations.

The review of new chemicals prior to their entry on the market is an extremely critical opportunity for EPA to prevent potential harmful exposures of chemicals to people in their homes, workplaces, and outdoor environments. We have seen time and time again examples of chemicals used in household and workplace products and goods whereby thousands and millions of people are exposed, only to ultimately find that these chemicals are harmful to human development, reproduction, and general public health. The process for removing these chemicals from commerce is no simple feat. We are still exposed to known harmful chemicals like lead, asbestos, and polybrominated diphenyl ether flame retardants from their past uses and in some cases ongoing uses, and exposures are expected to continue for many decades.

We strongly support many of EPA's changes in procedures to New Chemical Reviews to satisfy its statutory mandate through the Frank R. Lautenberg Amendments to the Toxic Substances Control Act. The changes implemented through the Lautenberg Amendments were intentionally made to strengthen the procedures and authority under which EPA reviews new chemicals prior to entering commerce. We believe many of these changes will strengthen public health protection by taking action to prevent harmful exposures.

First, the Lautenberg Act mandates EPA to review each new chemical and make an affirmative finding regarding its safety. This is the first time EPA is required to affirm safety of a chemical before it is used in commerce. Given that approximately 23,000 new chemicals that have been introduced into commerce since 1979 (approximately 500-1,000 per year), effective implementation of this provision of the law will be critical to protecting the public's health and providing incentive for the testing of chemical safety before its use in commerce instead of ineffective post-evaluation of safety after exposure has already happened, as has been the status quo to date.

Second, the Lautenberg Act requires EPA now to consider and mitigate risks under not only the specific uses outlined by the chemical company submitting the chemical for review, but additionally any production, procession, distribution, use or disposal that could be reasonably foreseen. This major change enables EPA to broaden its protection of the public beyond limitations of what the chemical company claims in its premanufacture notice, by anticipating possible future uses of the chemical and considering the risks in these different scenarios.

Third, once the Lautenberg Amendments were in place EPA decided to reset the 90-day clock on chemical reviews that were already underway. We strongly support this decision, as we believe it clearly delineates the starting point by when new chemicals all undergo the modified review process as mandated by the new Amendments. Understandably, changes implemented by EPA to the New Chemicals Review process to align with mandates of the Lautenberg Amendments may result in longer review times than occurring under the old law. EPA's changes to the New Chemicals Review process, while fully consistent with and mandated by the Lautenberg Amendments, are resulting in development of more orders and longer review times compared to the program under the old law. Two key factors are involved: manufacturers do not always provide all necessary information and EPA is pursuing consent orders in more instances. As industry becomes more familiar with the procedures, processing speeds should increase. It is important to note that negotiation of issuance of orders under the old law also led to longer review times; the difference now is that EPA is pursuing orders in a larger fraction of cases, a change that is directly related to the law's new requirements. We are fully supportive of a more complete review under the Lautenberg mandates that require EPA to make an affirmative finding regarding the chemical's safety ("not likely to present an unreasonable risk"), require test orders for chemicals with insufficient

safety information, consider reasonably foreseen as well as intended uses, and consider vulnerable subpopulations as we believe this aligns with the new law's intent to support a review process that is more thorough and health protective. As also discussed in the in-person meeting, it is anticipated that over time EPA's processes will become more efficient and allow for more expeditious review. As the new procedures are implemented to abide by the new mandate and chemical companies and manufactures begin to anticipate requirements under the new mandate, this process will likely become smoother for all parties involved over the long term, and the end result will be an efficient new chemical review process that is more public health protective.

We strongly recommend the Agency continue to fulfill these statutory mandates in a timely manner while also supporting the Agency's overall duty to protect public health and prevent harmful exposures to environmental chemicals. In support of this, we propose the following recommendations:

1. EPA should utilize scientific data in a way that supports timely decision-making.

The Lautenberg Amendments to TSCA mandates EPA to make an affirmative finding as to the safety of a new chemical prior to entering the marketplace. To support this decision, EPA should use the highest quality evidence and information to support their findings in a way that supports timely decision-making. First, EPA should leverage existing data sources by seeking knowledge about specific chemicals or analogues that have already been documented in risk or hazard evaluations completed by EPA, other government agencies (such as the National Toxicology Program or the California Environmental Protection Agency), or other authoritative body (International Agency for Research on Cancer) to extrapolate findings to the new chemical under review when appropriate. These assessments provide evidence summaries and integration of existing data and can provide a critical immediate source of data on recognized hazards.

Second, EPA should use this opportunity to update their chemical assessment methods and approaches to incorporate modern scientific knowledge gained in the past several decades. Modern methods and approaches have been recommended in detail by the National Academy of Sciences (NAS) in several landmark publications, *Science and Decisions, Phthalates and Cumulative Risk,* and *Review of EPA's Integrated Risk Information System (IRIS) Process*.[1,2,3] These approaches have been developed and promoted by leading clinical and scientific communities, including health professionals and academics in the U.S. and around the world. These publications compile a wealth of expertise and the most current state of the science that can be specifically and efficiently integrated into EPA's chemical assessment. These practices, where appropriate, should be incorporated in the evaluation of EPA's New Chemicals Review process—for instance, treating cancer and non-cancer health endpoints in a scientifically equivalent manner (not assuming a "threshold" response for non-cancer outcomes unless strong scientific evidence exists to demonstrate that it exists), assessing aggregate and cumulative risks to ensure hazard assessments adequately reflect the reality of people's exposures, and using science-based defaults as recommended by the NAS[2] to incorporate factors that reflect the range of variability and susceptibility in the population to ensure risks are not underestimated.

[1] National Research Council. *Science and Decisions: Advancing Risk Assessment.* Committee on Improving Risk Analysis Approaches Used by the U.S. EPA, Board on Environmental Studies and Toxicology, and Division on Earth and Life Studies. 2009. Washington, D.C. National Academies Press.
[2] National Research Council. *Phthalates and Cumulative Risk Assessment: the Task Ahead.* 2008. Washington, D.C. National Academies Press.
[3] National Research Council. *Review of EPA's Integrated Risk Information System (IRIS) Process.* 2014. Washington, D.C. National Academies Press.

2. **EPA should identify scenarios where toxicity data are lacking, and explicitly outline where data gaps exist and where data are most needed to facilitate the development and design of studies that will generate relevant health data in a timely, reliable, and reproducible manner.**

Limited or no data is a common obstacle that limits EPA's ability to evaluate the potential risk, particularly for new chemicals entering the marketplace. Under the old TSCA law, existence of no data was essentially treated as if there was no safety concern and many chemicals have entered commerce with little to no information regarding toxicity. However, there is no shortage of examples of chemicals lacking initial safety data that have later been shown to be hazardous to human health— unfortunately, often times after the fact when exposure has already happened with people already impacted adversely. This illustrates the important fact that **absence of data does not equate to lack of hazard or risk**. The only appropriate interpretation of a data void that the hazard and risks are unknown, and when this is the case EPA should explicitly specify how it plans to address these data voids and obtain the data needed to make scientifically-based decisions.

Under the Lautenberg Amendments for New Chemicals Review, if EPA determines that a new chemical presents an unreasonable risk or information is not sufficient to make the determination that a chemical does not present an unreasonable risk, it must issue an order prohibiting or limiting the chemical in order to mitigate any potential unreasonable risk. This is a significant change from the old TSCA, where EPA was forced to allow manufacture of a new chemical into commerce when lacking sufficient information to demonstrate safety. A key consequence of this change is that there now exists an incentive for the testing of chemical safety before its use in commerce instead of post-evaluation of safety after exposure has already happened.

In situations where data are lacking, EPA should proactively outline existing data gaps and explicitly state where data are most needed so as to facilitate the external development and design of studies that will generate these data in a timely manner. Timely generation of health and toxicity data for new chemicals is critical for ensuring that those posing a risk to human health are prohibited from entering the market. Furthermore, EPA should also utilize their authority to require testing of chemicals and issue orders requiring testing for new chemicals. These test orders should outline the most relevant test models, exposure pathways, health outcomes, and target populations (including any vulnerable or sensitive populations) anticipated to support the generation of high-quality and relevant evidence to support timely decision-making.

We strongly recommend that EPA should only approve a new chemical if there is sufficient evidence to conclude that the chemical does not pose an unreasonable risk, including to highly exposed, susceptible, or vulnerable populations.

3. EPA should ensure that exposures do not result in unreasonable risks to vulnerable and susceptible populations by taking into account potential occupational exposures, sensitive life stages, human variability, concurrent exposures to multiple chemicals and other external factors that greatly influence risk including pre-existing health conditions and stressors such as poverty.

EPA is now mandated by the Lautenberg Amendments to specifically consider and protect against risks for susceptible or vulnerable populations. We are fully supportive of this new provision, and encourage EPA to consider for every new chemical review: (1) occupational exposures that are often at much higher exposure levels than the general public, both acutely and chronically and can be concurrent chemical

exposures at the workplace;[4] (2) fence-line communities who also face multiple exposures to multiple chemicals and suffer from many chronic health condition and health inequalities; (3) sensitive time periods during life, such as pregnancy and during childhood.; and (4) variability in human responses. These evaluations should be clear and transparent, and focus on protecting the health of those who are most vulnerable or susceptible.

We are very appreciative for the opportunity to provide public input and we are looking forward to continuing to participate in such opportunities in the near future. Please do not hesitate to contact us with any questions regarding these comments.

Respectfully,

Tracey Woodruff, PhD, MPH
Professor and Director
Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

Juleen Lam, PhD MHS MS
Associate Researcher
Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

[4] Hines CJ, Jackson MV, Deddens JA, Clark JC, Ye XY, Christianson AL, Meadows JW, Calafat AM. *Urinary Bisphenol A (BPA) Concentrations among Workers in Industries that Manufacture and Use BPA in the USA.* Annals of Work Exposures and Health. 2017. DOI: https://doi.org/10.1093/annweh/wxw021

Lisa Bero, PhD
Chair of Medicines Use and Health Outcomes
Charles Perkins Centre
Faculty of Pharmacy
The University of Sydney

Adelita G. Cantu, PhD, RN
Associate Professor
UT Health San Antonio
School of Nursing
7703 Floyd Curl Dr.
San Antonio, TX 78229

Courtney Carignan, PhD
Postdoctoral Fellow
Department of Environmental Health
Harvard T.H. Chan School of Public Health

Jeff Carter, JD
Executive Director, Physicians for Social Responsibility (National)

Terrence J. Collins, PhD, Hon FRSNZ
Teresa Heinz Professor of Green Chemistry and Director, Institute for Green Science
Department of Chemistry
Carnegie Mellon University

Mary A. Fox, PhD, MPH
Assistant Professor
Department of Health Policy and Management
Acting Director, Risk Sciences and Public Policy Institute
Johns Hopkins Bloomberg School of Public Health

Robert Gould, MD
Associate Adjunct Professor and Director of Health Professional Outreach and Education
Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco
President, San Francisco Bay Area Chapter, Physicians for Social Responsibility
Past-President, Physicians for Social Responsibility (National)

Maeve Howett, PhD, APRN, CPNP-PC, IBCLC, CNE
Clinical Professor
Assistant Dean of Undergraduate Nursing Education
University of Massachusetts Amherst

Patricia D. Koman, PhD, MPP
Green Barn Research Associates
Ann Arbor, MI

Carol Kwiatkowski, PhD
Executive Director,

The Endocrine Disruption Exchange
Assistant Professor Adjunct,
Department of Integrative Physiology
University of Colorado, Boulder CO

Diana Laird, PhD
Associate Professor
Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research
Department of Obstetrics, Gynecology and Reproductive Science
University of California, San Francisco

Rob McConnell, MD
Professor of Preventive Medicine
Director, Children's Environmental Health Center
Keck School of Medicine
University of Southern California

Rachel Morello-Frosch, PhD, MPH
Professor
Department of Environmental Science, Policy and Management & School of Public Health
Chair, Society and Environment Division, Dept of ESPM
University of California, Berkeley

Keeve E. Nachman, PhD, MHS
Assistant Professor
Department of Environmental Health and Engineering
Director, Food Production and Public Health Program
Johns Hopkins Center for a Livable Future
Co-Director, Johns Hopkins Risk Sciences and Public Policy Institute
Johns Hopkins Bloomberg School of Public Health

Thomas B. Newman, MD, MPH
Professor Emeritus of Epidemiology & Biostatistics and Pediatrics
University of California, San Francisco

Katherine Pelch, PhD
Research Associate
The Endocrine Disruption Exchange

Christopher Portier, PhD, MS
Independent Environmental Health Scientist, Thun, Switzerland
Adjunct Professor, Maastricht University, Maastricht, The Netherlands.
Director NCEH/ATSDR (retired)

Paolo Rinaudo, MD PhD
Associate Professor
Reproductive Endocrinology and Infertility
University of California San Francisco

Frederick S. vom Saal, PhD
Curators' Distinguished Professor

Division of Biological Sciences
University of Missouri-Columbia

Barbara Sattler, RN, DrPH, FAAN
Professor, Public Health Program
University of California, San Francisco

Ted Schettler MD, MPH
Science and Environmental Health Network

Patrice Sutton, MPH
Research Scientist
Program on Reproductive Health and the Environment
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco

Lisa M Thompson, RN, FNP, MS, PhD
Associate Professor, Department of Family Health Care Nursing
Faculty Director, Global Health Sciences Doctoral Program
University of California, San Francisco

Ulrike Luderer, MD, PhD, MPH
Professor of Medicine, Developmental and Cell Biology, and Public Health
Director, Environmental Health Sciences Graduate Program
Interim Chief Division of Occupational and Environmental Medicine
Interim Director, Center for Occupational and Environmental Health

Lauren Zajac, MD, MPH
Assistant Professor
Department of Environmental Medicine and Public Health
Icahn School of Medicine
Mount Sinai

Marya G. Zlatnik, MD
Professor of Maternal Fetal Medicine
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco
Associate Director for Maternal Fetal Health & the Environment of the UCSF-Western States Pediatric Environmental Health Specialty Unit