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**Testimony of**  
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**Before the**  
**Health Subcommittee**  
**of the**  
**House Energy and Commerce Committee**  
**On**  
**H.R. 2827, the Keep Food Containers Safe From PFAS Act of 2019**  
**January 29, 2020**

Thank you for the opportunity to testify. My name is Melanie Benesh, and I am the legislative attorney for the Environmental Working Group, a national environmental health organization that has sought to address the risks posed by per- and poly- fluoroalkyl substances, or PFAS, for two decades.<sup>1</sup>

**Contamination from PFAS chemicals is a national public health and environmental emergency.** PFAS contaminate the blood and organs of nearly every living being, and experts estimate that 25 percent of Americans have elevated levels of PFAS in their blood serum.<sup>2</sup>

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<sup>1</sup> Bill Walker, *EWG and Toxic Fluorinated Chemicals: 20 Years in the Fight Against PFAS*, Environmental Working Group (July 24, 2019), <https://www.ewg.org/news-and-analysis/2019/07/ewg-and-toxic-fluorinated-chemicals-20-years-fight-against-pfas>.

<sup>2</sup> Centers for Disease Control and Prevention, National Biomonitoring Program, Per- and Polyfluorinated Substances (PFAS) Factsheet, [https://www.cdc.gov/biomonitoring/PFAS\\_FactSheet.html](https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html). (last updated April 7, 2017). *See also* David Andrews, *Insight: The Case for Regulating All PFAS Chemicals as a Class*, Bloomberg Environment (May 20, 2019), <https://news.bloombergenvironment.com/environment-and-energy/insight-the-case-for-regulating-all-pfas-chemicals-as-a-class/>.

PFAS are associated with serious health effects, even at very low doses.<sup>3</sup> PFAS exposure has been linked to kidney and testicular cancer, preeclampsia, ulcerative colitis, thyroid disease, high cholesterol,<sup>4</sup> reproductive and developmental harm,<sup>5</sup> and damage to the immune system.<sup>6</sup>

PFAS chemicals have long half-lives, and many can stay in the human body for decades.<sup>7</sup> Americans also face dozens of new exposures to PFAS every day – through our food, water, and air, from indoor dust, carpets, clothing, and cosmetics. EWG has so far confirmed the presence of PFAS at nearly 1,400 sites,<sup>8</sup> and the list of contaminated sites will grow as more testing is performed.<sup>9</sup> PFAS are “forever chemicals”<sup>10</sup> – PFAS that contaminate those sites will never break down in the environment and thus will remain there unless removed.

**Food is a significant source of PFAS exposure.** The Environmental Protection Agency has stated that, for the general population, “the dominant source of human exposure to PFOA [and PFOS]<sup>11</sup> is expected to be from the diet.”<sup>12</sup> In 2018, the European Food Safety Authority, or

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<sup>3</sup> Impacts to mammary gland development have been associated with low-level doses of PFOA. See, e.g., Dierdre K. Tucker et al., *The Mammary Gland is a Sensitive Pubertal Target in CD-1 and C57Bl/6 Mice Following Perinatal Perfluorooctanoic Acid (PFOA) Exposure*, 54 *Reproductive Toxicology* 26 (2015), <https://www.ncbi.nlm.nih.gov/pubmed/25499722>; Madisa B. Macon et al., *Prenatal Perfluorooctanoic Acid Exposure in CD-1 Mice: Low Dose Developmental Effects and Internal Dosimetry*, 122 *Toxicological Sciences* 131 (2011), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3143465/>; Sally S. White et al., *Gestational and Chronic Low-Dose PFOA Exposures and Mammary Gland Growth and Differentiation in Three Generations of CD-1 mice*, 119 *Env'tl Health Perspectives* 1070 (2011), <https://www.ncbi.nlm.nih.gov/pubmed/21501981>; PFOA, PFOS, PFHxS and PFDeA are also associated with reduced effectiveness of vaccines, even at low doses. See Anna Reade, Tracy Quinn, & Judith S. Schreiber, *Scientific & Policy Assessment for Per- and Polyfluoroalkyl Substances in Drinking Water*, Natural Resources Defense Council (April 12, 2019), [https://www.nrdc.org/sites/default/files/media-uploads/nrdc\\_pfas\\_report.pdf](https://www.nrdc.org/sites/default/files/media-uploads/nrdc_pfas_report.pdf).

<sup>4</sup> C8 Science Panel, C8 Probable Link Reports, [http://www.c8sciencepanel.org/prob\\_link.html](http://www.c8sciencepanel.org/prob_link.html) (last visited Jan. 25, 2020).

<sup>5</sup> Alexis Temkin, *PFAS and Developmental and Reproductive Toxicity: An EWG Fact Sheet*, Environmental Working Group (Sept. 19, 2019), <https://www.ewg.org/news-and-analysis/2019/09/pfas-and-developmental-and-reproductive-toxicity-ewg-fact-sheet>.

<sup>6</sup> Tasha Stoiber, *PFAS Chemicals Harm the Immune System, Decrease Response to Vaccines, New EWG Review Finds*, Environmental Working Group (June 21, 2019), <https://www.ewg.org/news-and-analysis/2019/06/pfas-chemicals-harm-immune-system-decrease-response-vaccines-new-ewg>.

<sup>7</sup> Half-life estimates range from over two years from PFOA and PFNA to 5.4 years for PFOS to 8.5 years for PFHxS. See Reade et al., *supra* note 3, at 12.

<sup>8</sup> See Environmental Working Group, *PFAS Contamination in the US*, [https://www.ewg.org/interactive-maps/2019\\_pfas\\_contamination/map/](https://www.ewg.org/interactive-maps/2019_pfas_contamination/map/) (last visited Jan. 26, 2020).

<sup>9</sup> Several states are planning additional testing of tap and ground water, and ground water testing was required by H.R. 2500, the National Defense Authorization Act for FY 2020.

<sup>10</sup> Joseph G. Allen, *These Toxic Chemicals are Everywhere – Even in Your Body. And They Won't Ever Go Away*, Wash. Post (Jan. 2, 2018), [https://www.washingtonpost.com/opinions/these-toxic-chemicals-are-everywhere-and-they-wont-ever-go-away/2018/01/02/82e7e48a-e4ee-11e7-a65d-1ac0fd7f097e\\_story.html](https://www.washingtonpost.com/opinions/these-toxic-chemicals-are-everywhere-and-they-wont-ever-go-away/2018/01/02/82e7e48a-e4ee-11e7-a65d-1ac0fd7f097e_story.html)

<sup>11</sup> PFOA and PFOS are two types of well-studied PFAS.

<sup>12</sup> See Environmental Protection Agency, *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)* at 18 (May 2016), [https://www.epa.gov/sites/production/files/2016-05/documents/pfoa\\_health\\_advisory\\_final\\_508.pdf](https://www.epa.gov/sites/production/files/2016-05/documents/pfoa_health_advisory_final_508.pdf); Environmental Protection Agency, *Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS)* at 19 (May 2016); [https://www.epa.gov/sites/production/files/2016-05/documents/pfos\\_health\\_advisory\\_final\\_508.pdf](https://www.epa.gov/sites/production/files/2016-05/documents/pfos_health_advisory_final_508.pdf)

EFSA, recommended a dramatic reduction in daily intake levels of PFAS from food after finding that the intake of a considerable portion of the population exceed recommended levels.<sup>13</sup>

PFAS infiltrates our food supply through several pathways:

- Contaminated water fed to livestock can bioaccumulate in the animals, contaminating meat and milk.<sup>14</sup>
- Plants, especially leafy greens, can also take up PFAS from contaminated water and soil.<sup>15</sup>
- Fertilizer derived from sewage sludge contaminated with PFAS chemicals can in turn contaminate food and animal feed.<sup>16</sup>

**PFAS also migrate into food from food packaging.**<sup>17</sup> The FDA has approved 19 distinct PFAS formulations for use in food packaging. However, there may be more unique PFAS present in food packaging and food, because the approved PFAS chemicals contain mixtures of various forms of PFAS, can break down into other PFAS, or may contain PFAS impurities.<sup>18</sup> Independent tests have confirmed the presence of PFAS in food containers and wrappers in

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<sup>13</sup> EFSA Panel on Contaminants in the Food Chain, *Risk to Human Health Related to the Presence of Perfluorooctane Sulfonic Acid and Perfluorooctanoic Acid in Food*, 16 EFSA Journal 5194 (2018), <https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2018.5194>; see also International Chemical Secretariat, *Scientists Just Cut the Tolerable Intake of PFAS by 99.9%* (Jan. 30, 2019), <https://chemsec.org/scientists-just-cut-the-tolerable-intake-of-pfas-by-999/>.

<sup>14</sup> See Environmental Protection Agency, *supra* note 12. A dairy farmer in New Mexico was forced to euthanize his entire herd as a result of PFAS-contaminated water from nearby Canon Air Force Base. Amy Linn, *'This Has Poisoned Everything' – Pollution Casts Shadow Over New Mexico's Dairy Industry*, *The Guardian* (Feb. 20, 2019), <https://www.theguardian.com/us-news/2019/feb/20/new-mexico-contamination-dairy-industry-pollution>.

<sup>15</sup> See, e.g., Rosella Ghisi et al., *Accumulation of Perfluorinated Alkyl Substances (PFAS) in Agricultural Plants: A Review*, 160 *Env'tl Research* 326 (2019), <https://www.ncbi.nlm.nih.gov/pubmed/30502744>. In 2018, FDA sampling of produce taken from a farmers' market 10 miles downstream from a Chemours facility in North Carolina found most of the PFAS tested for, including one sample with 1,200 ppt of GenX. A copy of the FDA poster can be found here: <http://blogs.edf.org/health/files/2019/06/FDA-PFAS-in-food-poster-presentation-2-5-30-19.pdf>.

<sup>16</sup> In 2018, a Maine dairy farmer who had applied sewage to his land found high levels of PFAS in milk produced by his cows. He had to destroy that milk and is now facing bankruptcy. Pat Rizzuto, *Denied Both Sales and Aid, Face of PFAS Wonders How to Survive*, *Bloomberg* (Jan. 10, 2020), <https://news.bloombergenvironment.com/environment-and-energy/denied-both-sales-and-aid-face-of-pfas-wonders-how-to-survive>. Subsequent testing by the Maine Department of Environment found that every single sample of sludge tested was contaminated with at least one kind of PFAS. Sharon Lerner, *Toxic PFAS Chemicals Found in Maine Farms Fertilized with Sewage Sludge*, *The Intercept* (June 7, 2019), <https://theintercept.com/2019/06/07/pfas-chemicals-maine-sludge/>.

<sup>17</sup> See, e.g., Timothy H. Begley et al., *Migration of Fluorochemical Paper Additives From Food-Contact Paper into Foods and Food Simulants*, 25 *Food Additives and Contaminants* 384 (2008), <https://www.tandfonline.com/doi/abs/10.1080/02652030701513784>; Timothy H. Begley et al., *Perfluorochemicals: Potential Sources of and Migration from Food Packaging* 22 *Food Additives and Contaminants* 1023 (2005), <https://www.ncbi.nlm.nih.gov/pubmed/16227186>.

<sup>18</sup> Department of Toxic Substances Control, Safer Products & Workplaces Program, *Work Plan Implementation: Food Packaging with Perfluoroalkyl and Polyfluoroalkyl Substances (PFASs)* (Oct. 24, 2019), [https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/10/Food-Packaging\\_Perfluoroalkyl-and-Polyfluoroalkyl-Substances-PFASs.pdf](https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/10/Food-Packaging_Perfluoroalkyl-and-Polyfluoroalkyl-Substances-PFASs.pdf).

restaurants<sup>19</sup> and grocery chains.<sup>20</sup> In 20 fast-food wrappers collected in 2014 and 2015, 27 different PFAS were detected, including PFOA, GenX, ADONA, and PFBS.<sup>21</sup>

The extent to which PFAS migrate from packaging into food can vary depending on the amount, type, and chain length of the PFAS in question, and the type of food, contact time, and temperature.<sup>22</sup> Despite brief periods of contact between PFAS food wrappers and the fast food it is used for, studies have shown that the high temperature and emulsified fat content of fast food can increase the extent to which some kinds of PFAS migrate into food.<sup>23</sup> Short-chain PFAS chemicals – many of which were designed to replace long-chain PFAS chemicals<sup>24</sup> – migrate more readily into food from paper bowls than their long-chain analogues.<sup>25</sup> A recent study found that eating meals from fast food and pizza restaurants and other types of restaurants was generally associated with higher levels of PFAS in blood. Eating popcorn was associated with significantly higher blood serum levels of PFOA, PFNA, PFDA, and PFOS.<sup>26</sup>

The risks of PFAS exposure from fast-food packaging is of particular concern for children, because research shows that one-third of children consume fast food daily.<sup>27</sup> Studies show that children face a higher risk of multiple health impacts from PFAS, including immunity, infection, asthma, cardio-metabolic, neurodevelopmental, thyroid, renal, and puberty onset.<sup>28</sup>

Grease-resistant coatings for paper food packaging was an early use of PFAS developed and commercialized by DuPont. Although DuPont and 3M have known about the health risks from PFAS since the 1960s, they did not share that information with regulators like the FDA.<sup>29</sup> In 1975, DuPont warned 3M, but not the FDA, about the “toxic effects” in food contact products

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<sup>19</sup> Laurel A. Schaider et al., *Fluorinated Compounds in U.S. Fast Food Packaging*, 4 *Env'tl Sci. and Technology Letters* 105 (2017), <https://pubs.acs.org/doi/pdf/10.1021/acs.estlett.6b00435>.

<sup>20</sup> Safer Chemicals Healthy Families, Toxic-Free Future, & Mind the Store, *Take Out Toxics: PFAS Chemicals in Food Packaging* (Dec. 11, 2018), [https://saferchemicals.org/wp-content/uploads/2018/12/saferchemicals.org\\_take\\_out\\_toxics\\_pfas\\_chemicals\\_in\\_food\\_packaging.pdf?x15132](https://saferchemicals.org/wp-content/uploads/2018/12/saferchemicals.org_take_out_toxics_pfas_chemicals_in_food_packaging.pdf?x15132).

<sup>21</sup> See Schaider et al., *supra* note 19, supporting information, [https://pubs.acs.org/doi/suppl/10.1021/acs.estlett.6b00435/suppl\\_file/ez6b00435\\_si\\_001.pdf](https://pubs.acs.org/doi/suppl/10.1021/acs.estlett.6b00435/suppl_file/ez6b00435_si_001.pdf).

<sup>22</sup> Schaider et al., *supra* note 19.

<sup>23</sup> *Id.*

<sup>24</sup> Food & Drug Admin., *Update on Perfluorinated Grease-Proofing Agents*, <https://www.fda.gov/food/inventory-effective-food-contact-substance-fcs-notifications/update-perfluorinated-grease-proofing-agents> (last visited Jan. 25, 2020).

<sup>25</sup> Schaider et al., *supra* note 19.

<sup>26</sup> Herbert P. Susmann, Laurel A. Schaider, Kathryn M. Rodgers, & Ruthann A. Rudel, *Dietary Habits Related to Food Packaging and Population Exposure to PFASs*, 127 *Env'tl Health Perspectives* 107003-1 (Oct. 9, 2019), <https://ehp.niehs.nih.gov/doi/10.1289/EHP4092>.

<sup>27</sup> Sundeep Vikraman, M.D. et al., *Caloric Intake from Fast Food Among Children and Adolescents in the United States, 2011-2012*, Centers for Disease Control and Prevention, National Center for Health Statistics Data Brief No. 213 (Sept. 2015), <https://www.cdc.gov/nchs/products/databriefs/db213.htm>.

<sup>28</sup> Kristen M. Rappazzo, Evan Coffman, & Erin P. Hines, *Exposure to Perfluorinated Alkyl Substances and Health Outcomes in Children: A Systematic Review of the Epidemiological Research*, 14 *Int. J. Environ. Research and Public Health* 691 (2017), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5551129/>.

<sup>29</sup> Environmental Working Group, *For Decades, Polluters Knew PFAS Chemicals Were Dangerous But Hid Risks From Public*, <https://www.ewg.org/pfastimeline/> (last visited Jan. 25, 2020).

such as wrappers and recommended that certain kinds of PFAS not be used in food.<sup>30</sup> In 1987, DuPont found that the company's marquee paper packaging coating, Zonyl RP, could contaminate food at over three times the level agreed on between DuPont and the FDA, but it did not alert the FDA and declined to make safer alternatives.<sup>31</sup> As a result, the FDA permitted the use of PFAS in food packaging without having received critical toxicity data.<sup>32</sup>

**PFAS exemplify how our food chemicals and food contact substances review system is broken.** In 1958, following a lengthy select committee investigation, Congress overhauled the FDA's authority to regulate chemicals in food and food contact substances.<sup>33</sup> The Food Additives Amendment of 1958 created a premarket system for both direct<sup>34</sup> and indirect<sup>35</sup> food additives and a rigorous petition approval process.<sup>36</sup> The 1958 law requires the FDA to determine that the use of a food additive is safe, defined as a "reasonable certainty to cause no harm,"<sup>37</sup> before approving the use of the additive. When making a safety determination, the 1958 law requires the FDA to consider exposure, the cumulative effects of similar chemicals, and other appropriate safety factors.<sup>38</sup>

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<sup>30</sup> See Filed Letter from R.J. Seffl to J.D. Lazerte, detailing DuPont's concerns about potential use of a PFAS in food products (Dec. 5, 1975), [https://static.ewg.org/reports/2019/pfa-timeline/1975\\_OralToxicity-Concerns.pdf?\\_ga=2.6417905.2103539113.1579796625-1525964376.1554386940](https://static.ewg.org/reports/2019/pfa-timeline/1975_OralToxicity-Concerns.pdf?_ga=2.6417905.2103539113.1579796625-1525964376.1554386940).

<sup>31</sup> As part of the indirect food additive application for Zonyl RP, DuPont told the agency it expected an extraction rate of only 0.2 parts per million. This 1987 internal memorandum from R.H. Goldbaum shows that Zonyl RP could contaminate food at 0.62 parts per million, [https://static.ewg.org/files/dupont3.pdf?\\_ga=2.221412632.1871767776.1579387823-1525964376.1554386940](https://static.ewg.org/files/dupont3.pdf?_ga=2.221412632.1871767776.1579387823-1525964376.1554386940). See also Callie Lyons, *Stain-Resistant, Nonstick, Waterproof, and Lethal: The Hidden Dangers of C8 at 76* (Praeger 2007), <https://epdf.pub/stain-resistant-nonstick-waterproof-and-lethal-the-hidden-dangers-of-c8.html>.

<sup>32</sup> According to a former DuPont chemical engineer and whistleblower, DuPont also negotiated a weaker standard for approval for PFAS chemicals with the FDA in the mid-1960s, after FDA initially rejected its food additive petition based on liver toxicity. Although the FDA usually required a two-year study for new chemicals, it approved DuPont's food packaging chemicals based on a 90-day test and a thousand-fold safety factor. According to the whistleblower, that standard was also based on the assumption that PFAS chemicals would exit the body quickly, when in fact DuPont knew that many PFAS bioaccumulate in the body for long periods. See Press Release, Environmental Working Group, Former DuPont Top Expert: Company Knew, Covered Up Pollution of Americans' Blood for 18 years (Nov. 16, 2005), <https://www.ewg.org/news/news-releases/2005/11/16/former-dupont-top-expert-company-knew-covered-pollution-americans>. See also Environmental Working Group, *supra* note 29.

<sup>33</sup> The 1958 law was a response to the rapid industrialization of food production after World War II and the significant increase in the number and diversity of chemicals used in food and in the production of food with minimal oversight and significant data gaps regarding the long-term health risks from this ever-expanding universe of chemicals. Congress passed the 1958 Food Additive Amendments following a seven-year comprehensive investigation by the Select Committee to Investigate the Use of Chemicals in Food and Cosmetics, led by Representative James Delaney. See National Archives, *Guide to House Records: Chapter 22: 1947-1968 Chemicals in Food and Cosmetics, Records of the Select Committees of the House of Representatives*, <https://www.archives.gov/legislative/guide/house/chapter-22-select-food-and-cosmetics.html>.

<sup>34</sup> Direct additives are substances intentionally added directly to food, such as sweeteners, thickeners, emulsifiers and preservatives.

<sup>35</sup> Indirect food additives include food-packaging materials and contaminants from food-processing equipment.

<sup>36</sup> 21 U.S.C. § 348(b); see also 21 C.F.R. Part 171.

<sup>37</sup> S. Rep. No. 85-2422 at 2-3; see also 21 C.F.R. § 170.3(i).

<sup>38</sup> 21 U.S.C. § 348(c)(5). Additional safety factors can include things like accounting for consumption by vulnerable populations like children and pregnant women or lowering safety thresholds to account for uncertainty from data gaps.

The intended result of the select committee investigation and the passage of the Food Additives Amendment of 1958 was a health-protective law designed to ensure that food chemicals are allowed in food and food contact materials only after an affirmative FDA determination of safety based on robust health and safety data. However, as the current PFAS contamination crisis demonstrates, the review system Congress envisioned in 1958 is not the review system that exists today.

Although Congress clearly intended that the FDA ensure that food packaging chemicals pose a “reasonable certainty of no harm,” few if any PFAS chemicals used in food packaging have been subject to meaningful FDA review. PFAS can be authorized for use in food in three separate ways: through a formal food additive petition, the “generally recognized as safe” loophole, or, as is most common today, a food contact notification.

Nearly all of the PFAS approved by food additive petitions and still authorized for use today were approved before 1994, long before either the FDA or the EPA understood the health risks posed by PFAS chemicals or the amount of additional background exposure to PFAS Americans receive daily from drinking water, air, and other consumer products. The FDA has twice revisited the safety of PFAS that have been approved as indirect food additives and found that they do not meet the safety threshold of “reasonable certainty to cause no harm.”<sup>39</sup> However, the FDA is under no statutory obligation to reassess the safety of other PFAS used in food packaging that were authorized under the petition process.

Food chemicals rarely go through the rigorous food additive petition process originally envisioned by Congress. In fact, the FDA received fewer than 50 direct food additive petitions between 2000 and 2019.<sup>40</sup> The most transparent and rigorous process for authorizing new food chemicals has now become the method of last resort. Instead, industry has taken advantage of a loophole in the 1958 law that allows food chemicals to evade FDA review if deemed “generally recognized as safe,” or GRAS, by the FDA, a food or chemical company, or a food industry

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<sup>39</sup> In 2010, following an agency review of the scientific literature, FDA toxicologists raised safety concerns about the safety of certain long-chain PFAS used in food packaging. See Memorandum from Penelope A. Rice, Ph.D., FDA Division of Food Contact Notifications, to Paul Honigfort, Ph.D., FDA, Re: Critical Review of Studies Conducted With  $\geq$  C8 Perfluorinated Compounds Concerning Selected Endpoints (Sept. 30, 2010), <https://www.regulations.gov/document?D=FDA-2015-F-0714-0015>. The FDA asked three companies for additional test data and the companies opted to phase those PFAS out in 2011. See Food & Drug Admin., *supra* note 24. However, that voluntary agreement was legally unenforceable and did not ban the use of those PFAS. In 2015, several NGOs, including EWG, petitioned the FDA to revoke approval for three of those long-chain PFAS chemicals approved for use in food packaging between 1967 and 1997 on the basis that those long-chain PFAS were no longer “reasonably certain to cause no harm.” Natural Resources Defense Council et al., Filing of Food Additive Petition, 80 Fed. Reg. 13508 (March 9, 2015). After a lengthy toxicological assessment, the FDA revoked approval of those uses in response to the petition in 2016. Indirect Food Additives: Paper and Paperboard Components, 81 Fed. Reg. 5, (Jan. 4, 2016). In particular, the FDA found that those substances were no longer “reasonably certain to cause no harm” because of concerns about pre- and post-natal developmental toxicity, reproductive toxicity, and bio-persistence. See Memorandum from Penelope A. Rice, Ph.D., FDA, to Paul Honigfort, Ph.D., FDA, Re: FAP 4B4809 (July 27, 2015), <http://www.regulations.gov/#!documentDetail;D=FDA-2015-F-0714-0016>.

<sup>40</sup> Thomas G. Neltner et al., *Navigating the U.S. Food Additive Regulatory Program*, 10 *Comprehensive Reviews in Food Science and Policy* 342 (Oct. 25, 2011), <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1541-4337.2011.00166.x> (finding that only 37 food additive petitions were filed between 2000 and 2010. An EWG review found that fewer than a dozen petitions for new additives were filed between Jan. 1, 2011, and Jan. 24, 2020).

trade association.<sup>41</sup> This exemption was written into the 1958 law to cover ingredients that were widely considered to be safe, such as flour, vinegar, and apples. Over time, industry has stretched the loophole to allow manufacturers to certify on their own behalf that a chemical is “safe” for use in food, without even notifying the FDA.<sup>42</sup> For these reasons, it is possible for these so-called secret GRAS food additives to be present in the marketplace without the FDA even knowing of their existence.<sup>43</sup>

Most PFAS chemicals used in food packaging today have been authorized through the food contact notification system.<sup>44</sup> The FDA began accepting food contact notifications in 2000 and finalized rules for the procedure in 2002. Instead of going through the more rigorous and transparent food additive petition process, the FDA reviews a notification from a manufacturer that the manufacturer has concluded that a substance is safe. Once a manufacturer submits a petition, the FDA has 120 days to object to the chemical’s use.<sup>45</sup> If the FDA does not act, the chemical is considered approved. If the FDA has no objections, it may choose to issue a “no objections” letter, which is also treated as an approval.

This process is markedly different from the food additive petition process originally envisioned by Congress under the Food Additives Amendment of 1958. With a food additive petition, the FDA is required to make an affirmative finding of safety based on the high safety standard of “reasonable certainty of no harm.” This involves a transparent review of the science and an opportunity for public comment. By contrast, with a food contact notification, instead of making an affirmative finding of safety, the FDA timely objects to a notification or issues a “no objections” letter, and there is no opportunity for public oversight. Instead of publication in the federal register, the basis for the FDA’s decision on a food contact notification is generally only

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<sup>41</sup> 21 USC § 321(s) (“The term ‘food additive’ means any substance the intended use of which results or may reasonably be expected to result, directly or indirectly, in its becoming a component or otherwise affecting the characteristics of any food (including any substance intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food; and including any source of radiation intended for any such use), **if such substance is not generally recognized**, among experts qualified by scientific training and experience to evaluate its safety, as having been adequately shown through scientific procedures (or, in the case of a substance used in food prior to January 1, 1958, through either scientific procedures or experience based on common use in food) **to be safe** under the conditions of its intended use; except that such term does not include . . .”) (emphasis added).

<sup>42</sup> Center for Science in the Public Interest et al., Comment re: Substances Generally Recognized as Safe, Docket No: FDA-1997-N-0020, [https://cspinet.org/sites/default/files/attachment/GRAS%20Comment%20FINAL\\_0.pdf](https://cspinet.org/sites/default/files/attachment/GRAS%20Comment%20FINAL_0.pdf)

<sup>43</sup> The FDA has received a voluntary GRAS notification for just one PFAS chemical, <https://www.accessdata.fda.gov/scripts/fdcc/index.cfm?set=GRASNotices&id=82>. However, because the FDA currently allows for secret GRAS determinations, it is unclear how many PFAS chemicals have been “approved” for use in food or food packaging through this legal loophole.

<sup>44</sup> Over the past 20 years, the FDA has accepted 70 “notices” submitted by 19 different companies on uses of PFAS as food contact substances and allowed them to become “effective.” Of the 70 notices that the FDA has allowed to become “effective,” three companies have informed FDA that they would voluntarily cease uses of seven food contact notices in 2011. See Food & Drug Admin., *supra* note 24. In August 2019, Chemours reported to the FDA that it had abandoned use of three PFAS with food contact notifications and asked it to withdraw those food contact notifications. See Catherine Boudreau, *Exclusive: Maker of ‘Forever Chemicals’ Cuts Food Packaging Products*, Politico (Aug. 9, 2019), <https://www.politico.com/story/2019/08/09/exclusive-maker-of-forever-chemicals-cuts-food-packaging-products-1648303>. For these reasons, there are still 60 active food contact notifications for PFAS.

<sup>45</sup> 21 U.S.C. § 348(h)(2).

available through a public records request. The FDA can also tacitly approve a substance by taking no action.

Although these notices have been cast as FDA approvals, they are not subject to significant scrutiny. The FDA does not require extensive toxicology studies before allowing a food contact substance like PFAS on the market. When the Environmental Defense Fund compared a subset of approved food contact notifications to the most protective minimum risk level for PFOS proposed by the Centers for Disease Control and Prevention,<sup>46</sup> every one exceeded the minimum risk levels.<sup>47</sup> The EDF also found in its review that toxicity data was consistently poor, failed to address cumulative risks, and failed to address many of the health outcomes associated with PFAS exposure.<sup>48</sup> One company, Daikin, actually conducted animal studies that found toxic effects to the teeth, liver, and kidney but withheld those studies from the FDA when it submitted its food contact notification seeking authorization to use the PFAS.<sup>49</sup>

In June 2019, the FDA announced that it was “reviewing the limited authorized uses of PFAS in food contact applications.”<sup>50</sup> It is critical that the FDA conduct this review in a manner that ensures that the PFAS under review meet the “reasonable certainty of no harm” standard. This includes taking into consideration the cumulative effects from mixtures of PFAS likely to be found in food contact materials and other sources of PFAS exposure, as is explicitly required under the law. When the FDA samples and tests food for PFAS, it also should test for the PFAS chemicals that have been approved as food contact substances, in addition to likely environmental contaminants.<sup>51</sup>

**The FDA is already taking steps to downplay the risks from PFAS.** At the same time that the FDA announced its plans to review effective PFAS food contact notices, it stated that it “does not have any indication that these substances are a human health concern, in other words a food safety risk in human food, at the levels found” in samples of food the FDA tested.<sup>52</sup> That’s

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<sup>46</sup> Agency for Toxic Substances and Disease Registry, Toxicological Profile for Perfluoroalkyls (2018) <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>.

<sup>47</sup> Tom Neltner & Maricel Maffini, *FDA Must Abandon its Flawed Assumptions When Reviewing Safety of Approved PFAS Uses in Food*, Environmental Defense Fund (Aug. 05, 2019), <http://blogs.edf.org/health/2019/08/05/fda-must-abandon-flawed-assumptions-reviewing-safety-pfas/>.

<sup>48</sup> Tom Neltner & Maricel Maffini, *Think PFAS in Food Packaging are Safe Simply Because FDA Accepted Their Use? Think Again.*, Environmental Defense Fund (Nov. 13, 2019), <http://blogs.edf.org/health/2019/11/13/think-again-pfas-food-packaging-safety/>.

<sup>49</sup> Tom Neltner & Maricel Maffini, *FDA-Approved PFAS: A Serious Breakdown in Assessing Food Additive Safety*, Environmental Defense Fund (Nov. 04, 2018), <http://blogs.edf.org/health/2018/11/04/fda-approved-pfas-breakdown-assessing-food-additive-safety/>.

<sup>50</sup> Food & Drug Admin., Per and Polyfluoroalkyl Substances (PFAS), <https://www.fda.gov/food/chemicals-and-polyfluoroalkyl-substances-pfas> (last visited Jan. 25, 2020).

<sup>51</sup> When the FDA recently sampled and tested food for PFAS as part of its 2019 total diet study, it tested for 16 different PFAS chemicals that are not approved as food contact substances. This means the FDA was primarily concerned about PFAS in food from environmental contamination, not from sanctioned uses. As part of its review of food contact notifications, the FDA should also test food to see how much PFAS are contaminating food from use in food contact materials.

<sup>52</sup> Ned E. Sharpless, FDA Statement: Statement on FDA’s Scientific Work to Understand Per- and Polyfluoroalkyl Substances (PFAS) in Food, and Findings from Recent FDA Surveys (June 11, 2019), <https://www.fda.gov/news-events/press-announcements/statement-fdas-scientific-work-understand-and-polyfluoroalkyl-substances-pfas-food-and-findings>. Given the results of that sampling and what is known about the health impacts of PFAS at very low



surprising, given what is known about the risks from PFAS in the diet, even at low levels. The FDA's statements downplaying PFAS risks and other recent actions raise concerns that the FDA may have prejudged the outcome of this review. There are four ways in which the FDA is basing the outcome of its review on certain preconceived assumptions.

**First, by using a limit of quantification instead of a detection limit, the FDA is underestimating how much PFAS get into the food supply.**<sup>53</sup> A limit of quantification, or LOQ, is different from a detection limit. The LOQ indicates the amount once it has been accurately measured and is usually three to 10 times greater than the limit of detection.<sup>54</sup> Detection means that the chemicals are present but cannot be precisely quantified. Reporting detections based on an LOQ rather than a detection limit will lower the number of overall detections.

The FDA used an LOQ to limit detections when it validated a new method for testing 16 types of PFAS in bread, lettuce, milk, and fish, in October 2019.<sup>55</sup> When the FDA released the new method, it also revised its earlier test results, released in June 2019, based on the application of the new validated method. The new test method established a method detection limit, or MDL, for each food group tested. As with an LOQ, an MDL is described by the FDA as “the level at which PFAS can be reliably measured over repeated testing.”<sup>56</sup>

The results of the new test method greatly reduce the number of positive samples. That is because several of the FDA's previous test results included positive results at low levels in certain foods. Under the new validated method, those low levels were below the MDL and thus reported as non-detects. As a result, the FDA now claims that the PFAS chemicals it tested for were not detected in most of the food that was tested, even if it is possible those PFAS were present in small amounts.<sup>57</sup>

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doses, it is concerning that the FDA would downplay the risks. When FDA samples were released to the public, there were detects of all 16 PFAS tested for in produce samples from farmer's markets in North Carolina (<https://www.fda.gov/media/127848/download>), as well as in 10 milk samples from New Mexico (<https://www.fda.gov/media/127850/download>).

<sup>53</sup> For example, in its June 2019 summary of the samples tested from the mid-Atlantic region, the FDA indicated that 14 of 91 samples had detectable levels over *the Limit of Quantification*. It is unclear whether additional samples had detections under the LOQ. See Tom Neltner & Maricel Maffini, *FDA Concluded PFAS in Food are Safe. Now it has to Show how it Reached that Conclusion.*, Environmental Defense Fund (Aug. 01, 2019), <http://blogs.edf.org/health/2019/08/01/fda-pfas-food-conclusion-safety/>.

<sup>54</sup> *Id.*

<sup>55</sup> Susan Genualdi & Lowri deJager, Single-Laboratory Validation per the Guidelines for the Validation of Chemical Methods for the FDA FVM Program 2<sup>nd</sup> Ed. (Nov. 01, 2019), <https://www.fda.gov/media/131510/download>.

<sup>56</sup> Food & Drug Admin. Constituent Update: FDA Makes Available Testing Method for PFAS in Foods and Final Results from Recent Surveys (Oct. 31, 2019), <https://www.fda.gov/food/cfsan-constituent-updates/fda-makes-available-testing-method-pfas-foods-and-final-results-recent-surveys>

<sup>57</sup> Detections from the FDA's total diets study results dropped from detects in 14 out of 91 samples to just two out of 91 samples. The FDA's produce survey contained 20 samples. With the new method, detects dropped from 19 to 16 samples. An EDF analysis found that 104 of the 182 PFAS detects in samples collected from North Carolina and New Mexico were replaced with <MDL in FDA's new data tables. See Tom Neltner & Maricel Maffini, *FDA's Updated Results for PFAS in Food Suggest Progress but Raise Questions About its Method*, Environmental Defense Fund (Nov. 20, 2019), <http://blogs.edf.org/health/2019/11/20/fdas-updated-results-for-pfas-in-food-suggest-progress-but-raise-questions-about-its-method/>.

Some states, such as Massachusetts, have found ways to report detections that are below the LOQ but above the detection limit.<sup>58</sup>

**Second, the FDA’s new MDLs for PFAS were calculated with a stricter methodology than the FDA has used for other foods, and this has resulted in fewer detects.** In its methodology, the FDA defines the MDL as “the statistically calculated minimum concentration that can be measured with 99 percent confidence that the reported value is greater than zero.”<sup>59</sup> Notably, this is the same definition the EPA uses for wastewater and sludge permitting guidelines.<sup>60</sup> However, the FDA often does not use EPA guidelines for its validation of chemical test methods, given the differences between water and food. For example, the FDA used a 95 percent confidence level for its 2015 validation method to measure heavy metals in food in the 2015 Total Diet Study.<sup>61</sup> A 99 percent confidence level rather than a 95 percent confidence level will likely result in fewer reported detections, artificially limiting FDA’s overall estimate of the amount of PFAS present in food. If the FDA undercalculates the amount of PFAS present in food, it may also then underestimate the potential risk to human health.

**Third, the FDA may be ignoring critical health effects in its risk analysis of PFAS chemicals.** In its analysis of some PFAS substances thus far, the FDA has relied on the reference dose<sup>62</sup> developed by the EPA to estimate safety thresholds.<sup>63</sup> That reference does not adequately consider some critical health effects associated with PFAS exposure, like altered mammary gland development<sup>64</sup> and reduced effectiveness of vaccines.<sup>65</sup> State governments like New Jersey<sup>66</sup> and Michigan<sup>67</sup> have relied in part on these health impacts to develop more health-protective reference doses. The European Food Safety Authority developed more health-

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<sup>58</sup> Massachusetts Department of Environmental Protection, Draft Drinking Water PFAS Regulation, at 8, <https://www.mass.gov/doc/310-cmr-2200-pfas-amendments/download> (“If an analytical result is equal to or greater than one-third of the MRL but less than the MRL, then the Running Quarterly Average shall be calculated using one-half of the MRL as the concentration for that PFAS”). MRL stands for Minimum Reporting Level and, like, an LOQ, is defined as “the minimum concentration that can be reported as a quantitated value for a target analyte in a sample following analysis.”

<sup>59</sup> Genualdi & deJager, *supra* note 55, at 17.

<sup>60</sup> 40 C.F.R. Appendix B to Part 136, Definition and Procedure for the Determination of the Method Detection Limit- Revision 1.11.

<sup>61</sup> Patrick J. Gray, William R. Mindak, & John Cheng, Elemental Analysis Manual for Food and Related Products: 4.7. Inductively Couple Plasma-Mass Spectrometric Determination of Arsenic, Cadmium, Chromium, Lead, Mercury and Other Elements in Food Using Microwave Assisted Digestion (March 2015), <https://www.fda.gov/media/87509/download>. See also Neltner & Maffini, *supra* note 57.

<sup>62</sup> A reference dose is an estimate of a daily exposure level for the human population, including vulnerable populations, that is likely to be without an appreciable risk of harmful effects.

<sup>63</sup> See Env’tl Protection Agency, *supra* note 12.

<sup>64</sup> See, e.g., Tucker et al., Macon et al., & White et al., *supra* note 3.

<sup>65</sup> See Stoiber, *supra* note 6.

<sup>66</sup> See, e.g., Gloria B. Post & Jessie A. Gleason, Technical Support Document: Interim Specific Ground Water Criterion for Perfluorooctanoic Acid (PFOA, C8)(CAS #335-67-1; Chemical Structure: CF<sub>3</sub>(CF<sub>2</sub>)<sub>6</sub>COOH), New Jersey Department of Environmental Protection, Division of Science, Research and Environmental Health, at 4 (Jan. 2019), <https://www.nj.gov/dep/dsr/Technical%20Support%20Document%20Draft%20ISGWQC%20for%20PFOA.pdf>.

<sup>67</sup> Michigan Department of Health and Human Services, Division of Environmental Health, PFAS Action Response Team Human Health Working Group, Public Health Drinking Water Screening Levels for PFAS (Feb. 22, 2019), [https://www.michigan.gov/documents/pfasresponse/MDHHS\\_Public\\_Health\\_Drinking\\_Water\\_Screening\\_Levels\\_for\\_PFOA\\_651683\\_7.pdf](https://www.michigan.gov/documents/pfasresponse/MDHHS_Public_Health_Drinking_Water_Screening_Levels_for_PFOA_651683_7.pdf).

protective weekly exposure amounts based on human data in epidemiological studies,<sup>68</sup> data the EPA also failed to consider when calculating its reference dose.

**Fourth, the FDA is also failing to adequately assess the risks from short-chain PFAS, many of which were commercialized to replace long-chain PFAS phased out under pressure from the FDA and EPA.** For at least one short-chain PFAS, the FDA is using as a safety threshold a 50 parts per billion concentration in the diet, which is 100 times higher than the default threshold being applied to PFOA and PFOS, two long-chain PFAS.<sup>69</sup> To justify the different safety thresholds, the FDA is drawing on the assumption that polymers of short-chain PFAS do not build up in the body.<sup>70</sup> But that assumption is inconsistent with a peer-reviewed study by the FDA's own scientists.<sup>71</sup> According to the FDA peer-reviewed study, short-chain PFAS replacement chemicals can also build up in the body for long periods of time. Moreover, EPA toxicity assessments show that at least some short-chain PFAS chemicals, like GenX and PFBS, prompt many of the same health concerns as the long-chain PFAS they replaced.<sup>72</sup>

In light of the health threats posed by PFAS and the FDA's failure to properly assess the safety of PFAS in food packaging, Congress should quickly end the use of PFAS in food packaging, as proposed by H.R. 2827, the Keep Food Containers Safe From PFAS Act of 2019.

**There are many food-packaging alternatives available,<sup>73</sup> and states and retailers are not waiting for the FDA to remove harmful PFAS from food packaging.** Washington state was the first to ban PFAS in 2018, which will take effect in 2022.<sup>74</sup> Maine also passed a law authorizing the state Department of Environmental Protection to ban PFAS in food packaging as early as 2022.<sup>75</sup> San Francisco has banned bowls that have been intentionally manufactured using PFAS.<sup>76</sup> California is considering reviewing and regulating PFAS in food packaging under its

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<sup>68</sup> See EFSA Panel, *supra* note 13; see also Agency for Toxic Substances & Disease Registry, *supra* note 46.

<sup>69</sup> See Neltner & Maffini, *supra* note 48.

<sup>70</sup> See Neltner & Maffini, *supra* note 47.

<sup>71</sup> Shrutti V. Kabadi et al., *Internal Exposure-Based Pharmacokinetic Evaluation of Potential for Biopersistence of 6:2 Fluorotelomer Alcohol (FTOH) and its Metabolites*, 112 *Food and Chemical Toxicology* 375 (Feb. 2018), <https://www.sciencedirect.com/science/article/pii/S0278691518300127?via%3DIihub>. See also Maricel Maffini & Tom Neltner, *The Elephant in the Room: Potential Biopersistence of Short-Chain PFAS*, Environmental Defense Fund (Feb. 20, 2019), <http://blogs.edf.org/health/2019/02/20/potential-biopersistence-short-chain-pfas/>.

<sup>72</sup> See National Toxicology Program, Per- and Polyfluoroalkyl Substances, <https://ntp.niehs.nih.gov/whatwestudy/topics/pfas/index.html> (last visited Jan. 27, 2020)(finding similar toxicity for long and short chain PFAS); Env'tl Protection Agency, GenX and PFBS Draft Toxicity Assessments (2018), <https://www.epa.gov/pfas/genx-and-pfbs-draft-toxicity-assessments>. See also Cheryl Hogue, *Short-Chain and Long-Chain PFAS Show Similar Toxicity*, *US National Toxicology Program Says*, Chemical & Engineering News (Aug. 24, 2019), <https://cen.acs.org/environment/persistent-pollutants/Short-chain-long-chain-PFAS/97/i33>.

<sup>73</sup> Several materials can be used as PFAS alternatives, including bamboo, palm leaf, bio-wax, and polylactic acid – which is a compostable bio-based material derived from renewable substances like potato, wheat and corn starch. In many cases, packaging materials can also simply be used without a coating material.

<sup>74</sup> H.B. 2658 (Wash. 2018).

<sup>75</sup> H.P. 1043, 129th Leg. (Maine 2019).

<sup>76</sup> City of San Francisco, Ordinance 201-18 (File No. 180519)(Aug. 10, 2018).

green chemistry law.<sup>77</sup> Denmark will ban all PFAS in paper and cardboard packaging by July 2020.<sup>78</sup>

Responsible retailers are also moving away from PFAS. Burger King reportedly stopped using PFAS-coated paper in 2002,<sup>79</sup> and McDonald's pledged to move to PFAS-free coatings in 2006.<sup>80</sup> Panera has started the process for switching to PFAS-free baguette bags and will continue to transition to PFAS alternatives in 2020.<sup>81</sup> Taco Bell will also phase out PFAS by 2025.<sup>82</sup> In December 2018, both Whole Foods and Trader Joe's stated that they were working toward PFAS-free packaging.<sup>83</sup> Ahold Delhaize (parent company of Food Lion, Giant Food, GIANT/MARTIN'S, Hannaford, Peapod and Stop & Shop, and its U.S. services company, Retail Business Services) announced in September that it would put a restriction on PFAS and other chemicals.<sup>84</sup> As of Jan. 1, 2020, the Biodegradable Products Institute will no longer certify any product as compostable if it contains intentionally added PFAS.<sup>85</sup>

Reducing the amount of PFAS in the environment, marketplace, and people will require swift and decisive action. Eliminating non-essential uses like food packaging is an important first step toward reducing exposures.<sup>86</sup>

**Congress should quickly pass H.R. 2827 and remove PFAS from food contact substances.**

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<sup>77</sup> California Department of Toxic Substances Control, *supra* note 18.

<sup>78</sup> See Press Release, The Minister of Food is Ready to Ban Fluoride Substances, Danish Veterinary and Food Administration (Sept. 2, 2019), <https://www.foedevarestyrelsen.dk/Nyheder/Aktuelt/Sider/Nyheder%202019/F%C3%B8devareministeren-er-klar-til-at-forbyde-fluorstoffer.aspx> (translated from Dutch). See also Katie Hunt, *Denmark Just Became the First Country to Ban PFAS 'Forever Chemicals' From Food Packaging*, CNN (Sept. 4, 2019), <https://www.cnn.com/2019/09/04/health/denmark-pfas-food-packaging-ban-intl/index.html>.

<sup>79</sup> Lyons, *supra* note 31, at 113.

<sup>80</sup> Sara Schaefer Muñoz, *EPA Probes Safety of Key Chemical in Teflon*, Wall Street Journal (Jan. 31, 2006).

<sup>81</sup> Mind the Store, Retailer Report 2019, Panera Bread <https://retailerreportcard.com/retailer/panera-bread/> (last visited Jan. 25, 2020).

<sup>82</sup> Press Release, Taco Bell® Rings in 2020 With Bold New Commitments (Jan. 9, 2020), <https://www.tacobell.com/news/taco-bell-2020-commitments?selectedTag=&selectYear=2020>.

<sup>83</sup> Mike Schade & Laurie Valeriano, *Whole Foods, Trader Joe's Pledge Initial Action on Toxic PFAS*, Safer Chemicals Healthy Families (Dec. 12, 2018), <https://saferchemicals.org/2018/12/12/whole-foods-trader-joes-pledge-initial-action-on-toxic-pfas/>.

<sup>84</sup> Press Release, Ahold Delhaize USA Brands Announce Commitment to Sustainable Chemistry, Transparent Products and Packaging (Sept. 19, 2019), <http://www.globenewswire.com/news-release/2019/09/19/1918074/0/en/Ahold-Delhaize-USA-Brands-Announce-Commitment-to-Sustainable-Chemistry-Transparent-Products-and-Packaging.html?culture=en-us>.

<sup>85</sup> Biodegradable Products Institute, Fluorinated Chemicals, <https://bpiworld.org/Fluorinated-Chemicals> (last visited Jan. 25, 2020).

<sup>86</sup> The Madrid Statement, endorsed by 200 scientists, argues for ending the use of PFAS when uses are non-essential or when safer alternatives exist Arlene Blum et al, *The Madrid Statement on Poly- and Perfluoroalkyl Substances*, 123 *Env'tl Health Perspectives* A107 (May 01, 2015), <https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.1509934>. See also Ian T. Cousins et al., *The Concept of Essential Use for Determining When Uses of PFAS Can Be Phased Out*, 21 *Env'tl Science: Processes and Impacts* 1803 (2019), <https://pubs.rsc.org/en/content/articlelanding/2019/em/c9em00163h#!divAbstract>.

Congress should take other steps to reduce overall exposure to PFAS – including in water, food, cosmetics, and other household products. In particular, Congress should, as proposed in H.R. 535, the PFAS Action Act:

- Set a two-year deadline for the EPA to set a drinking water standard for PFOA and PFOS.
- Designate PFOS and PFOA as “hazardous substances” under the Superfund law and set a deadline for the EPA to determine whether other PFAS should also be designated as hazardous substances.
- Restrict industrial PFAS emissions into the air and water.
- Phase out other non-essential uses of PFAS and help consumers avoid PFAS in everyday products.
- Require new studies before approving new PFAS.

In addition, Congress should fix our badly broken system for assessing food additives and food contact materials. In particular, Congress should direct the FDA to follow the 1958 law and review the cumulative effects of similar chemicals authorized for use food additives and food contact materials, including background exposure from non-dietary sources. For substances that do not meet the rigorous safety standard of “reasonable certainty to cause no harm,” the FDA should be directed to revoke approval for those substances. The FDA should also revise its method for detecting PFAS chemicals in food and accurately measure PFAS in food.