IN THE

Supreme Court of the United States

National Pork Producers Council, et al., Petitioners,

v.

KAREN ROSS, IN HER OFFICIAL CAPACITY AS SECRETARY OF THE CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE, ET AL.,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

BRIEF OF WORKER SAFETY ADVOCATES AS AMICI CURIAE SUPPORTING RESPONDENTS

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CORPORATE DISCLOSURE

 $Amici\ curiae$ do not issue stock and have no parent corporations.

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INTEREST OF AMICI CURIAE¹

Amici submit this brief to correct Petitioners' claim that Proposition 12's in-state benefits are "bogus." Pet'rs' Br. 20. Amici work on occupational safety and health, particularly the risks of disease spread in the workplace, and represent food and agricultural workers like those in California that face such hazards. Proposition 12 will protect thousands of California workers—particularly slaughterhouse, auction house, and animal transportation workers—from the risk of zoonotic disease. It will also insulate all Californians against the proven potential that food and agriculture facilities will incubate and spread zoonoses to the broader population. Thus, Petitioners' challenge could undermine amici's long and ongoing efforts to create safe working environments and could endanger amici's members, their families, and their communities.

Amicus David Michaels, PhD, MPH, was the longest tenured administrator in the history of OSHA, serving as Assistant Secretary of Labor for Occupational Safety and Health from December 2009 to January 2016. Dr. Michaels, an epidemiologist, is currently a professor at George Washington University School of Public Health, Departments of Environmental and Occupational Health and Epidemiology.

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¹ No counsel for a party authored this brief in whole or in part, and no person other than *amici* or their counsel made a monetary contribution to this brief's preparation and submission. All parties have consented to this filing.

Advisor to the House Education and Labor Committee from 2019 to 2021.

Amicus the National Council for Occupational Safety and Health ("NCOSH") consists of twenty-six local nonprofits and a network of 2,000 advocates focused on creating safe working conditions, including through providing technical assistance to build safe workplaces and develop safety policies. NCOSH has numerous ongoing campaigns seeking to improve the conditions of food and agriculture workers, including protecting them against zoonoses.

Amicus the National Joint Council of Food Inspection Locals represents the USDA Food Safety Inspection Service employees working throughout the country, including those in the meat processing plants throughout California.

Amicus the Food Chain Workers Alliance is a coalition of groups representing workers throughout the food chain, including advocacy organizations, worker centers, and unions representing food workers, including warehouse, retail, and slaughterhouse workers and truckers throughout California.

Amicus the HEAL (Health, Environment, Agriculture, Labor) Food Alliance is a California-based national coalition whose members represent over 2 million farmers, fishers, workers, indigenous groups, scientists, organizers, and advocates. Many of its members work in or live adjacent to meat-packing plants, and HEAL's current campaigns include protecting the dignity and safety of food workers and their families.

Amici Public Justice and Towards Justice are national legal advocacy organizations that represent food workers, including slaughterhouse and other

meatpacking workers regarding unsafe conditions stemming from COVID-19 and other diseases.

SUMMARY OF ARGUMENT

Petitioners ask this Court to adopt an extreme, never-before-heard-of rule that would strip the dormant Commerce Clause of a core precept: that states may protect their residents and interests, even if doing so has some out-of-state effects. According to Petitioners, every law that has "the practical effect of controlling commerce outside the State" is "almost per se invalid," Pet'rs' Br. 19, regardless of whether the state is exercising an established local police power. In our modern economy, such a rule would relieve most producers of any state-level design or manufacturing requirement. The facts of this case in particular demonstrate why states must be able to legislate even if their laws have out-of-state effects. Proposition 12 is a well-supported exercise of California's historic police powers to protect public health and safety, securing the State against the likely spread of zoonotic diseases among its workforce and into its general population. Thus, Petitioners' proposed rule is both baseless and dangerous.

California is home to thousands of animal workers who handle pigs or their carcasses, the meat of which winds up on grocery store shelves across the State. Smithfield Foods' Farmer John plant operates in Vernon, California, next to downtown Los Angeles, where its over 1,800 workers process around 7,000 hogs per day. Memorandum from Barbara Ferrer, Dir., Cnty. of L.A. Pub. Health, to Bd. of Supervisors, Cnty. of L.A., Ensuring the Safety and Well Being of Workers at Industrial Facilities (Item No. A-1, Agenda of May 26, 2020) (June 2, 2020), at 4,

https://tinyurl.com/h2e4hpse; Gustavo Arellano, As Pigs Await Slaughter at Farmer John, Strangers Offer Water, Love and Comfort to the Doomed, L.A. Times (Mar. 5, 2019, 9:00 AM), https://tinyurl.com/mrx4222s.

California also houses several other hog slaughter and processing facilities: Yosemite Foods in Stockton, Clausen Meat Company Inc. in Turlock, and Olson Meat Plant in Orland. *Pork*, Yosemite Foods, https://yosemitefoods.com/products/pork/ (last visited Aug. 9, 2022); *Products*, Clausen Meat Co., https://clausenmeat.com/products/ (last visited Aug. 9, 2022); *Premium Products*, Olson Meat Co., https://www.olsonmeat.com/products (last visited Aug. 9, 2022).

Additionally, Californians work at livestock auction houses throughout the State that sell pigs. Transport workers, who both live and travel throughout the State, convey the swine to the auction sites and slaughter facilities.

The practices Proposition 12 says cannot be used to produce pork sold in the State² would significantly reduce the risk of these workers contracting zoonotic disease. These practices are known to facilitate the faster and more dangerous spread of disease among

² These practices are: employing gestation crates that "prevent[] [sows] from lying down, standing up, fully extending [their] limbs, or turning around freely" and confining sows in "less than 24 square feet of usable floorspace," Cal. Health & Safety Code §§ 25990(b)(2), 25991(e)(1), 25991(e)(3), *i.e.*, intensive confinement.

hogs, which can then spread to humans.³ Making matters worse, as recent experience with COVID-19 confirms, animal facilities in California are likely to incubate zoonotic diseases and increase their spread among the broader population.

Contrary to Petitioners' presentation, states can legislate to secure the health and safety of their population, as long as the laws do not discriminate against interstate commerce and are not protectionist. South Dakota v. Wayfair, Inc., 138 S. Ct. 2080, 2093-94 (2018) ("[T]he Commerce Clause was designed to prevent states from engaging in economic discrimination[.]"); Intervenor Resp'ts' Br. at 11-21. Yet even if the Court were to narrow states' authority and balance Proposition 12's in-state interests against the alleged out-of-state burdens, Proposition 12 should unquestionably survive. Given the significant risks to California's workers, their families, and communities produced by the intensive confinement Proposition 12 addresses, it cannot be said that the law's "burden imposed on [interstate] commerce is clearly excessive in relation to the putative local benefits." Pike v. Bruce Church, Inc., 397 U.S. 137, 142, 143 (1970); see also Pet'rs' Br. 44 (conceding the same balancing test). Petitioners' Pike argument rests on their claim that Proposition 12's in-state benefits are "invalid or non-existent." Pet'rs' Br. 47. The Court should thus affirm the dismissal of Petitioners' dormant Commerce Clause claim, these

³ Examples of zoonotic diseases transmissible from animals to humans include swine flu, streptococcosis, and salmonellosis. Institutional Animal Care & Use Comm., *Zoonoses Associated with Swine*, Wash. St. Univ. (Jan. 2021), https://tinyurl.com/vrsysrmt.

allegations are implausible in light of the science on zoonotic disease and worker health and safety detailed below. *See Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 570 (2007).

ARGUMENT

Proposition 12 substantially furthers California's public health and safety by protecting workers who interact with animals, carcasses, and meat products, as well as those with whom they come into contact.

Extreme animal confinement—particularly the conditions regulated by Proposition 12—increases the risk of zoonotic diseases jumping from animals to people. *See infra* Sections I-II.

Without regulation, animal agriculture can thus introduce diseases to workers, their families, their communities, and the entire State. See infra Section III. This is especially true in California, as pigs are kept and cared for at auction houses throughout the State, and California's largest slaughterhouse is located in the midst of its largest population center. See infra Sections II-III. As a result—setting aside that states may act as laboratories of democracy and enact laws concerning commerce that are not discriminatory or protectionist—Petitioners have not stated a plausible claim that Proposition 12 violates the dormant Commerce Clause. Its out-of-state burdens cannot be said to outweigh its benefits. See infra Section IV.

I. Proposition 12 addresses intensive confinement that causes zoonotic disease to spread among swine that will be sent to California.

Breeding pigs confined (1) in gestation crates during pregnancy and (2) with less than twenty-four square feet of space, as prohibited by Proposition 12, are far more likely to contract zoonoses. Moreover, the science is clear that those conditions make it more likely their offspring that become pork products will carry zoonoses. See, e.g., Andrew A. Hill et al., A Farm Transmission Model for Salmonella in Pigs, Applicable to E.U. Member States, 36 Risk Analysis 461, 479 (2016) ("[B]reeding herd prevalence is likely to be a strong predictor of national pig prevalence for many MSs [member states][.]"); see also infra Sections I.A-B.

Thus, while Petitioners attack Proposition 12 because it limits the in-state sale of pork but addresses breeding pigs' conditions, and Petitioners claim breeding pigs' sole function is to produce offspring and therefore they will not enter California, Pet'rs' Br. 42, in fact, Proposition 12 is a means to reduce the risk of pigs meant to produce pork products bringing zoonoses into the State. Indeed, Petitioners do not dispute that the animals born and raised alongside the sows addressed by Proposition 12 are transported to the State for slaughter and sale. See Pet. App. 204a (Complaint) ¶¶ 284-86 (alleging a "miniscule portion" of all pork in the nation meets the requirements of Proposition 12). Proposition 12 ensures those are healthier animals and thus less likely to infect California's workers, which also secures the health and safety of California's residents.

Hence, Petitioners' assertion that Proposition 12 is "based on philosophical preferences," not in-state concerns, Pet'rs' Br. 2, is not plausible. Proposition 12 meaningfully effectuates a valid state interest in keeping out a known and proven risk to public health.

A. Gestation Crates

By prohibiting the in-state sale of meat from breeding pigs kept in gestation crates and their "immediate offspring," Proposition 12 improves the health of swine that enter California. See Cal. Health & Safety Code 25990(b)(2), 25991(e)(1), §§ 25991(e)(3). In particular, breeding pigs housed in individual crates during pregnancy are more likely to experience stress that renders them more susceptible to zoonotic disease, which they can transmit to their offspring, and more likely to birth offspring with weaker immune systems. Those offspring with weaker immune systems are, in turn, more likely to contract diseases at the breeding facility and elsewhere.

Gestation crates are "tiny, metal cage[s]" that confine breeding pigs, and in which they "can barely move." Alex Padilla, Sec'y of the State of Cal., Official Voter Information Guide 70 (2018), https://tinyurl.com/ms34fsmd.

In these crates, sows experience chronic stress. For instance, they cannot, "move [in] and investigate in [the] confined conditions" and they "cannot exhibit the behaviors that meet their specific needs, such as rooting behavior, among others, so they exhibit abnormal behaviors (such as stereotypic behavior)." Mingyue Zhang et al., *Effects of Confinement Duration and Parity on Stereotypic Behavioral and Physiological*

Responses of Pregnant Sows, 179 Physiology & Behav. 369, 369 (2017) (explaining how "confinement in locations such as gestation stalls is a chronic stressor to sows"). In crates, sows also cannot "resolve conflict with neighboring sows." Verena Grün et al., Influence of Different Housing Systems on Distribution, Function and Mitogen-Response of Leukocytes in Pregnant Sows, 3 Animals 1123, 1124 (2013) (detailing experiences "presumed to cause [sows]...chronic stress").4

Such stress can "increase [a sow's] likelihood of infection and illness." Pew Comm'n on Indus. Farm Animal Prod., Putting Meat on the Table: Industrial Farm Animal Production in America 13 (2008), https://tinyurl.com/e62uft8r; Jeanette I. Webster Marketon & Ronald Glaser, Stress Hormones and Immune Function, 252 Cellular Immunology 16, 19 (2008) ("Stress has been shown to have detrimental effects on the immune system.").

For example, within "an experimentally controlled setting," Grün et al. housed 33 sows in individual crates, and then relocated some to group housing at week four of gestation to "compare the effect of two distinct housing systems for pregnant sows (confinement in individual crates and group-housing) on several measures of blood cellular immunity." Grün et al., *supra*, at 1125-26. The study found individually housed sows displayed higher "cortisol levels"—

⁴ See also Xin Liu et al., A Comparison of the Behavior, Physiology, and Offspring Resilience of Gestating Sows When Raised in a Group Housing System and Individual Stalls, Animals, July 12, 2021, at 4 (showing that "the stress hormone (ACTH, A, COR) level of gestating sows housed in [individual stalls] was higher than that of gestating sows housed in [group housing systems] throughout the whole gestation period").

around 25% higher than sows in group housing—which is associated with more stress, as "cortisol measurements [are] an indicator of the stressfulness." *Id.* at 1125, 1133-35. Moreover, individually housed sows had lower T cell subsets, which is associated with a weaker immune system and thus less resistance to infection. *Id.* at 1134. The researchers concluded that "differences in the stressfulness of the environment" between crate and group housing probably explained the individually crated sows' lower T level subsets. *Id.* at 1136.⁵

This conclusion is not unique. A study of 360 arbitrarily chosen sows found that "the animals reared in single crates showed a constant decline in the expression of genes related to immune response." Rossana Capoferri et al., Comparison Between Single- and Group-Housed Pregnant Sows for Direct and Indirect Physiological, Reproductive, Welfare Indicators and Gene Expression Profiling, 24 J. Applied Animal Welfare Sci. 246, 256 (2020). By contrast, group-housed-sows showed no "modulation of their immune response." Id. According to the authors, the sows' incapacity "to form social relationships" in crates could have contributed to "inducing the severe immunosuppression highlighted by [the] gene expression profiling." Id.6

⁵ See also Zhang et al., supra, at 375 (in experiment gauging impact of concentration on sows, noting "a belief that long-term stress states have an inhibitory effect on the immune system").

⁶ Crate housing is also associated with raising a sow's adrenaline, which is an "effective indicator[] of stress in pigs." See Yongdae Jeong et al., Improving Behavior Characteristics and Stress Indices of Gestating Sows Housed with Group Housing Facility, 62 J. Animal Sci. & Tech. 875, 881-82 (2020) ("[E]pinephrine [i.e., Footnote continued on next page

Further, the harms sows experience because of crate housing harm their offspring. Crate-housed sows are more likely to birth offspring with weaker immune systems, making them far more likely to contract diseases from their mother, other animals at the breeding facility, or animals that will surround them at the other facilities where they live until slaughter. See M. Kulok et al., The Effects of Lack of Movement in Sows During Pregnancy Period on Cortisol, Acute Phase Proteins and Lymphocytes Proliferation Level in Piglets in Early Postnatal Period, 24 Polish J. Veterinary Scis. 85, 90 (2021) (study "suggest[ed] that the piglets from mothers kept in restriction movement pens will have a weaker immunity barrier compared to the piglets given birth by mothers kept in free movement pens").

This is because prenatal stress "acts on the fetus through the mother's body." *Id.* at 86 (internal citations omitted). In one study, the offspring's "prenatal stress" was associated with a "significant decrease in thymus weight," even after thirty-five days of life, which can weaken their resistance to infection. M. Tuchscherer et al., *Effects of Prenatal Stress on Cellular and Humoral Immune Responses in Neonatal Pigs*, 86 Veterinary Immunology & Immunopathology 195, 202 (2002) (providing that "sustained thymus

adrenaline] level at the gestation and post-farrowing stages were decreased in the GHF [group-housing facility] compared to that in CON [individual confinement stall]."). Adrenaline, in turn, can suppress the immune system. See Lena Reiske et al., Interkingdom Cross-Talk in Times of Stress: Salmonella typhimurium Grown in the Presence of Catecholamines Inhibits Porcine Immune Functionality in vitro, Frontiers in Immunology, Sept. 2020, at 1.

atrophy" is indicative of "long-term impairment of cellular immune function in prenatally stressed piglets"). 7

Consistent with this, Xin Liu et al. found that the offspring of crate-housed sows as compared to grouphoused sows "suffered with a higher level of stress and had lower [disease] resistance and resilience," which the authors opined "may be caused by the [individual stall]-housing-related stress experienced by their mothers during gestation." Xin Liu et al., *supra*, at 6-7.

Correspondingly, piglets born to crate-housed sows have been shown to be at higher risk for contracting infections at the breeding facility, including zoonotic infections, from their mother. See E. Merlot et al., Prenatal Stress, Immunity and Neonatal Health in Farm Animal Species, 7 Animal 2016, 2020 (2013) (noting that "epidemiological data suggest that individual housing during pregnancy may increase the transmission of pathogens from the mother to the fetus or neonate"); see, e.g., id. (explaining that "compared with group-housed sows, animals housed in individual pens during pregnancy were found to be more at risk for post-weaning multisystemic wasting syndrome developing in their offspring," which is caused by the offspring contracting a virus (internal citation omitted)).

⁷ See also Elodie Merlot et al., Improving Maternal Welfare During Gestation Has Positive Outcomes on Neonatal Survival and Modulates Offspring Immune Response in Pigs, Physiology & Behav., May 2022, at 1-2 ("Prenatal stress occurs when maternal stress directly influences the development of the fetus. In the porcine species, prenatal stress induces post-natal changes in . . . [piglets'] immune response.").

B. Confinement with less than 24 square feet of usable floor space.

Proposition 12 also prohibits the in-state sale of meat from sows housed "with less than 24 square feet of usable floorspace per pig," a prohibition that directly reduces the risk of all pigs at the breeding facility contracting diseases, including zoonoses. Cal. Health & Safety Code § 25991(e)(3). Indeed, close proximity is associated with both the spread of disease generally, as well as with the development of more virulent, novel, and/or antibiotic-resistant strains of those diseases.

1. More Transmission

As Judge J. Harvie Wilkinson III observed in describing what he called "the problem of viral disease" in concentrated animal feeding operations, "[i]t is well-established that close confinement leads to the 'increased risk of the spread of disease' between hogs." *McKiver v. Murphy-Brown, LLC*, 980 F.3d 937, 980 (4th Cir. 2020) (Wilkinson, J., concurring) (internal citation omitted); see also Dana Cole et al., *Concentrated Swine Feeding Operations and Public Health: A Review of Occupational and Community Health Effects*, 108 Env't Health Persps. 685, 685 (2000) (noting the "greater opportunities for horizontal spread of infectious agents among closely confined animals").

One study concluded that "high prevalence of [Yersinia] enterocolitica⁸ was associated with high [pig]

⁸ "Yersinia enterocolitica... is manifested as acute diarrhea, mesenteric adenitis, terminal ileitis, and pseudoappendicitis. In rare cases, it can even cause sepsis." Muhammed Aziz & Varun S. Yelamanchili, Yersinia Enterocolitica, StatPearls (July 4, 2022), https://tinyurl.com/2p96hkjn.

stocking density." Riikka Laukkanen et al., Contamination of Carcasses with Human Pathogenic Yersinia Enterocolitica 4/O:3 Originates from Pigs Infected on Farms, 6 Foodborne Pathogens & Disease 681, 686 (2009). Another found that "groups of finisher pigs categorized as having high Salmonella prevalence were more likely to be stocked at higher pig densities . . . at the time of sampling, compared to low prevalence groups." Julie Funk & Wondwossen Abebe Gebreves. Risk Factors Associated with Salmonella Prevalence on Swine Farms, 12 J. Swine Health & Prod. 246, 249 (2004). In addition, a meta-analysis concluded that ten articles showed "[h]igher herd and pig densities and higher number of pigs in farms or agricultural fairs were associated with higher influenza prevalence." Eugénie Baudon et al., Epidemiological Features of Influenza Circulation in Swine Populations: A Systematic Review and Meta-analysis, PLoS ONE, June 2017, at 16.

Close confinement can increase disease transmission among pigs in several ways. Swine "density" increases animal "contact rates," which creates more opportunities for diseases to spread among the animals. Jason R. Rohr et al., Emerging Human Infectious Diseases and the Links to Global Food Production, 2 Nature 445, 451 (2019). In addition, high concentration results in contacts of longer duration among the pigs, which also makes "animal-to-animal transmission" more probable. Kendall P. Myers et al., Are Swine Workers in the United States at Increased Risk of Infection with Zoonotic Influenza Virus?, 42 Clinical Infectious Diseases 14, 18 (2006). In confined settings, viruses may also remain viable for longer periods of time due to the "reductions in ventilation and sunshine exposure" that accompany such settings. *Id.*

This means that there is more viral load in the air at any given time that can transmit disease from one animal to another. "The buildup of excrement [in a close confinement facility is also] . . . 'conducive to ... breeding flies and insects,' which are known 'vectors of disease." *McKiver*, 980 F.3d at 980 (Wilkinson, J., concurring) (internal citation omitted).

2. Transmission of More Severe, Novel, and/or Antibiotic-Resistant Strains

Besides increasing the risk of infection, intensive confinement also renders sows and their offspring more likely to carry more damaging strains. In concentrated pig facilities, "numerous transmission events" and "co-infection with several strains of pathogens" result in "infectious agents . . . evolv[ing] to become more virulent." Pew Comm'n on Indus. Farm Animal Prod., *supra*, at 13.9

Sows in intensive confinement are also more likely to carry novel strains capable of spreading infection faster among people. *See id.* ("[T]he continual cycling of viruses and other animal pathogens in large herds or flocks increases opportunities for the generation of novel viruses through mutation or recombinant

⁹ See also Rohr et al., supra, at 451 ("host densities increas[ing] and transmission becom[ing] more frequent" results in "higher virulence" and thus greater "incidence and severity of infectious disease" (emphasis added)); Weidong Yue et al., Prevalence of Porcine Respiratory Pathogens in Slaughterhouses in Shanxi Province, China, 7 Veterinary Med. & Sci. 1339, 1344 (2021) ("[I]nteractions between pathogens have . . . been indicated to increase disease severity.").

events that could result in more efficient human-to-human transmission."). 10

Further, antibiotic-resistant strains are more likely to emerge among concentrated swine. Because animals in intensive confinement have a greater chance of transmitting disease among one another, these operations are more likely to apply—and overuse—antibiotics on the herd. See Cole et al., supra, at 685 (stating that "antimicrobials are useful to decrease the spread of infectious disease between animals" given "greater opportunities for horizontal spread of infectious agents among closely confined animals"); see also McKiver, 980 F.3d at 980 (Wilkinson, J., concurring) (explaining that "[concentrated animal feeding operations commonly administer antibiotics at subtherapeutic concentrations" as a means of "compensat[ing] for the stressors of close confinement" (internal citation omitted)).

In turn, "broad application of antimicrobials to farm animals can...result[] in the evolution of groups of resistant organisms." Cole et al., *supra*, at 685; Mary J. Gilchrist et al., *The Potential Role of Concentrated Animal Feeding Operations in Infectious Disease Epidemics and Antibiotic Resistance*, 115 Env't Health Persps. 313, 313 (2007) ("Increased antibiotic resistance can be traced to the use and overuse of antibiotics.... Several recent studies clearly demonstrate the transmission of multidrug-resistant

¹⁰ See also Myers et al., supra, at 5-6 (When "tens of thousands of susceptible pigs... are housed in confinement facilities, [they] serv[e] as a tremendous potential reservoir of susceptible animals, whose dense populations may hasten viral mutation and reassortment.").

pathogens from swine to humans."); *McKiver*, 980 F.3d at 980 (Wilkinson, J., concurring).¹¹

California thus has a valid basis for objecting to intensive confinement, as it is proven to increase risk of infection—including more aggressive, harder-to-treat strains—among pigs that will enter California.

II. With fewer intensively confined swine entering California because of Proposition 12, the law will help protect the State's workers from zoonoses.

By protecting the pigs that produce pork products in California, Proposition 12 correspondingly protects in-state animal workers from disease.

Petitioners do not contest that many pigs entering California will be subjected to the disease-spreading conditions Proposition 12 regulates. *E.g.*, Pet'rs' Br. 8-11. Slaughterhouse workers, drivers, and livestock auction employees all live in California, where they interact with the animals or their carcasses prior to the meat entering the marketplace, including in their home State. These workers will thus have a meaningfully increased risk of immediate infection if Proposition 12 cannot take effect—to say nothing of the increased risk to others with whom the workers interact. *See infra* Section III. In sum, contrary to Petitioners' rhetoric, the in-state public health and safety benefits are far from "illusory and invalid." Pet'rs' Br. 20.

¹¹ Antibiotic-resistant infection is not only dangerous for swine, but also poses a serious human health threat to humans. *See in-fra* pp. 18-19.

A. Slaughterhouse Workers

California's slaughterhouse workers are much more likely to contract zoonotic disease without Proposition 12, as they are regularly exposed to infections that spread among the animals. See E.S. Johnson et al., Non-Malignant Disease Mortality in Meat Workers: A Model for Studying the Role of Zoonotic Transmissible Agents in Non-Malignant Chronic Diseases in Humans, 64 Occupational & Env't Med. 849, 849 (2007) ("Within the meat industry, exposures to transmissible agents are expected to be highest for workers employed in manufacturing establishments where animals are slaughtered and processed.").

For example, a study found that the "overall prevalence of MRSA [methicillin-resistant Staphylococcus aureus] carriage identified in [the Smithfield swine slaughter/processing plant worker study population in 2011 was higher than the estimate for the general U.S. population." Ricardo Castillo Neyra et al., Multidrug-Resistant and Methicillin-Resistant Staphylococcus Aureus (MRSA) in Hog Slaughter and Processing Plant Workers and Their Community in North Carolina (USA), 122 Env't Health Persps. 471, 476 (2014). MRSA can precipitate a "staph infection that is difficult to treat because of resistance to some antibiotics," resulting in serious illness or death. Methicillin-Resistant Staphylococcus Aureus (MRSA), Ctrs. for Disease Control & Prevention (Feb. 5, 2019), https://tinyurl.com/5hdte8s4 ("Staph infection . . . can cause serious infections that can lead to sepsis or death."); MRSA Infections (Methicillin-Resistant Staphylococcus Aureus), Penn Med. (Sept. 1, 2021), https://tinyurl.com/27uk9kuw ("Pneumonia and

bloodstream infections due to MRSA are linked with high death rates."). 12

Another study observed "an increased frequency of antibodies against Y[ersinia] enterocolitica O:3 in the workers of abattoirs slaughtering swine," which contributed to the researchers' conclusion that "yersinia infections form an occupational health risk in the workers slaughtering swine at abattoirs." Riitta Merilahti-Palo et al., Risk of Yrsinia Infection Among Butchers, 23 Scandinavian J. Infectious Diseases 55, 58-60 (1991); see also Laukkanen et al., supra, at 682, 684 (concluding that "the high prevalence of pathogenic Y. enterocolitica 4/O:3 in pigs appears to predispose to carcass contamination at the slaughterhouse," meaning slaughterhouse workers who handle pig carcasses are at increased risk of contracting the disease).

Researchers have also noted that "Salmonella can be transmitted to humans through the slaughtering process," and "[m]eat packing... workers are at greater risk of acquiring infection because of their

¹² The prospect of pigs transmitting antibiotic-resistant infections to slaughterhouse workers is especially concerning, as "[a]ntimicrobial resistance is a critical issue that significantly impacts healthcare quality, patient safety, and public health." Soc'y for Healthcare Epidemiology of Am. et al., *Policy Statement on Antimicrobial Stewardship by the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Pediatric Infectious Diseases Society (PIDS), 33 Infection Control & Hosp. Epidemiology 322, 323-24 (2012). Over 35,000 people in the United States die annually from such infections as of 2019. See U.S. Dep't of Health. & Hum. Servs., <i>Antibiotic Resistance Threats in the United States* vii (2019), https://tinyurl.com/2tcrrk53.

close access to animals[.]" Gilchrist et al., *supra*, at 315.

Thus, Petitioners' efforts to diminish the public health and safety effects of Proposition 12 are factually false. They assert that because Proposition 12 is focused on the breeding facility and there is a "[g]eographical and temporal" separation between that facility and slaughter, the zoonotic risks addressed by Proposition 12 have "disappeared" by the time the hog enters California. Pet'rs' Br. 12-13. Yet, as shown above, slaughterhouse workers are at risk of contracting the same diseases as those spread by intensive confinement at the breeding facility—to say nothing of how intensive confinement in the breeding facility weakens hogs' immune systems and thus renders them more vulnerable to disease elsewhere. See supra Section I. Indeed, studies have shown that pigs with intestinal Campylobacter by the age of 11 weeks remain carriers until slaughter. See C. R. Young et al., Enteric Colonization Following Natural Exposure to Campylobacter in Pigs, 68 Rsch. in Veterinary Sci. 75, 77 (2000)¹³; see also Scherer et al., Time Course of Infection with Salmonella typhimurium and Its Influence on Fecal Shedding, Distribution in Inner Organisms, and Antibody Response in Fattening Pigs, 71 J. Food Protection 699, 700 (2008) (study "show[ed] that Salmonellatyphimurium DT104 infection

¹³ Campylobacter can cause campylobacteriosis, which is typically "self-limiting" but "may . . . lead to severe illnesses including bacteremia, meningitis, irritable bowel syndrome, Guillian—Barré syndrome, or arthritis." Jae-Ho Guk et al., Hyper-Aerotolerant Campylobacter coli From Swine May Pose a Potential Threat to Public Health Based on Its Quinolone Resistance, Virulence Potential, and Genetic Relatedness, Frontiers in Microbiology, July 16, 2021, at 2.

experimentally induced in piglets aged 42 days with an oral exposure . . . can persist until market age").

Moreover, there are many ways slaughterhouse workers can contract the zoonoses addressed by Proposition 12 from pigs or their carcasses. Infections can enter through slaughterhouse workers' broken skin. For example, these workers can contract bacterial infection leptospirosis—which causes "fever, headache, abdominal and muscle pain, vomiting, diarrhea, jaundice, and rash" and can result in "hemorrhagic pneumonia, liver and kidney failure" and even death—when their "abraded skin" comes into "contact with [an animal's] contaminated urine" during slaughter. Zoonoses Associated with Swine, supra.

Slaughterhouse workers can also contract zoonoses through inadvertent ingestion of animal waste or tissue. Id. For example, "Salmonellosis, campylobacterosis, cryptosporidiosis, giardiasis, balantidiasis and infections with pathogenic E. coli" can all infect humans via "contact and accidental ingestion of fecal material from infected animals." Id.; see also Elizabeth Anne Jessie Cook et al., Prevalence and Risk Factors for Exposure to Toxoplasma Gondii in Slaughterhouse Workers in Western Kenya, BMC Infectious Diseases, Sept. 2021, at 2 ("[s]laughterhouse workers are considered a high-risk group for T. gondii [Toxoplasma gondii exposure because of their regular contact with raw meat," which can cause vision loss and, for the immunocompromised, "seizures and loss of consciousness").

Slaughterhouse workers may additionally acquire infections through inhalation of aerosols, such as *Staphylococcus aureus*. Ctr. for Food Sec. & Pub. Health, *Zoonotic Diseases of Swine*, Iowa St. Univ.

Coll. Veterinary Med., https://tinyurl.com/2p898wvp (last visited Aug. 12, 2022). A 2009-10 study of livestock-antibiotic resistant Staphylococcus aureus ("MRSA"), for example, found MRSA "in 88% of the cultured air samples from the lairage area" of slaughterhouses where live animals are stored to await slaughter, and thus found it "likely that workers [there] are regularly exposed to airborne MRSA." Maarten J. Gilbert et al., Livestock-Associated MRSA ST398 Carriage in Pig Slaughterhouse Workers Related to Quantitative Environmental Exposure, 69 Occupational & Env't Med. 472, 476 (2012); see also Johnson et al., supra, at 852 (wholesale manufacturing meat workers experience "high aerosol... exposures to transmissible agents," and are therefore at "high risk" of infectious agents entering their circulatory system and "spread[ing] to target organs").

As noted above, it is particularly logical for California to have been concerned with the risks intensive confinement presents to slaughterhouse workers. There are at least four pork slaughterhouses in the State, including the Farmer John plant in Vernon. *See supra* pp. 3-4. ¹⁴ Absent Proposition 12, all of their

¹⁴ Smithfield recently sold Farmer John and states it plans to cease its operations there in 2023. Associated Press, Farmer John Meatpacking Plant in Vernon to Close Next Year, KTLA, June 10, 2022, https://tinyurl.com/3uh5b42y. The public record is silent as to whether another processor will take over operations or the facility will close. However, even if Farmer John were to close and Petitioners to argue this alters California's interest in Proposition 12—arguments Petitioners have not made—this would do nothing to negate that California appropriately exercised its police power to protect residents when it enacted Proposition 12, and that the law would continue to protect workers in other in-state slaughterhouses and animal facilities. See supra p. 4.

workers will face considerable risk of contracting serious infection from swine raised in extreme confinement.

B. Livestock Auction Workers (and Auction Attendees)

Livestock auction workers and attendees in California are also at high risk of contracting diseases from pigs confined in ways inconsistent with Proposition 12, although Petitioners entirely fail to address their roles and the risks their work presents to the State. Livestock auctions are held regularly throughout California and can involve a substantial number of pigs that came from intensive confinement, meaning that Proposition 12 would reduce the probability of animal-to-human transmission at these auction houses. See Pet'rs' Br. 3, 9 (vast majority of pigs born to sows that were housed in ways inconsistent with Proposition 12).

There are many opportunities for animal-to-human transmission at these events. Fresno Livestock Commission sells an "[a]verage [of] 200 pigs per week." Schedule, Fresno Livestock Comm'n, LLC, https://tinyurl.com/2kpm34cv (last visited Aug. 9, 2022). The Escalan Livestock Market and Petaluma Livestock Auction Yard also hold weekly pig sales. Auction Schedule, Escalon Livestock Mkt., https://tinyurl.com/4mzmsfdm (last visited Aug. 9, 2022); Sale Schedule. Petaluma Livestock Auction https://tinyurl.com/mryrbzht (last visited Aug. 9, 2022). The Modesto Livestock & Poultry Auction even advertises its weekly auction where it sells pigs as an event with "[o]ver capacity crowds, with lots of action." Modesto Livestock & Poultry Auction, Modesto

Livestock & Flea Mkt., https://tinyurl.com/yfew7vvd (last visited Aug. 9, 2022).

Workers will come into contact with these pigs, as they must be housed and cared for from delivery until sale. The public, such as the purchaser, will also be exposed. Therefore, for many of the same reasons slaughterhouse workers are at risk, these staff and attendees are more likely to contract disease when the pigs are confined in ways that contradict Proposition 12.

C. Livestock Transport Workers

Numerous individuals who transport pigs into and around the State for sale and slaughter are also at increased risk of infection without Proposition 12. See Michael Greger, The Long Haul: Risks Associated with Livestock Transport, 5 Biosecurity & Bioterrorism: Biodefense Strategy, Prac., and Sci. 301, 301 (2007) ("The Food and Agriculture Organization (FAO) of the United Nations describes live animal transport as 'ideally suited for spreading disease[.]" (internal citation omitted)). Truckers are at risk of inhaling infectious agents, as these workers necessarily come into contact with live animals during transport, especially in loading the animals onto and off the vehicle. See, e.g., 4 Variant Virus Infections Linked to Pig Exposures, Ctrs. for Disease Control & 12, Prevention (Aug. 2016), https://tinyurl.com/2hvuwnxp (noting swine flu can transmit to humans if "an infected pig...coughs or sneezes and droplets with influenza virus in them spread through the air").

This risk is compounded by the fact that the trucks are "poorly ventilated[,] stressful environment[s]."

Greger, supra, at 301 (quoting Animal Prod. & Health Div., Food & Agric. Org. of the United Nations, Improved Animal Health for Poverty Reduction & SustainableLivelihoods (2002),https://tinyurl.com/2p95bdst). Also, pigs in transport travel for long intervals. Id. at 301 (citing Terrance M. Wilson et al., Agroterrorism, Biological Crimes, and Biological Warfare Targeting Animal Agriculture, in Emerging Diseases of Animals 23 (Corrie Brown & Carole Bolin eds., 2000)) ("Before they are slaughtered, U.S. livestock may travel an average of 1,000 miles."). 15 These conditions create a perfect storm for disease transmission among the pigs and to the truckers (or those to whom they deliver the animals).

Pigs even leave pathogens on the truck after transport, which can infect the truckers as they move to the next load. Cleaning and disinfecting the vehicle "is a very difficult task to carry out in practice." Laura Valeria Alarcón et al., Biosecurity in Pig Farms: A Review, Porcine Health Mgmt., Jan. 2021, at 5. "[I]t has been shown that a high percentage of slaughterhouse trucks were positive for Salmonella [even] after cleaning and disinfection procedures[.]" Id. In addition, cleaning the vehicle itself is another way animal transport workers can contract transmissible zoonotic agents.

¹⁵ See also Mhairi A. Sutherland et al., Effects of Transport at Weaning on the Behavior, Physiology and Performance of Pigs, 4 Animals 657, 658 (2014) ("During transport pigs are potentially exposed to numerous stressors including handling at loading and unloading, fluctuating temperatures, mixing with unfamiliar pigs (and ensuing social stress), feed and water withdrawal, exposure to a novel environment, vibrations and noise[.]"); supra Section I (stressed pigs are more vulnerable to disease).

In short, Proposition 12 would decrease the odds of in-state animal workers contracting zoonotic infections, so Petitioners' theory that the law would have no effect on human health in California is false.

III. California's pork industry can incubate and spread diseases among its employees and in the surrounding population.

By reducing the slaughter and sale of pork from diseased pigs and thereby protecting California's workers, Proposition 12 will also protect numerous other California residents from disease. This is because an infection that enters an animal facility in California, especially an infection that circulates among employees, will jump to their households and the greater population. Proposition 12 thus reduces the potential for community transmission, as corroborated by slaughterhouses' experience with COVID-19. The law also limits other disease pathways into California communities, such as spread from transport trucks to those riding in vehicles behind them. Put simply, Proposition 12 is not only a logical expression of the State's police power to protect the health and safety of its workers, but also its power to protect all California residents.

The COVID-19 pandemic highlights that disease spreads efficiently among slaughterhouse workers. One study of a "large outbreak of COVID-19" at a pork processing facility explained why—the authors deduced that the "high employee density in work and common areas" and "prolonged close contact between employees over the course of a shift" may have contributed to the facility's high number of COVID-19 infections. Jonathan Steinberg et al., *COVID-19 Outbreak Among Employees at a Meat Processing Facility*

- South Dakota, March-April 2020, Morbidity & Mortality Wkly. Rep., Ctrs. for Disease Control & Prevention (Aug. 7, 2020), https://tinyurl.com/mvyxedv5. "Production line" workers at slaughterhouses can be less than six feet apart throughout their shift. Id. Accordingly, they are at high risk of inhaling pathogenic respiratory droplets from one another. See id.; see also Nat'l Fed'n of Indep. Bus. v. Dep't of Lab., Occupational Safety & Health Admin., 142 S. Ct. 661, 666 (2022) (noting the COVID-19-related "risks associated with working in particularly crowded or cramped environments").

By enabling disease to proliferate in the plant, slaughterhouses increased the risk of disease in the community. One study found that "[m]eatpacking-dependent counties observed nearly 10 times more COVID-19 cases in early May [2020], compared to other manufacturing-dependent counties." U.S. Dep't of Agric., Econ. Rsch. Serv., COVID-19 Working Paper: Meatpacking Working Conditions and the Spread COVID-19. at 6-7 (2021),https://tinyurl.com/55ameyty ("By the end of May, 2020, our analysis estimates that counties with at least 20 percent of their workforce employed in the meatpacking industry comprised 13 of the 25 rural counties with the highest rates of COVID-19 per 100,000 people and 8 of the top 10."). A study published by the National Academy of Sciences estimates that the additional "COVID-19 infections and deaths related to livestock plants" as of July 21, 2020, i.e., infections that would not have occurred without the disease first spreading in the plants, "[we]re 236,000 to 310,000 (6 to 8% of all US cases) and 4,300 to 5,200 (3 to 4% of all US deaths), respectively, with the vast majority occurring among people not working at livestock plants."

Charles A. Taylor et al., Livestock Plants and COVID-19 Transmission, Proc. of the Nat'l Acad. of Scis. of the U.S. (Nov. 19, 2020), https://tinyurl.com/2naxdkce. The fact that slaughterhouses can initiate such significant disease transmission in a community is especially troubling in a highly populated metropolis like Los Angeles County, in which Vernon and the Farmer John plant are located. QuickFacts Los Angeles County, California, U.S. Census Bureau, https://tinyurl.com/u6dnarwp (last visited Aug. 12, 2022) (county population is more than nine million).

Slaughterhouses can and will spread other zoonotic diseases just as they spread COVID-19. One study found that household members of slaughterhouse workers were more likely to carry antibiotic-resistant Staphylococcus aureus than other community members, "rais[ing] concerns about potential flow of [bacteria with antibiotic-resistance genes within households of hog workers." Yaqi You et al., Genomic Differences Between Nasal Staphylococcus Aureus From Hog Slaughterhouse Workers and Their Communities, PLoS ONE, Mar. 2018, at 13 (determining "nasal S. aureus from household members of hog workers...showed greater diversity of antibiotic resistance genes and higher prevalence of carriage of multiple resistance genes than community resident[s]"); Meldra Ivbule et al., Presence of Methicillin-Resistant Staphylococcus Aureus in Slaughterhouse Environment, Pigs, Carcasses, and Workers, 61 J. Veterinary Rsch. 267, 275 (2017) (indicating "[t]he high presence of MRSA in pigs is a potential professional hazard for staff working in the meat production chain," and that "[h]uman colonization implies that

carriers become a staphylococcal reservoir and *may* transfer the infection to others" (emphasis added)). 16

Proposition 12 not only protects against disease expanding from slaughterhouses to population centers, but also against zoonoses entering the greater population through transport. Johns Hopkins School of Public Health researchers determined that when intensively confined animals are carried along a state's roads they place all drivers at risk. Specifically, when the researchers "drove cars, windows down, behind trucks that were transporting broiler chickens from farms to slaughterhouses in Virginia and Maryland," they "documented antibiotic-resistant bacteria in the air inside the cars, as well as on the top of soda cans in the cars' cupholders." David O. Wiebers & Valery L. Feigin, What the COVID-19 Crisis Is Telling Humanity, 54 Neuroepidemiology 283, 284-85 (2020) (citing Ana M. Rule et al., Food Animal Transport: A Potential Source of Community Exposures to Health Hazards From Industrial Farming (CAFOs), 1 J. Infection & Pub. Health 33, 33-39 (2008)).

Indeed, given the risk that zoonotic diseases will spread in slaughterhouses and similar environments and then spread throughout neighboring communities, there is reason to think Proposition 12 would not

¹⁶ See also Gregory C. Gray et al., Swine Workers and Swine Influenza Virus Infections, 13 Emerging Infectious Diseases 1871, 1877 (2007) (observing "increased occupational risk of swine influenza virus infection for [swine-exposed, predominantly farm] workers and their nonswine-exposed spouses" (emphasis added)); Myers et al., supra, at 18 (recognizing in connection with swine workers on farms that "[a]fter work, [such workers] may readily communicate [a novel zoonotic] virus to their family members and neighbors").

only protect public health in California, but could also prevent the next pandemic. See Wenjun Ma et al., The Pig as a Mixing Vessel for Influenza Viruses: Human and Veterinary Implications, 3 J. of Molecular & Genetic Med. 158, 163 (2009) ("[T]he creation of novel reassortant swine influenza viruses with zoonotic and pandemic potential could . . . happen in modern swine facilities in the backyard of a highly industrialized country in North America[.]"). 17

For example, as intensive confinement "has become a global phenomenon, a host of avian influenza (bird flu) viruses, including H5N1, have emerged in countries with large-scale industrial poultry operations." Wiebers & Feigin, *supra*, at 284. If a zoonotic outbreak among slaughterhouse workers in California escalates to pandemic scale, California is among the many states (and countries) that would shoulder catastrophic public health and economic consequences. Thus, through Proposition 12 California is protecting its people from immediate infection, as well as from the longer-term risk of overrun hospitals. An overburdened healthcare system would in turn deteriorate Californians' health in other ways and deplete the State's public fisc.

IV. The only plausible conclusion is that Proposition 12 is a constitutional expression of California's police powers to protect the State.

Respondents accurately explain that states are free to pass laws so long as they are not protectionist

¹⁷ See also Myers et al., supra, at 14 (advising that "[s]wine workers . . . be included in pandemic surveillance and in antiviral and immunization strategies").

or discriminatory against interstate commerce, and Proposition 12 should survive on this basis alone. State Resp'ts' Br. 9 (identifying "prohibiting protectionist laws that discriminate against interstate commerce" as "the core concern of the dormant Commerce Clause"); Intervenor Resp'ts' Br. 11-21. Yet, were the Court to entertain Petitioners' request that it examine the effects of the law, the foregoing wealth of evidence demonstrates how Proposition 12 would benefit California and, for this reason, should also stand.

Indeed, Petitioners do not and could not dispute that states may defend their internal public health and safety. See Pet'rs' Br. 36 (asserting "States may exercise 'police powers to protect the health and safety of their citizens" and that "[t]hey enjoy 'great latitude' to do so" (first quoting Hill v. Colorado, 530 U.S. 703, 715 (2000); then quoting Gonzales v. Oregon, 546 U.S. 243, 270 (2006))). The constitutional legitimacy of states shielding their inhabitants from threats to public health is rooted in this Court's ageold precedent. In Bowman v. Chicago & Northwestern Railway Co., this Court pronounced that "the states have power to provide by law suitable measures to prevent the introduction into the states of articles of trade which, on account of their existing condition, would bring in and spread disease, pestilence, and death[.]" 125 U.S. 465, 489 (1888). In Clason v. Indiana, this Court reiterated that "[t]he power of the state to prescribe regulations which shall prevent the production within its borders of . . . articles as would spread disease and pestilence, is well established." 306 U.S. 439, 443 (1939) (quoting Sligh v. Kirkwood, 237 U.S. 52, 59 (1915)). And more recently, the Court indicated that its deference to local health and safety interests endures, observing that "[t]he opinions of the Court through the years have...recogniz[ed] that incidental burdens on interstate commerce may be unavoidable when a State legislates to safeguard the health and safety of its people." *City of Philadelphia v. New Jersey*, 437 U.S. 617, 623-24 (1978).

Proposition 12 is a public health measure. By prohibiting the in-state sale of meat from breeding pigs and their offspring housed in intensive confinement, the law will protect California's workers and residents from zoonoses, and the State from life-threatening and financially devastating outbreaks. See supra Sections I-III. Therefore, Petitioners' allegation that Proposition 12 has no positive impact on California lacks logic. Pet. App. 232a (Complaint) ¶¶ 465, 467 (alleging that Proposition 12 does not "advanc[e] any legitimate local interest," and specifically claiming it "has no connection to human health").

California need not wait until another pandemic strikes. It may prospectively prevent the local harms that will be caused by intensive confinement. *See Maine v. Taylor*, 477 U.S. 131, 148 (1986) ("[T]he constitutional principles underlying the commerce clause cannot be read as requiring the State of Maine to sit idly by and wait until potentially irreversible environmental damage has occurred . . . before it acts to avoid such consequences." (internal citation omitted)).

Because, at the least, the Court should balance the in-state interests against the alleged out-of-state concerns, and Petitioners' balancing argument depends on Proposition 12 lacking *any* connection to local health and safety, their challenge must fail. *Ashcroft v. Iqbal*, 556 U.S. 662, 663-64 (2009) ("[D]etermining whether a complaint states a plausible claim is

context specific, requiring the reviewing court to draw on its experience and common sense."). Proposition 12's health and safety benefits are well proven.

CONCLUSION

For the aforementioned reasons and those given in Respondents' briefs, *amici* support Respondents' request for affirmance.

Respectfully submitted,

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