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To: Environment and Transportation Committee

From: Steven Resnick, MD; Annapolis Asthma, Pulmonary, and Sleep Specialists and Anne Arundel Medical Center

Re: HB 1540 –Environment and Transportation – Mold Inspections – Standards, Reporting, and Penalties

Thank you Chairman Barve, Vice Chairman Stein, and members of the committee for hearing HB 1540. My name is Steven Resnick, I am an intensivist, pulmonologist, and sleep specialist who has been practicing medicine for more than 20 years. I am writing to you to express my support for HB 1540.

At present, no existing state laws protect Marylanders from the impact of mold exposure. That said, several bodies of evidence indicate several reasons to be concerned about indoor air quality in apartments, single family homes, schools, nursing homes, and assisted living facilities. According to the World Health Organization, occupants of damp or moldy buildings have **up to a 75% greater risk** of respiratory symptoms, in addition to asthmaⁱ. Evidence-based studies indicate an increase in morbidity and mortality associated with toxic exposure for adults and children. Not only does mold exposure cause misery and disease but it also creates a financial burden on the community at-large. In Maryland, as we consider the Total Cost of Care on our Medicare patients, we also should consider how increased standards and reporting measures could positively influence environments and avoid unnecessary diseases.

Spores and fungi (such as *Cladosporium*) enter living facilities through open doors and windows and can cause some respiratory distress; several other fungi (such as *Penicillium*, *Aspergillus*, *Stachybotrys*) are associated with indoor water damage and decay of environmental factors. Damp areas, often indicated by a visible water damage stain, can present signs and odors of mold and microbial growth. That said, microbial growth can be subtle and present without dampness, making regulations and oversight a necessary measure and precaution. In a 2016 study of twenty-three buildings, water leakage and stagnant water in roofs, damp basements, and defective plumbing lead to fungal contamination. Building products most vulnerable to mold attacks include organic materials containing cellulose, wood, jute, wallpaper, drywall, and cardboard—materials found in almost all residential and public buildings. These products, mixed with dampness, serve as feeding grounds for fungi and can lead to extensive contaminationⁱⁱ.

Furthermore, several studies indicate that indoor dampness and mold is associated with asthma development in young children and often exacerbated in low-income households because of materials used and existing housing conditionsⁱⁱⁱ. These children grow and develop and the asthma costs (physical and financial) carry with them into adulthood. Other reports studying mold exposure during infancy also show the strong association between moisture in a child's bedroom

and living areas and persistent asthma. While the amount of exposure is not yet known, studies suggest routine inspection and guidelines are necessary to minimize risk and exposure. Fisk, et al at the Institute of Medicine showed that building dampness and fungal growth are associated with increases of **30-50% in cough, wheeze, and asthma**^{iv} and a study by Sauni, et al showed that interventions geared to reducing the mold and repairing schools did decrease asthma symptoms^v.

Patients admitted to an intensive care unit for asthma are more likely to have skin test results that are positive to fungi but not to cat dander, dust mites, or grasses. 76% of patients with multiple admissions to the hospital had at least one positive fungal skin test *compared to 16-19% of other asthma patients*. As Maryland continues its efforts to reduce readmissions and improve the lives of its residents while reducing healthcare spending, standards, regulations, and mold inspections seem a natural part of these efforts.

In pulmonology, we treat several lung diseases, in addition to asthma, that can occur as a result of toxic buildings that we live in. Three well-known, more persistent disease classifications are the *Allergic Bronchopulmonary Mycosis syndromes*, *Allergic Fungal Sinusitis*, and finally *Hypersensitivity Pneumonitis*. Allergic Bronchopulmonary Mycosis syndromes can be difficult to diagnosis and result in structural changes to the lungs called *bronchiectasis*, as well as a lifetime of other infections. Allergic Fungal Sinusitis is a reaction to fungi and is accompanied by mucostasis and sinus opacification. Hypersensitivity Pneumonitis due to fungal exposure can, over time, develop into respiratory failure. The misery and costs of these diseases are high and create challenges for both the patients and their families. Minimizing exposure to these in-home environmental hazards protects Marylanders from the diseases and chronic conditions associated with fungi and mold.

For these reasons, I respectfully encourage the Environment and Transportation Committee to give a favorable report to HB 1540; in order to have a healthy community and lower the cost of care it would be best to establish uniform standards for mold and fungi assessment and limit all exposed through remediation.

Thank you for your consideration.

A handwritten signature in black ink, appearing to read "Steven Resnick". The signature is fluid and cursive, with the first name "Steven" and last name "Resnick" clearly distinguishable.

Steven Resnick, MD

ⁱMeheust, et.al. (2013). Indoor fungal contamination: Health risks and measurement methods in hospital, homes and workplaces. *Critical Reviews in Microbiology*, 40(3), 248-260. DOI: 10.3109/1040841X.2013.777687

ⁱⁱBaxi, et. al. (2016). Exposure and Health Effects of Fungi on Humans. *J Allergy Clin Immunol Pract*, 4(3), 396-404. DOI: 10.1016/j.jaip.2016.01.008

ⁱⁱⁱAdamkiewicz, Gary, et. al. (2014). Environmental Conditions in Low-Income Urban Housing: Clustering and Associations with Self-Reported Health. *American Journal of Public Health*, 104(9), 1650-1656.

^{iv}Fisk, W.J., Lei-Gomez, Q., Mendell, M.J. (2007). Meta-analyses of the associations of respiratory health effects with dampness and mold in homes. *Indoor Air: International Journal of Indoor Environment and Health*, 17(4), 284-296. DOI: 10.1111/j.1600-0668.2007.00475.x

^vSauni, R., Uitti, J., Jauhiainen, M., Kreiss, K., Sigsgaard, T., Verbeek, J.H. (2011). Remediating buildings damaged by dampness and mould for preventing or reducing respiratory tract symptoms, infections, and asthma. *Cochrane Database of Systemic Reviews*, 9(CD007897), 1-49. DOI: 10.1002/14651858.CD007897.pub2