EXHIBIT
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Adverse Human Health Effects Associated with Molds in the Indoor Environment Copyright © 2002 American College of Occupational and Environmental Medicine

Kelman's & Hayden's bogus science

In single-dose in vivo studies, S. chartarum spores have been administered intranasally to mice31 or intratracheally to rats.76,77 High doses (30 x 106 spores/kg and higher) produced pulmonary inflammation and hemorrhage in both species. A range of doses were administered in the rat studies and multiple, sensitive indices of effect were monitored, demonstrating a graded dose response with 3 x 106 spores/kg being a clear no-effect dose. Airborne S. chartarum spore concentrations that would deliver a comparable dose of spores can be estimated by assuming that all inhaled spores are retained and using standard default values for human subpopulations of particular interest78 – very small infants,† school-age children,†† and adults.††† The no-effect dose in rats (3 x 106 spores/kg) corresponds to continuous 24-hour exposure to 2.1 x 106 spores/m3 for infants, 6.6 x 106 spores/m3 for a school-age child, or 15.3 x 106 spores/m3 for an adult. If the no-effect 3 x 106 spores/kg intratracheal bolus dose in rats is regarded as a 1-minute administration (3 x 106 spores/kg/min), achieving the same dose rate in humans (using the same default assumptions as previously) would require airborne concentrations of 3.0 x 109 spores/m3 for an infant, 9.5 x 109 spores/m3 for a child, or 22.0 x 109 spores/m3 for an adult. In a repeat-dose study, mice were given intranasal treatments twice weekly for three weeks with "highly toxic" s. 72 S. chartarum spores at doses of 4.6 x 106 or 4.6 x 104 spores/kg (cumulative doses over three weeks of 2.8 x 107 or 2.8 x 105 spores/kg).79 The higher dose caused severe inflammation with hemorrhage, while less severe inflammation, but no hemorrhage was seen at the lower dose of s. 72 spores. Using the same assumptions as previously (and again ignoring doserate implications), airborne S. chartarum spore concentrations that would deliver the nonhemorrhagic cumulative three-week dose of 2.8 x 105 spores/kg can be estimated as 9.4 x 103 spores/m3 for infants, 29.3 x 103 spores/m3 for a school-age child, and 68.0 x 103 spores/m3 for adults (assuming exposure for 24 hours per day, 7 days per week, and 100% retention of spores).

The preceding calculations suggest lower bound estimates of airborne S. chartarum spore concentrations corresponding to essentially no-effect acute and subchronic exposures. Those concentrations are not infeasible, but they are improbable and inconsistent with reported spore concentrations. For example, in data from 9,619 indoor air samples from 1,717 buildings, when S.chartarum was detected in indoor air (6% of the buildings surveyed) the median airborneconcentration was 12 CFU/m3 (95% CI 12 to 118 CFU/m3).80 Despite its well-known ability to produce mycotoxins under appropriate growth conditions, years ofintensive study have failed to establish exposure to S. chartarum in home, school, or office environments as a cause of adverse human health effects. Levels of exposure in the indoor environment, dose-response data in animals, and dose-rate considerations suggest that delivery by the inhalation route of a toxic dose of mycotoxins in the indoor environment is highly unlikely at best, even for the hypothetically most vulnerable subpopulations.

See data they used disclaimer pg 2

ACOEM References To Dr. Carol Rao's Mechanistic Work, to which Bruce and Brian applied their extrapolations:

76. Rao CY, Brain JD, Burge HA. Reduction of pulmonary toxicity of Stachybotrys chartarum spores by methanol extraction of mycotoxins. Appl Environ Microbiol. 2000;66:2817-21.

77. Rao CY, Burge HA, Brain JD. The time course of responses to intratracheally instilled toxic Stachybotrys chartarum spores in rats. Mycopathologia. 2000;149:27-34.

(77). " We have demonstrated that a single, acute pulmonary exposure to a large quantity of Stachybotrys chartarum spores by intratracheal instillation causes severe injury detectable by bronchoalveolar lavage. The primary effect appears to be cytotoxicity and inflammation with hemorrhage. There is a measurable effect as early as 6 h after instillation, which may be attributable to mycotoxins in the fungal spores. The time course of responses supports early release of some toxins, with the most severe effects occurring between 6 and 24 h following exposure. By 72 h, recovery has begun, although macrophage concentrations remained elevated"

(76.) "We provide evidence that there is a dose-related association between an acute exposure to toxin-containing S. chartarum spores and measurable pulmonary responses. **The consequences of low-level chronic exposure remain to be investigated, as does the relevance of the rodent data to human exposure."**

## *U.S. Chamber Institute for Legal Reform*

The U.S. Chamber Institute for Legal Reform was founded in 1998 as a 501(c)(6) tax-exempt, separately incorporated affiliate of the U.S. Chamber of Commerce. The mission of ILR is simple: to make America's legal system simpler, fairer and faster for everyone. ILR's multi-faceted program seeks to promote civil justice reform through legislative, political, judicial and educational activities at the national, state and local levels.

## *Center for Legal Policy at the Manhattan Institute*

The Center for Legal Policy at the Manhattan Institute is a leading voice for reform of America's civil justice system. The Center's mission is to communicate thoughtful ideas on civil justice reform to real decision-makers through books, publications, conferences and public or media appearances. Founded in 1986, hundreds of news reports have cited the Center's work, with The Washington Post going so far as to call Senior Fellows Peter Huber and Walter Olson the "intellectual gurus of tort reform."

## *About The Authors*

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Bryan D. Hardin, Ph.D., holds positions as a senior consultant with GlobalTox and Adjunct Assistant Professor at the Rollins School of Public Health, Emory University. He was commissioned into the US Public Health Service and began his public health career with the National Institute for Occupational Safety and Health (NIOSH) in 1972, where he served in research, policy, and management roles, culminating as Deputy Director of NIOSH and Assistant Surgeon General in the Public Health Service.

Dr. Hardin holds a Ph.D. in Environment Health Sciences from the University of Cincinnati. Dr. Hardin is a full member of the American Association for the Advancement of Science, the American Industrial Hygiene Association, the American Public Health Association, and the Teratology Society. He has served on working groups of the World Health Organization, the International Labor Office, and the International Agency for Research on Cancer.

**Coreen A. Robbins, Ph.D., C.I.H.**
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Coreen A. Robbins, M.H.S., Ph.D., CIH, holds a position with GlobalTox, Inc. as a consulting Industrial Hygienist for projects in field investigations and in litigation support activity. She has approximately 13 years of experience in industrial hygiene and has served as a consultant in many investigations throughout the U.S.

Dr. Robbins holds a master's degree in Occupational Safety and Health (1989), and a Ph.D. (1995) in Environmental Science from the Johns Hopkins University. Dr. Robbins is also a Certified Industrial Hygienist (CIH). Dr. Robbins has extensive practical experience in conducting industrial hygiene surveys in areas including indoor air quality, mold, asbestos and man-made mineral fibers, chemical exposure assessment and industrial noise exposure. Dr. Robbins is a full member of the American Academy of Industrial Hygiene and the American Industrial Hygiene Association (AIHA), and an affiliate member of the American Conference of Governmental Industrial Hygienists. She is currently serving on the AIHA's Task Force on Microbial Growth as the representative for the AIHA Toxicology Committee.

**Andrew Saxon**
*Chief, Division of Clinical Immunology and Allergy*
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Andrew Saxon, MD, is a professor and Chief of the Division of Clinical Immunology and Allergy at the UCLA School of Medicine. Dr. Saxon has over 25 years of experience in immunology, he has published approximately 165 peer-reviewed research articles, and he has three patents in the immunology field. Since 1999, Dr. Saxon has served as editor-in-chief of the journal Clinical Immunology.

Dr. Saxon received his MD from Harvard Medical School. He is board-certified in Internal Medicine, Allergy and Immunology, and Diagnostic Laboratory Immunology. He is a member of the American Academy of Allergy and Immunology, where he serves on the Research Awards Committee, the Nominating Committee, the Primary Immunodeficiency Disease Committee and the Clinical and Diagnostic Immunology Committee; and where has served in the past as Chairman of the Basic and Clinical Immunology Section.

**Dr. Bruce J. Kelman**
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Bruce J. Kelman, Ph.D., D.A.B.T., holds positions as Principal and President of GlobalTox, Inc. Dr. Kelman has approximately 25 years experience in toxicology and has served as a consultant and expert in numerous investigations across North America. He has evaluated numerous claims of personal injury and health impacts from many chemicals and drugs, and has presented a variety of health risk concepts to policy makers, government regulators, citizen groups, and individuals involved in all aspects of the legal process.

Dr. Kelman holds a Ph.D. from the University of Illinois (1975) and is certified in toxicology by the American Board of Toxicology (original certification in 1980 with recertifications in 1985, 1990, 1995 and 2000).Dr. Kelman is a member of the Society of Toxicology, American College of Occupational and Environmental Medicine, American College of Toxicology, American Society for Experimental Pharmacology and Therapeutics, Society for Experimental Biology and Medicine, and Teratology Society.

Nevertheless, except for persons with severely impaired immune systems, indoor mold is not a source of fungal infections, and current scientific evidence does not support the idea that human health has been adversely affected by inhaled mold toxins in home, school, or office environments. Thus, the notion that "toxic mold" is an insidious, secret "killer," as so many media reports and trial lawyers would claim, is "junk science" unsupported by actual scientific study.

Deposition of Bruce Kalman July 2008

Q Was he the person you were dealing with when GlobalTox was preparing the Manhattan Institute report?

A At this point I would have to go back and look. I don't remember.

Q Did you have any conversations with Mr. Howard -- well, did you have any conversations with Mr. Howard in or around 2003 about what the Manhattan Institute was?

A No, I never had a conversation about what the organization was.

Q Do you recall who initially reached out or who made the initial contact that resulted in GlobalTox being hired to prepare this Manhattan Institute report?

A I don't remember the individual.

Q Do you remember how it came about; what was the genesis of how the Manhattan Institute report came about?

A I got a call. I remember the person I was talking to said they wanted to -- they read the ACOEM position statement on mold; that it was hard to understand, and I said that it had been written for physicians. And at the time, the question was, Well could you write something -- would you be

willing to write an article that would be more assessable, for example, to judges.

Q Did he tell you why it was he wanted this to be assessable to judges?

A That's all he said.

Q Did he say -- did he tell you what the Manhattan Institute was about?

A You asked me that already.

Q And you don't recall him telling you any of the specifics of that organization?

A That's right.

Q And when you had these interactions with him, did you have at that time any state of mind about what the Manhattan Institute was about?

A No. I never heard of it before.

Q And then eventually you entered into a contract to create the Manhattan Institute report; correct?

A Yes.

Q And under that contract you agreed that GlobalTox's charges would not exceed 25,000 without getting the prior approval of the Manhattan Institute report; correct?

A I believe that's what was in the contract that we went back and found.