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Testimony of James Repace, MSc.
On SB 419 :
"An Act Prohibiting Smoking in
Regulated Areas of Casinos".

Before the Senate of the State of
Connecticut, Public Health
Committee, Raised Bill No. 419
February Session, 2008,
LCO No. 1845
February 29, 2008

Senator Handley, Representative Sayers, and
Members of the Public Health Committee:

1. My name is James Repace. I am an international secondhand smoke consultant, and have been invited to testify as an expert witness in this hearing by the United Auto Workers, Region 9A. I have published 83 scientific papers, of which 75 concern research on the exposure, dose, risk, and control of secondhand smoke (SHS), over a period of 37 years. I was a science policy analyst and staff scientist at the U.S. Environmental Protection Agency in Washington DC for 19 years, and a research physicist at the Naval Research Laboratory for 11 years. I was the principal spokesman on indoor air pollution at the EPA for 7 years. I assisted the U.S. Department of Labor in its proposed rule to regulate smoking in the workplace, and the U.S. Department of Transportation in its project to measure secondhand smoke on passenger aircraft. My CV is downloadable from my website.

2. I have testified before both the U.S. Senate and House of Representatives on SHS, and provided technical testimony on the risks to flight attendants from smoking on aircraft, aiding the Aviation Subcommittee in its decision to ban smoking on domestic flights. I published the first scientific paper showing that SHS was a major source of public exposure to air pollution, and the first risk assessment of passive smoking and lung cancer, estimating that 5000 nonsmoking Americans died annually from SHS exposure at work and at home.

3. For my achievements on SHS, I was awarded the Surgeon General's Medallion from Dr. C. Everett Koop, the William Caham Distinguished Professor Award from the Flight Attendant's Medical Research Institute, the Innovator Award from the Robert Wood Johnson Foundation, and a Lifetime Achievement Award from the American Public Health Association.

4. I am a visiting assistant clinical professor at the Tufts University School of Medicine, Department of Public Health and Family Medicine. I have been in private

practice for 10 years and have consulted on SHS for many foreign governments, including Australia, Chile, Canada, England, Ireland, Hong Kong, Norway, The Netherlands, and New Zealand.

5. The 2006 California EPA Report on Environmental Tobacco Smoke as a Toxic Air Contaminant (CalEPA, 2006) concludes that SHS causes lung, breast, and nasal sinus cancer, as well as heart disease mortality, and can induce adult onset asthma, and The 2006 Surgeon General's Report states unequivocally: "There is no safe level of SHS" (SG, 2006). A number of studies have reported decreases in acute myocardial infarction (heart attack) following smoking bans (Juster et al. 2007), and the Centers for Disease Control and Prevention has warned nonsmokers with cardiovascular conditions "to avoid exposure to SHS" (Pechacek and Babb, 2004). Because some persons frequenting casinos will have undiagnosed heart or arterial conditions, they are placed at risk unknowingly. The effects of even brief (minutes to hours) passive smoking are often nearly as large (averaging 80% to 90%) as chronic active smoking (Barnoya and Glantz, 2005). Although ventilation can affect levels of SHS, ASHRAE (2005), the international society of ventilation engineers, stated flatly: "no engineering approaches, including current and advanced dilution ventilation and air cleaning technologies have been demonstrated or should be relied upon to control [SHS] in spaces where smoking occurs."

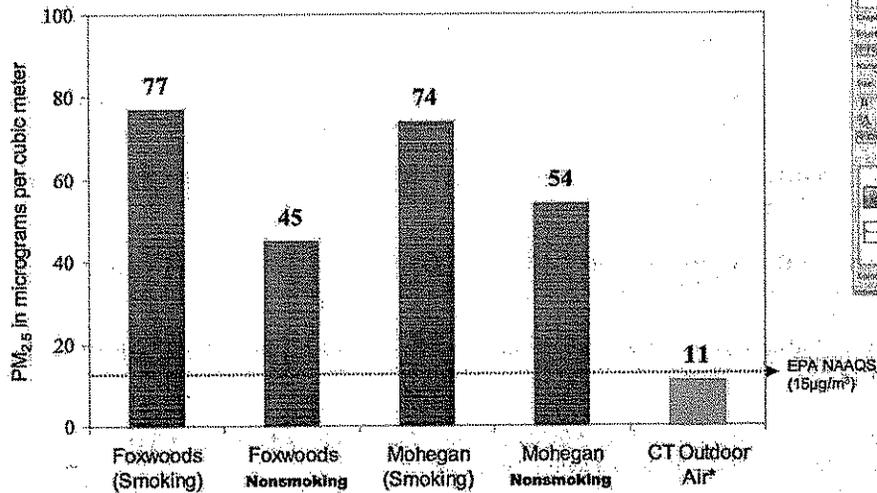
6. The Bill before you, "An Act Prohibiting Smoking in Regulated Areas of Casinos," is important because Secondhand Smoke (SHS) is a significant threat to the health of casino workers and casino patrons. Although modern casinos may have large space volumes and state-of-the-art ventilation systems, these cannot eliminate SHS. Similarly although some casinos maintain nonsmoking areas, these areas are not smoke free. This has been demonstrated in Connecticut Casinos. On February 23, 2008, (last Saturday night), scientists from the Roswell Park Cancer Institute in Buffalo, NY measured respirable particles (RSP), a federally regulated outdoor air pollutant, using a real-time portable air pollution monitor in both the Foxwoods and Mohegan Sun Casinos here in Connecticut (Skeps et al., 2008). They have shared their data with me for this hearing. Figures 1 and 2 below show area-monitored air pollution levels which reflect the average SHS concentrations in smoking and nonsmoking areas.

7. Figure 1 shows RSP pollution in the smoking areas of both Foxwoods and Mohegan Sun are similar and about 7 times outdoors. Fig. 1 also shows that while the nonsmoking areas in both casinos are lower than in the smoking areas, they remain heavily polluted with RSP at levels 4 to 5 times outdoors. Figure 2 shows that whether it's nonsmoking Bingo, Poker, or Slots, RSP remains 3 to 5 times outdoors, and in all cases 2 to 4 times the level of the Federal Clean Air Standard. This is not surprising and agrees well with measurements I have made in the Delaware Park Casino in Wilmington, DE in 2004 (Repace, 2004), and Harrahs, Philadelphia Park, and the Mohegan Sun Casinos in Pennsylvania (Repace, unpublished). In the Delaware Park Casino, air quality measurements I made demonstrated a 90 to 95% drop in fine particle and carcinogen air pollution in this casino after a state-wide workplace smoking ban.

8. Studies I have conducted of the SHS biomarker, cotinine, in the urine of casino workers in Indiana in the Horseshoe Casino in Hammond Indiana, indicate that casino workers exposed in close proximity to smokers have SHS doses many times higher than the average U.S. nonsmoker for much longer periods of time, and thus are at considerably greater risk of the diseases of SHS than the average person (Repace, 2007). These results show that SHS in casinos creates a serious threat to worker & patron health which neither ventilation nor nonsmoking sections can control to *de minimis* levels (Repace, 2005).

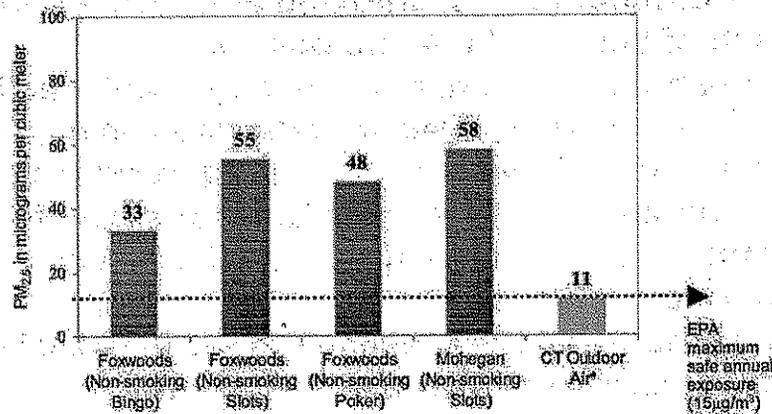
Figure 1.

Average Fine Particle Air Pollution in Casinos in Connecticut



*Used for comparison purposes. Based on the 2007 average PM_{2.5} level as of 2/25/2007 of the 15 Connecticut EPA monitoring sites <www.epa.gov/air/data/>. Data collected by Roswell Park Cancer Institute from 6:30pm to 9:30pm, Saturday February 24, 2008.

Figure 2. Average Fine Particle Air Pollution in Non-smoking Areas within Connecticut Casinos



*Used for comparison purposes. Based on the 2007 average PM_{2.5} level as of 2/25/2007 of the 15 Connecticut EPA monitoring sites. <http://www.epa.gov/air/data/>

Data measured by Roswell Park Cancer Institute (2008).

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Summary:

- 1. Measurements of respirable particulate air pollution in the Foxwoods and Mohegan Sun Casinos last Saturday night showed levels 7 times outdoors in smoking areas and 5 times outdoors in nonsmoking areas, threatening the health of both workers and patrons.**
- 2. Fine particle and carcinogen air pollution declined by 90% to 95% to outdoor levels in Delaware casinos, bars, and restaurants following a smoke-free workplace law.**
- 3. Secondhand smoke is an occupational risk to workers for chronic heart disease, lung, breast, and nasal cancer, and respiratory disease.**
- 4. Secondhand smoke presents an acute risk of heart attack to persons with cardiovascular disease.**
- 5. Unlike smoke-free workplaces, ventilation or air cleaning cannot control secondhand smoke to safe levels.**