My name is Peter Orris and I am a board-certified specialist in Occupational and Environmental Medicine; Professor and Chief of Service, Occupational and Environmental Medicine at the University of Illinois School Public Health with an affiliate appointment at the University of Illinois Abraham Lincoln School of Medicine; a Professor of Internal Medicine at Rush University; and an Adjunct Professor of Preventive Medicine at Northwestern University’s Feinberg School of Medicine.

I have reviewed Dr. Andrew Gray’s report titled “Air Quality Impacts and Health Effects Due to Large Stationary Source Emissions In and Around South Africa’s Mpumalanga Highveld Priority Area (HPA).”

Based on my review of Dr. Gray’s report I conclude that:

1. The 12 coal fired power plants, the Synfuels facility and the NatRef refinery (“14 facilities”) are collectively causing unhealthy levels of air pollution in the Highveld Priority Area and the nearby cities of Johannesburg and Pretoria, and constitute an
immediate and significant public health hazard. Cumulative emissions from the 14 facilities created acute exposures in 2016 that exceeded the World Health Organization’s guidelines for daily or hourly average maximums for all pollutants. Implementing the 2020 Minimum Emission Standards (MES) would eliminate the WHO guideline exceedances for 24-hour average PM$_{10}$ and 24-hour average PM$_{2.5}$, but would not eliminate exceedances for 24-hour average SO$_2$ or one-hour average NO$_2$ WHO guidelines, despite substantial reductions of those pollutants throughout the modeled area.

2. The 14 facilities were in all likelihood responsible for between 305 and 650 early deaths from PM$_{2.5}$ in the studied area in 2016. It is likely therefore, based on the recorded emissions, that between 182 and 387 premature deaths per year from PM$_{2.5}$ could be avoided if the facilities were required to comply with the 2020 MES.

3. All 120 sensitive sites (mostly schools and hospitals) analyzed in Dr. Gray’s study were exposed to 24-hour average SO$_2$ levels from the 14 facilities alone that exceed the World Health Organization guideline of 20 µg/m$^3$. Kwanala Primary School was exposed to more than four times that limit. In 2016, 28 schools and hospitals were exposed to acute (one-hr average) NO$_2$ concentrations above the World Health Organization guideline of 20 µg/m$^3$ in 2016. Thus thousands of schoolchildren, the elderly and the sick are being exposed to acute pollution concentrations that can cause asthma attacks and permanent lung damage.

4. Reducing SO$_2$ from the 14 facilities would reduce the formation of secondary PM$_{2.5}$, resulting in major gains in health and reduced sickness and death in the Highveld Priority Area as well as in Johannesburg and Pretoria.

**Background and Experience**

For 35 years, I practiced inpatient and outpatient general internal medicine at a public hospital in Chicago, USA. I have extensive training and experience in exposure assessment, epidemiology, toxicology, and diagnosing and treating environmentally related diseases. In my medical practice, I have assessed, diagnosed and managed thousands of patients who had developed, or were at risk of developing, a wide range of adverse effects from environmental
and/or occupational exposure to industrial pollutants, heavy metals, solvents and other hazards. I have spent much of my clinical career making determinations as to whether a causal relationship exists between a person’s exposure and their health problems.

I extensively read medical, toxicological and epidemiological literature regarding environmental contaminants and pollutants. In doing so, I am routinely interpreting and assessing the strength and weaknesses of individual studies both in terms of study design and results. I also routinely make judgments as to what the body of literature collectively indicates about exposures and their health effects. Details about my background and full CV are below.

I was asked by the Centre for Environmental Rights to comment on the health impact modeling of Dr. Andrew Gray of May 2019. Dr. Gray’s modeling (1) assessed the air quality and health impacts of 2016 emissions from 12 Eskom coal-fired power plants, a Sasol Synfuels facility and a NatRef refinery in and around the Highveld Priority Area (HPA), and (2) compared 2016 actual emissions and health impacts from PM$_{2.5}$ with projected emissions and impacts if the 2020 MES were implemented; and (3) modeled pollution concentrations from the 14 facilities on 120 schools and hospitals where residents are particularly vulnerable to the effects of air pollutants.

**Coal Plant Emissions and Public Health**

The scientific literature of health impacts caused by air pollutants from coal combustion in coal-fired power plants is robust. It documents the profound effects of these pollutants on health, especially of vulnerable individuals including children, the elderly, pregnant women, and those suffering from asthma, heart, and lung disease.

Burning coal releases a variety of toxic compounds into the air. Most prominent are particulates, with particulates smaller than 2.5 micrometers diameter (PM$_{2.5}$) being the most dangerous to health. In addition, sulfur oxides (primarily SO$_2$), nitric/nitrous oxides (NO$_X$), as well as ozone are the subject of concern and attention. These are the compounds most frequently measured and discussed, but others are also present, including mercury, arsenic, boron, cadmium, cobalt, chromium, fluoride, lead, lithium, molybdenum, radium, selenium, and thallium. Coal combustion also emits volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), dioxin, and methane (a precursor of ozone), all of which are
known to harm human health.

The World Health Organization (WHO) estimates that 4.2 million deaths in 2016 globally are due to outdoor air pollution, with 25 - 30% produced by energy generation, much of it coming from coal-fired power plants. Exposure to pollutants from coal combustion causes injury to the airways and lungs via oxidative stress and leads to inflammation, cytotoxicity (direct harm to cells), and cell death. Exposure significantly increases the risks of developing cardiovascular disease, strokes, cancer, and respiratory diseases, leading to hospital admissions and deaths.

Pollution from coal burning disproportionally effects children, as they are particularly vulnerable to air pollution: they breathe proportionally more air because of their higher respiratory rate, they spend more time outdoors exposed to pollution, and their lungs and other organs are still developing. Today’s youth and their children will experience worsened effects of air pollutants attributable to continued burning of coal.

Coal-fired power plants contribute to the global burden of cardiovascular disease primarily through the emission of PM. As described below, PM$_{2.5}$ has been causally linked to cardiovascular disease and death (US EPA, 2009b). The WHO estimates that worldwide, 5 percent of cardio-pulmonary deaths are due to PM pollution (World Health Organization, 2013). The mechanism of injury is vascular oxidative stress leading to vessel inflammation and cytotoxicity. Long-term exposure to PM$_{2.5}$ has been shown to accelerate the development of atherosclerosis and increase emergency department visits and hospital admissions for ischemic heart disease and congestive heart failure. The US EPA reports that a majority of the studies it reviewed found a 0.5 to 2.4 percent increase in emergency department visits and hospital admissions for cardiovascular diseases per each 10 μg/m3 increase in annual average PM$_{2.5}$ concentrations (US EPA, 2009b). Lung cancer mortality increases with increasing exposure to combustion emissions (Lewtas, 2007). Studies conducted in China and Latin America confirm the significant link between outdoor air pollution and cardiovascular events (Liu, 2013; Romieu, 2012).

Research has found that exposure to air pollution during pregnancy can cause low birth weight (Sram et al., 2005). Studies that investigated the effects of SO$_2$ and PM (China, South Korea), and NO$_2$, CO, and ozone (South Korea), concluded that air pollution containing these
constituents was associated with low birth weight (Sram et al., 2005). Studies have shown infant mortality increased with use of coal in countries that had mid to low infant mortality rates at baseline (1965), such as Chile, China, Mexico, Thailand, Germany, and Australia, although this effect was not seen in those countries with high baseline infant mortality (Smith, 2013; IEA 2007).

Pollutant-specific health effects

Sulfur dioxide

Exposure to SO$_2$ emitted by coal burning power plants increases the incidence and severity of respiratory symptoms of those living nearby, particularly children with asthma. For adults and children who are susceptible, inhalation of SO$_2$ causes inflammation and hyper-responsiveness of the airways, aggravates bronchitis, and decreases lung function (US EPA, 2017). Community-level SO$_2$ concentration is associated with hospitalizations for asthma and other respiratory conditions, as well as emergency department visits for asthma, particularly among children and adults over 75 years (US EPA, 2017).

Inhaled SO$_2$ is readily absorbed in the nasal passages of people at rest. As physical activity increases, breathing rate and breathing through the mouth increase, resulting in greater penetration of SO$_2$ into the lungs. Relative to healthy adults, children, and individuals with asthma or allergic rhinitis have an increased amount of oral breathing, and may have greater SO$_2$ penetration into the lungs (US EPA, 2017).

Acute SO$_2$ exposure causes asthma attacks, asthma hospital admissions and emergency department visits for children. SO$_2$ inhalation produces bronchoconstriction in both healthy adults and those with asthma. The response to SO$_2$ in healthy adults occurs primarily from activation of sensory nerves in the respiratory tract, resulting in neural reflex responses through the vagus nerve. It occurs at higher concentrations than the response in people with asthma. In adults with asthma, the response is partly due neural reflex response and party from involvement of inflammatory mediators. Inhalation of SO$_2$ increases allergic inflammation in adults with asthma or allergic airways disease. Allergic inflammation and increased airway responsiveness due to short-term SO$_2$ exposure may be linked to asthma exacerbation seen in epidemiologic studies (US EPA, 2017).
People with asthma, particularly children, are at increased risk for SO₂-related health effects compared with those without asthma. Children are at increased risk for SO₂-related health effects based on their increased ventilation rates relative to body mass and increased oral breathing. There is also evidence from epidemiologic studies of respiratory hospitalizations, particularly among adults over 75, suggesting of increased risk of SO₂-related health effects for older adults compared to other lifestages (US EPA 2017).

**Oxides of nitrogen**

Oxides of nitrogen (NOₓ) are by-products of fossil fuel combustion in automobiles, coal-fired power plants, and other sources. NOₓ react with chemicals in the atmosphere to create pollution products such as ozone in smog, nitrous oxide (N₂O), and nitrogen dioxide (NO₂).

Elevated concentrations of NO₂ may contribute to the development of asthma and increase susceptibility to respiratory infections. People with asthma, as well as children and the elderly are at higher risk for the health effects of NO₂. NO₂ reacts with other chemicals in the air to form particulate matter and ozone, which also have harmful effects on the respiratory system (US EPA 2019).

When asthmatic children are exposed to NO₂, they can experience increased wheezing and coughing (US EPA, 2019). At low concentrations (0.2–0.5 ppm), NO₂ has been found to result in lung function decrements in asthmatics (US EPA, 2008a). Exposure to NO₂ also increases susceptibility to viral and bacterial infections, and at high concentrations (1–2 ppm) can cause airway inflammation (US EPA, 2019). Increases in ambient NO₂ levels (3–50 ppb) are linked to increases in hospital admissions and emergency department visits for respiratory problems, particularly asthma (US EPA, 2019).

Exposure to NO₂ during childhood can decrease children’s lung function (Perera, 2019). A study of a cohort of fourth graders found decreased lung function growth in children exposed to higher levels of NO₂ (Gauderman, 2000).

**Mercury**

When coal is burned, mercury vapor is released into the atmosphere. The United Nations estimates that 26 per cent of global mercury emissions (339–657 metric tons/year) come from
burning coal in power plants (Pacyna et al., 2010). The mercury from coal-burning power plants is deposited into water-ways, converted to methyl-mercury, and passed up the aquatic food chain (Lippmann et al., 2003, National Research Council (US), 2010). Local, regional, and distant mercury emissions contaminate fish. Methyl-mercury-contaminated fish, when eaten by pregnant women, can cause developmental effects in their offspring, such as delayed neurodevelopment, plus subtle changes in vision, memory, and language (World Health Organization, 2007). Epidemiological studies suggest that many newborns and children around the world have levels of mercury in their bodies that put them at risk of these adverse effects. Data from the United States suggest that more than 300,000 newborns each year are born at risk for these effects (Mahaffey et al., 2004). A study in Spain found 42 percent of tested children tested had mercury levels in their hair above the EPA reference concentration for safety of 1 μg Hg/g. A study in Hong Kong estimates that a majority of children exceed safety levels of mercury because of consumption of mercury-contaminated fish (Diez et al., 2009, Lam et al., 2013). Prenatal exposure to mercury can lead to decreased motor and cognitive abilities even at low exposures. (Nat’l Research Council, 2000) Low-level mercury exposures have been linked to higher risks of hypertension, heart disease, heart attack, strokes, renal dysfunction (Houston, 2011; Roman, 2011) and endocrine disturbances (Tan, 2009).

**PM2.5**

Particulate matter is directly emitted from coal plants (primary PM) and is also formed from conversion of SO\textsubscript{2} and NO\textsubscript{2} emissions into particulates of sulfate and nitrates (secondary PM). In a report evaluating over 40 studies on the health effects of exposure to PM\textsubscript{2.5}, the US Environmental Protection Agency (US EPA) concluded that PM\textsubscript{2.5} likely causes respiratory symptoms, the development of asthma, and decrements in lung function in children (US EPA, 2009b). The EPA concluded that an annual average 10 μg/m3 increase in PM\textsubscript{2.5} is associated with a 1 to 3.4 percent decrease in forced expiratory volume (US EPA, 2009b).

The EPA also concluded that exposure to PM\textsubscript{2.5} increases emergency department visits and hospital admissions for respiratory-related symptoms such as infections and chronic obstructive pulmonary disease. Epidemiological evidence from Australia and New Zealand (Barnett et al., 2005), Mexico (Barraza-Villarreal et al., 2008), Canada (Chen et al., 2004), and Europe (de Hartog et al., 2003) confirm that these effects on the respiratory system are seen
wherever communities are exposed to PM$_{2.5}$.

Pediatric intensive care unit admissions for asthma increase with PM. (Silverman 2010). Asthma is a lung disease that causes wheezing, breathlessness, chest tightness, and nighttime or early morning coughing. In addition to its physical symptoms, childhood asthma causes anxiety and is associated with more severe behavioral problems in children with attention-deficit disorder. Children exposed to PM$_{2.5}$ have decreased lung function growth at age 18 (Avol, 2001). A study of children in New York City found the rates of intensive care unit admissions and hospitalizations increased 26% and 19%, respectively, when PM$_{2.5}$ concentration increased by 12 μg/m3 (Silverman, 2010).

Long-term exposure to PM$_{2.5}$ is causally linked to the development of lung cancer (US EPA, 2009b). Recent research has found that PM$_{2.5}$ correlates with neurological impacts, Alzheimer’s and dementia (Underwood 2017; Cacciottolo et al., 2017), delinquent behavior (Younan et al., 2018), diabetes (Bowe et al., 2018), kidney disease (Sellenrich, 2016), and hypertension (Zhang et al., 2016; Zhengmeng et al., 2018).

**Comments on Dr. Andrew Gray’s Air Quality Modeling and Health Impacts in the Highveld Priority Area in South Africa**

I have reviewed Dr. Andrew Gray’s full report of May 2019 assessing the air quality and health impacts of 2016 emissions from 12 Eskom coal-fired power plants, a Sasol Synfuels facility and a NatRef refinery in and around the HPA. His health risk analysis estimates mortality from PM$_{2.5}$ exposures. This includes direct PM emissions from the emissions sources, as well as secondary PM formed through the chemical reactions of SO$_2$ and NO$_X$ emissions in the atmosphere, which accounts for the majority of the PM$_{2.5}$ from the modelled sources. His analysis also includes quantification of how emissions and health impacts would be reduced with implementation of South Africa’s 2020 Minimum Emission Standards (MES).

Dr. Gray’s health risk analysis uses state of the art methodology based on data from the WHO Global Burden of Disease (GBD) 2010 project and an integrated exposure–response (IER) model developed by Burnett et al. (2014) to predict the relative risk associated with increased levels of exposure to PM$_{2.5}$ for four causes of mortality in adults: ischemic heart disease, cerebrovascular disease (stroke), chronic obstructive pulmonary disease, and lung cancer.
The IER model also assesses relative risk functions for the incidence of acute lower respiratory infection that can be used to estimate mortality in children under five years of age. Total mortality in the IER model is estimated as the sum of the four cause-specific mortality risks for the adult population and the acute lower respiratory infection risk for children.

Health impacts beyond PM$_{2.5}$ are not reflected in Dr. Gray’s assessment because integrated exposure-response models and relative risk factors for other pollutants have not been sufficiently developed by the scientific community. In other words, Dr. Gray’s health impact findings are conservative relative to the actual health impacts of total emissions from the 14 facilities.

Dr. Gray found that the 14 sources accounted for a significant increase in ambient pollutant concentrations in the region during 2016 and were substantially responsible for causing the ambient air quality to exceed acceptable standards. Dr. Gray’s analysis found that actual PM$_{2.5}$ emissions in 2016 from the 14 sources were responsible for between 305 and 650 premature deaths in the modeling area. Lethabo, Kendal, Kriel and Synfuels were the worst offenders, with over 50 premature deaths each. If the 14 sources complied with the 2020 Minimum Emission Standards (MES), between an estimated 182 and 387 premature deaths would likely be avoided every year in the Highveld Priority Area and the nearby cities of Johannesburg and Pretoria; a 60 percent improvement relative to premature deaths from 2016 actual emissions.

In my opinion, Dr. Gray's analysis makes clear that the emissions from the 14 modeled sources pose a serious threat to human health in the study area. Based on global experience and WHO conclusions concerning the health benefits of reducing ambient PM$_{2.5}$, if the modeled sources could be brought into compliance with the 2020 Minimum Emission Standards, in particular reducing SO$_2$ to reduce formation of secondary PM$_{2.5}$, there would be major gains in health and a decrease in sickness and death in the Highveld Priority Area and the nearby cities of Johannesburg and Pretoria.

It is also my opinion that the high levels of air pollution in and around the Highveld Priority Area constitute an immediate and significant public health hazard that should be remedied to save lives and allow current and future generations of South Africans to live longer and healthier.
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60. Zhengmeng Y. et al. 2018. In Utero Exposure to Fine Particulate Matter Causes Hypertension Due to Impaired Renal Dopamine D1 Receptor in Offspring. *Cellular Physiology and Biochemistry* 46, 1, 148.
CURRICULUM VITAE – JUNE 2019

PETER ORRIS, MD, MPH, FACP, FACOEM

Occupational & Environmental Medicine, University of Illinois Hospital and Health Sciences System, 835 S. Wolcott Street, (MC 684), Rm 144, Chicago, IL 60612,

Dir. Phone +1 312-413-0105,
Department +1 312-413-0369, Fax +1 312-413-8485, Email porris@uic.edu

NARRATIVE: I am a board-certified specialist in Occupational and Environmental Medicine. I received my medical degree from the Rosalind Franklin University’s Chicago Medical School and a Master of Public Health degree from Yale University. I completed a residency in Internal Medicine at Cook County Hospital (now Stroger Hospital) in Chicago, and have practiced inpatient and outpatient general internal medicine on the teaching wards there for 35 years. I have extensive training and experience in exposure assessment, epidemiology, toxicology, and diagnosing and treating environmentally-related diseases.

I have served on the medical staffs of Mercy Hospital, Mount Sinai Hospital, Northwestern Community Health Care, Rush University Medical Center, and the University of Illinois Hospital and Health Sciences System where I currently serve as the Chief of Occupational and Environmental Medicine. In my capacity as Chief of Service, I oversee the clinical care of the patients at the clinics staffed by the physicians and advanced practice nurses in our department. These patients are referred primarily due to injury or illness at work or for evaluation of environmental exposures. I have designed, managed and evaluated medical monitoring programs, exposure surveillance and treatment programs, and analyzed their results for exposures such as heavy metals, solvents, silica, asbestos, and other hazards. My colleagues and I see patients as part of the World Trade Center Medical Treatment Program for first responders, restoration, and clean-up workers who were exposed as a result of their exposures at Ground Zero after the towers fell. As part of our World Health Organization’s Collaborating Center in Occupational Health, I am a senior member of the faculty group that trains resident physicians preparing for board-certification in Preventive Medicine in Occupational and Environmental Medicine.
I am a Professor of Environmental and Occupational Health Sciences in the University of Illinois School of Public Health with an affiliate appointment at the University of Illinois Abraham Lincoln School of Medicine. I am a Professor of Internal Medicine at Rush University, and have held an Adjunct Professorship in Preventive Medicine at Northwestern University’s Feinberg School of Medicine for close to 40 years. I hold elected fellowships in the American College of Physicians and the American College of Occupational and Environmental Medicine, as well as elected memberships in Alpha Omega Alpha, the medical honor society, and fellowship in the Chicago Institute of Medicine. I am a member of the American Public Health Association and the American Medical Association.

I was appointed by multiple Governors to serve over 10 years on the State of Illinois’ Board of Health, and by the International Joint Commission of the US and Canada to serve as US Co-Chair of its Health Professionals Task Force for over 15 years. I served as well on the Chemical Health Advisory Committee of Health and Environment Canada as the only foreign expert appointed by the Government of Canada. I chaired the Public Health and Environment Committee of the World Federation of Public Health Associations for over 25 years, and recently received its Lifetime Achievement Award. I also serve as Co-Chair of the Environment Caucus of the World Medical Association.

I currently serve on the editorial boards of the American Journal of Industrial Medicine, the Journal of Public Health Policy, Revista Cubana De Salud Y Trabajo, and New Solutions. I have served as a reviewer for the Journal of Occupational and Environmental Medicine; Proceedings National Academy of Sciences; USEPA; World Bank Group; Epidemiology and Air Quality Monitoring (TCEAQ) Department of Health, Republic of South Africa; and the Transportation Research Board of the US National Academies.

I have been an advisor to federal, state and local governments, as well as environmental organizations, labor unions, corporations, and UN agencies. I have extensive experience teaching and lecturing on the health impacts of coal-fired power plants, mercury exposure, epidemiologic studies, causation, and air pollution. I have edited and authored numerous articles, book chapters and governmental reports in the field of Occupational and Environmental Medicine.
BIRTH DATE        October 7, 1945

BIRTHPLACE       Los Angeles, California

EDUCATION

Undergraduate  1967    B.A          Harvard College

Graduate        1970    M.P.H.       Yale University
                1975    M.D.          R. Franklin U. Chicago Medical School

Residencies     1975-8  Internal Medicine Cook County Hosp.
                1977-9  Occupational Medicine Cook County Hosp.

Additional      1965    Bio-medical Electronics Harvard University
                1968    Advanced Circuit Harvard University

CERTIFICATION AND LICENSES

1976- State of Illinois, Physician and Surgeon, #36-53014

1979- Certified, Amer Board of Preventive Medicine in Occupational Medicine  2001-
      Certified Medical Review Officer #01-04536 (Recertified 2005,8,14)

CURRENT POSITIONS

2010- Physician Advisor, Retirement Board, Chicago Policemen’s Annuity Benefit Fund  2008-
      Chair, Research Collaborative, Health Care Without Harm

2000- Chief of Service, Occupational and Environmental Medicine University of Illinois
      Hospital and Health Sciences System

1999- Director, University of Illinois at Chicago Occupational Health Services Institute

CURRENT ACADEMIC APPOINTMENTS

• Professor of Internal Medicine, Rush University College of Medicine
• Adjunct Professor of Environmental & Occupational Health Sciences University of Illinois at Chicago School of Public Health with affiliate appointment at the Global Health Center, UI Abraham Lincoln School of Medicine

• Adjunct Professor of Preventive Medicine, Northwestern University Feinberg School of Medicine

CURRENT HOSPITAL STAFF APPOINTMENTS

2005- Rush University Medical Center (Attending) 1999- U. of I. Hosp & Medical Center (Attending)
1979- Cook County Hospital (Voluntary Senior Attending)

CURRENT APPOINTED OR ELECTED POSITIONS

Hospital:

2000- Executive Committee, Medical Staff, University of Illinois Medical Center 1982-
Institutional Review Board, Cook County Health and Hospitals System

(Co-Chair, 1991-4, Chair, 1994-2007)

Professional Societies:

2018- Co-Chair, Environmental Caucus, World Medical Association
2012- Liaison to the World Federation of Public Health Associations for the APHA 2009-
Board member, Chicago Physicians for Social Responsibility
2006- Consultant, Doctors Council, Service Employees International Union 2002-
Educational Program Director, Medical Directors Club of Chicago
1999- Member, Policy Committee, World Federation of Public Health Associations 1993-
Delegate, Illinois State Medical Society
1992- Councilor, Chicago Medical Society
Community or Government:

2016  Grant Reviewer, South African National Research Foundation

2011- Member, National Occupational Research Agenda Healthcare and Social Assistance Sector Council, NIOSH, CDC, USPHS, DHHS, US Government

1998- Advisor, Health Care Without Harm

1993- Medical Advisory Com., International Brotherhood of Teamsters


1975- Advisor, Community Organizations in Chicago, Mossville Norco, and New Sarpy Louisiana, Durban South Africa, Chennai and Bilaspur India, Nairobi Kenya and others

AWARDS AND HONORS

2017  Lifetime Achievement Award, World Federation of Public Health Associations  2016  Elected to Alpha Omega Alpha, Medical Honor Society

2016  Emeritus Status, Illinois State Medical Society

2015  Alice Hamilton-Tony Mazzocchi Award, Occupational Health Section, Amer Pub Hlth Assoc

2015  Paul Cornely Award, Health Activist Dinner at APHA

2014  Environmental Health Hero Award, Health Care Without Harm  2013- Fellow, Institute of Medicine Chicago

2012- Miembro Correspondiente, La Sociedad Cubana de Salud Publica

2012  Selection as the only Occupational Medicine “Top Doctor” in the Chicago Magazine

2011  Selection as a US News and World Report “Top Doctor” in the US

2011  Distinguished Alumnus, Chicago Medical School, Rosalind Franklin University of Medical Sciences

2009  Teacher of the Year, University of Illinois Occupational Med. Residency  2009  Public Service Honor Role, Yale School of Public Health
2009  Selection as one of America’s Top Physicians, Consumer Res Council Of America  
2007  Letter of Congratulations from the Governor of Illinois  
2005  Selection as a “Best Doctor” in the United States, Castle Connelly Ltd  
2005  Outstanding Service Award, Executive Medical Staff of Stroger Hosp.  
2004  Certificate of Appreciation, University of the Philippines, Manila  
2003  Certificate of Appreciation, Illinois State Medical Society  
2001  Certificate of Appreciation, Arab Community Center for Economic and Social Services Community Health and Research Center, Dearborn, MI  
2001  Selection (yearly to present) as a “Top Doctor” in Midwest, Castle-Connolly Ltd  
2000  Certificate of Appreciation, World Federation of Public Health Assoc. 9th International Congress, Beijing, China  
1999  Certificates of Appreciation, American Medical Student Association, APHA Occupational Health & Safety Section, Mt. Sinai Family Practice, Air and Waste Management Association, Certificates of Appreciation- Greenpeace USA, Peace Corps, Chicago Medical Society  
1992  Fellow, American College of Physicians  
1988  Fellow, American College of Occupational and Environmental Medicine  
1984-8  Fellow, American Academy of Occupational Medicine  
1981  Certificate of Appreciation, Nat'l Safety Council  
1980-9 Fellow, American College of Preventive Medicine  
1973  Ciba Community Affairs Award  

**PROFESSIONAL JOURNAL ACTIVITIES**  
American Journal of Industrial Medicine (Contributing Editor)  
Journal of Public Health Policy (Management Committee & Editorial Board)  
Revista Cubana De Salud Y Trabajo (Member, Editorial Board)  
New Solutions (Member, Editorial Board)
Journal of Occupational and Environmental Medicine (Reviewer)  Proceedings National Academy of Sciences (Reviewer)
Environmental Research (Reviewer)

**PROFESSIONAL SOCIETY MEMBERSHIPS**

Institute of Medicine Chicago
American College of Occupational and Environmental Medicine  American College of Physicians
American Medical Association  American Public Health Association
Association of Occupational and Environmental Health Clinics  Central States Occupational Medical Association
Cook County & Illinois State Medical Societies  Illinois Public Health Association
International Commission on Occupational Health  Medical Directors Club of Chicago
Physicians for a National Health Program  Physicians for Social Responsibility  World Medical Association

**RESEARCH GRANTS/ CONTRACTS:**

2016  World Bank Contract #7177859 for a criteria document “Climate Mitigation in the Health Care Sector” to advise its staff on support of health care in low and middle income countries.

2010-11  Grant for a study of the cost effects of greening health care from The Commonwealth Fund


**TEACHING:**

Medical and Public Health School
Environmental & Occupational Health, 1 quarter, Northwestern U. Feinberg School of Medicine

Preceptor, Rush Medical School Continuity Experience

Topics In Public Health, Northwestern Feinberg Sch. Of Medicine

Ethical Issues in Clinical Research, Northwestern U. Feinberg School of Medicine, 1 quarter

International Comparison of Health Care Systems, on one quarter elective, Northwestern U. School of Medicine

Occupational Medical Practice Seminar, Rush Medical College

Director, Occupational Disease Course, UIC School of Public Health

Annual lecture, Health Administration Program of Rush Medical School

Annual lectures in Occupational Epidemiology Course, UIC School of Pub. Health

Co Director Occupational Health Weekly Seminar, University of Illinois

Regular lectures on Occupational Health, Environmental Toxins, Global Warming, Health Care Organization, and Epidemiology in several courses, UIC Sch. of Pub. Health, Northwestern U. Feinberg School of Medicine, University of Chicago School of Medicine, Rosalind Franklin University Chicago Medical School, Rush University School of Medicine

Occupational Health Practice, one quarter elective seminar, Northwestern U. Med.

International Comparison of Health Care Systems, one quarter elective seminar, Northwestern U. Medical School

Cuban Health Care System Research Seminar, ten day field study course, American Medical Student Association

International Health Care Systems, U of Illinois School of Medicine

The Epidemiology of Cardiovascular Disease, UIC School of Medicine

Industrial Hygienists, Nurses, & Physicians
2018  Community Environmental Epidemiology for Policy, Community Monitoring Program, India, June 24, 2018

2004  Environmental Health and Nursing, CEI Course 1006.0, APHA 132 Annual Meeting, 11/6/04

2000  Co-Direct Medical Research Ethics, Collaborative Seminar with the Institute for Occupational Hygiene, Russian Academy of Sciences, Moscow

2000  Co-Direct Medical Waste Toxicity, Seminar on Medical Waste, sponsored by the Institute of Occupational Health, Ministry of Public Health, Havana, Cuba as part of the Caribbean Medical Society Meeting

2000-10 Lectures, Research Ethics, Cook County Bureau of Health Services

**Residents**

1979- Regular lectures to UIC residents on topics in occupational medicine

1979- Grand Rounds or formal departmental lectures at Medical Schools, and teaching Hospitals

1979- Regular supervision of the Occupational Medicine consultation Service and Clinic, Stroger Hospital of Cook County and UIC

1979-’07 Several months a year general medicine ward attending, Cook County Hospital

**Continuing Medical Education**

2018  Primary Care Physicians and the Environment, Seminar, residents, students, practitioners, Chennai, India June 23, 2918

2018  Hospitalist Grand Rounds Rush University, Climate Change and Health 2014 Central States OEMA, Health Impact of Coal Energy Generation

2005  Central States OEMA, Medical Waste Incineration: Point Counter Point

2004  Rush University, Department of Medicine Grand Rounds, “Malaria Control & DDT Toxicity: A Public Health Dilemma” Mar. 26, 2004

2004  Grand Rounds, Evanston Northwestern Hospital, “Mercury Implications for Office Practice”, Mar 5, 2004


2003  Research Ethics of Special Populations at Ethical Issues in Health Research Workshop, June 3-6, Sofia, Bulgaria

2000  Lecture, Persistent Organic Pollutants, Orlando County Medical Society and Florida Physicians for Social Responsibility, Orlando, FL

2000  The Physician’s Role Under The Americans With Disabilities Act, Midwest Clinical Conference of the Chicago Medical Society

1999  Monthly Departmental Lectures on Research Ethics at Cook County Hospital and the Cook County Bureau of Health Services

1999  Lecture Series on Occupational and Environmental Health, Roseland Community Hospital

1998  Lecture Series on Occupational Medicine, Holy Cross Hospital

1998  Clinical Management of Toxic Exposures, Michigan State University Kalamazoo Center for Medical Studies, Oct. 15. Three seminars for healthcare providers.

1995,6  Rendering a Medical Opinion in a Legal Case, One day seminar at The American College of Occupational and Environmental Medicine

1994  Clinical Aspects of Environmental Exposures, Bloomington Hospital, Bloomington, IN, ATSDR, US Public Health Service

1990-2  The Physician and the Law, UIC School of Public Health

1991,2  Occupational Medicine for the Primary Care Physician, UIC School of Public Health

1992  Epidemiology for Non-Epidemiologists, Applied Statistics Training Institute, National Center For Health Statistics, CDC, USPHS
1992 Worksite Evaluation & Pre-Placement Screening Schwab Rehab Institute
American College Of Occupational and Environmental Medicine Annual Conference

**PAST EMPLOYMENT AND POSITIONS**

2019 Consultant, WHO, Public Health Environment & Social Determinant Dept, Geneva, 2/12-4

2012-15 Member, Bureau, Strategic Approach to Int. Chemicals Management, UNEP 2011-5
President, District 6, Chicago Medical Society

2006-16 Member, State of Illinois Board of Health

2012-16 Consultant, Health Care Division, Service Employees International Union 2012-15
Member, Bureau, Strategic Approach to Int. Chemicals Management, UNEP 2012-5
Consultant, Illinois Department of Public Health

2012-5 Consultant, Health Promoting Hospitals Task Force on the Environment 2011-3
Expert Consultant, Region V, USEPA

2007-10 Member, Scientific Advisory Committee, World Trade Center Medical Programs, Mount Sinai School of Medicine, New York

2006-16 Member, State of Illinois Board of Health 2000- Medical Advisor, AFSCME Council 31 2000-07 Medical Advisor, Midwest Generation, LLC

2000-13 Director, Global Chemicals Policy Center, Great Lakes Centers For
Occupational & Environmental Safety & Health, UIC School of Public Health, 1995-14
Professor of Preventive Medicine, Rush Medical College, Rush University (dates approx.)

1995-14 Health Professionals Advisory Board, International Joint Committee of the US and Canada (US Co-Chair 1995-2009)

2010-13 Consultant, United Nations Development Program Medical Waste Project

2008-11 Member, Technical Committee Challenge Advisory Panel, Health Canada, Ottawa
1991-10 Hazmat Education Project Advisory Board, American Fed. of State, County, & Mun
Employees

2008-9 Scientific Committee 12th World Congress on Public Health


2008-9 National Commission of Inquiry into the Worker Health and Safety Crisis in the Solid Waste Industry

2005-6 Advisor, United Nations Development Program/Global Environmental Facility 2004-6 Healthy Schools Campaign

2004-9 Board of Directors, Safer Pest Control Project

2002-9 Chair, Public Health and Environment Committee, World Fed of Public Health Associations

2001-6 Executive Board, Illinois Safety Council

2001-10 Board of Directors, Hecktoen Institute For Medical Research

2001-9 Member, Working Group on Occupational Health and Safety Intergovernmental Forum on Chemical Safety (IFCS)

1997-02 Director, World Federation of Public Health Associations Persistent Organic Pollutants Project – Human Health Effects of Chemicals Project.

1996-98 Senior Medical Advisor, Greenpeace, USA

1995-07 Rush-Cook County Affiliation Research Committee (Chair, 1996)

1995 Medical Advisory Committee, John Redmond Foundation, International Association of Firefighters, AFL-CIO

1991-14 Hazmat Education Project Adv Bd, Service Employees International Union, AFL-CIO

1979-07 Senior Attending Physician, Div. of Occupational Medicine, Cook County Hospital (Stroger Hospital)
2005-6  International Ad Hoc Reviewer, 11th World Congress on Public Health/8th Brazilian Congress on Collective Health, Rio de Janeiro, Brazil


2003  Advisor, World Health Organization at the Workshop in Preparation of a GEF-Funded Global Medical Waste Project, New Delhi, India,

1999-01  Scientific Program Committee, Global Conference on Children’s Environmental Health, HHS/EPA/Health Canada/Env. Canada

1998-02  Cleaner Technologies Substitutes Assessment: Professional Fabricare Processes Technical Peer Review Panel, USEPA (EPA 744-B-98-001)

1992-00  Director, Health Hazard Evaluation Program, University of Illinois School of Public Health and Illinois Dept. of Public Health

1990-9  Director, Research & Interdisciplinary Projects, Great Lakes Center for Occupational and Environmental Health and Safety, University of Illinois School of Public Health

1993-9  Medical Director, Corporate Health Services, Northwest Community Healthcare  1990-9  Internal Medicine, U. of I. Hospital & Medical Center (attending)

1993-6  Associate Professor of Medicine, University of Illinois at Chicago School of Medicine

1983-97  Internal Medicine, Mercy Hospital & Medical Center (consultant)

1984-93  Medical Director, Managed Care Occupational Health Program,

1982-95  Attending Physician Dept. Of Internal Medicine Mt Sinai Hospital, Chicago, Illinois

1980-86  Medical Officer, Region V, Nat'l Institute For Occupational Safety & Health, U.S.PHS,

1980-88  Attending Physician, Division of General Medicine, Cook County Hospital  1979-80  Medical Director, Southeast Health Plan, Chicago, Illinois

Attending Physician, Div. of Emergency Medicine, Cook Cty Hospital  1972-75 Research
Assist, Div. of Emergency Medical Svcs, IL Dept. of Health 1971-72 Nurse Technician, Trauma Unit, Cook County Hospital, Chicago, IL 1970 Administrative Intern, Hill Health Center, New Haven, Connecticut 1967-68 Research Assist to Dr. J. Hobson, Harvard Med School, Boston, MA

1966-67 Research Assist to Dr. David T. Denhardt, Harvard U, Cambridge, MA

**PAST APPOINTED OR ELECTED POSITIONS**

2012-16 Consultant, Health Care Division, SEIU

2005-9 Immediate Past President, Stroger Hospital Medical Staff

2001-6 Member, Technical Committee on Epidemiology and Air Quality Monitoring (TCEAQ), Department of Health, Republic of South Africa

2003-6 President, Wood Street Branch, Chicago Medical Society, AMA 2001-5 President, Medical Staff, Cook County Hospital

2004-6 Member, State of Illinois Panel on Health of Hispanic Workers

1992-05 Global Health Task Force Occupational Health Advisory Com. American Medical Student Association

2002-7 Chair, Public Health Committee, Chicago Medical Society 2004-6 Board Member, Physicians for Responsible Negotiations, SEIU

1997-03 Member, Government Affairs Committee, IL State Medical Society 1993-01 Internal Medicine, Northwest Community Hospital (consultant) 2000-1 President, Wood Street Branch, Chicago Medical Society

1999-01 Secretary, Medical Staff, Cook County Hospital 1998-9 Vice President, Medical Staff, Cook County Hospital

1998-0 Scientific Committee, World Federation of Public Health Association’s 9th International Congress, Beijing, China

1997-8 Chair, Ad Hoc Committee on Physician Unionization, Chicago Medical Society 1995-8 Clinical Advisory Committee, Del Amo Occupational Health Clinic, U of California,
Irvine

1996-7 President, Wood Street Branch, Chicago Medical Society 1987-97 Executive Medical Staff, Cook County Hospital


1993-5 Task Force on Environmental Health, University of Toronto

1995 Advisor, Office of Global & Integrated Environmental Health, WHO  Geneva, Switzerland

1994 Advisor, Occupational Health Program, WHO, Moscow, Russian Republic

1994 Occupational Medical Advisor, Health & Safety Com., Local 974, United Automobile Workers Union, AFL-CIO, Peoria, Illinois


1990-1 Consultant, SOYUZMEDINFORM, Ministry of Health, USSR

1989 Consultant, United Steelworkers of America, AFL-CIO, Local 1010,


1987-8 Consultant, United Association of Journeymen & Apprentices of the Plumbing & Pipe Fitting Industry of the U S and Canada, AFL & CIO

1986-9 Executive Board, Nat'l Union of Hospital & Health Care Employees/1199, AFL-CIO

1986-8 Governing Council, American Public Health Association
1986-7  Consultant, Local 75, United Assoc of Journeymen & Apprentices of the Plumbing & Pipe Fitting Industry of US & Canada AFL/CIO
1985-7  Advisory Committee, Health Policy Agenda for the American People for the APHA
1985-8  Advisory Committee, Hospital Occupational Safety and Health Program, American Hospital Association
1984-5  Chairman, Program Committee, Occupational Health Section, APHA  1984-7 Research Committee, Dept. of Medicine, Cook County Hospital  1982-4  Action Board, American Public Health Association
1982-4  Joint Policy Committee, American Public Health Association,  1979-82 Program Committee, Medical Care Section, APHA
1978-86 Occupational Health Committee, Cook County Hospital  1978-80 Resolutions Committee, Illinois Public Health Association  1977-80 Com. on Nat'l Health Proposals, Med Care Sect, APHA
1976-9  Chairman, National Health Insurance/Service Com, The Physicians Nat'l House Staff Association
1975-9  Executive Medical Staff, Cook County Hospital
1972-5  Founding member, Chicago Area Cttee on Occupational Safety and Health

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Peer Reviewed Journal Papers:

1. Kaplan, S. Ai, N. Orris, P. Sriraj, P.S. Green Commuting in the Health Care Sector Obstacles and Best Practices JOEM Volume 58, Number 2, February 2016 e34-8


8. Evans, V, Orris P. The Use of Alcohol-Based Hand Sanitizers by Pregnant Health Care Workers (Letter) JOEM, Volume 54, Number 1, January 2012


15. Pye, H., Orris, P. Workers Compensation in the United States and the Role of the Primary Care Physician, Primary Care: Clinics in Office Practice 2000 December; 27(4): 831-844


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PCDF, and TCDD Exposure Following a Transformer Fire: Chicago, Chemosphere. 1986; 15 (9-12): 1297-1303


Other Refereed Material:


8. Orris, P. Fifty Years of Hope and Concern for the Future Of Occupational Medicine (letter), JOEM, 46:6, June 004, P. 515


11. Obafemi, A. Orris, P. Lead Toxicokinetics and Treatment, Proceedings International Seminar on Environmental and Occupational Lead Intoxication, Havana, Cuba, May,


15. Orris, P. Asbestos (Letter), Scientific American, Sept. 1997,

16. Orris, P., Book Review: Healing the Masses: Cuban Health Politics at Home and Abroad, Jr of Pub Hlth Pol, 1996; 17(2), 244-6

17. Orris, P. Controversy Over Chlorine: A Proposal by Peter Orris, New Solutions,1993; 4(1), 3- 4


Books, Book Chapters, and Monographs:


3. Buchanan, S. Burt, E. Orris, P. Health Effects of Coal Energy Generation in Shin, D-

   v. Kaplan, S, Orris, P., Machi, R. A Research Agenda for Advancing Patient, Worker and Environmental Health and Safety in the Health Care Sector Health Care Research Collaborative Monograph Series, November 2009, Chicago, IL


9. Mulloy, K, Orris, P., August, J. (Ed) Health and Safety of Municipal Employees, State of the Art Reviews in Occupational Medicine, Jan, 2001, 16:1,


**Governmental Reports:**


4. Orris, P., Buchanan, S. Smiley, A., Davis, D., Dinges, D., Bergoffen, G. *Literature Review on Health and Fatigue*

5. Issues Associated with Commercial Motor Vehicle Driver Hours of Work, Synthesis 9, Commercial Truck And Bus Safety Synthesis Program, Transportation Research
Board, National Academy of Sciences – National Research Council, for the Federal Motor Carrier Safety Administration, May 05

6. Health Professionals Task Force (Orris, P. Co-Chair), Great Lakes Fish Consumption Advisories: The Public Health Benefits and Risks, International Joint Commission (US – Canadian treaty organization) Jan 2004


Illinois Health Hazard Evaluation Reports published by the Illinois Health Hazard Evaluation Program, a joint Project of the University of Illinois School of Public Health and the Illinois Department of Public Health


NIOSH Health Hazard Evaluation Reports published by the Hazard Evaluation and Technical Assistance Branch, National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, Cincinnati, Ohio


8. Daniels, W., Orris, P. Health Hazard Report 84-075-1634, Evaluation of Suspected Health Effects of Synthetic Coolants and additives Used In Metal Machining Operations, November, 1985


10. Daniels, W., Orris, P. Health Hazard Report 84-046-1584, Health Effects of Ethylene Oxide and Trace anesthetic Gases In The Operating Rooms of A Public Hosp, April, 1985.


20. Daniels, W., Orris, P., Pryor, P. Health Hazard Report 81-064-1035, Polychlorinated Biphenyl Exposure to Electrical Workers in a Steel Mill, January 1982


26. Orris, P., Daniels, W., Health Hazard Report 80-201-816 Effects of 1,1,1,
Trichloroethane on Spray Can Assembly Employees, Feb. 1980,

Non-Refereed Materials:


8. Orris, P., Higgins, P. Environmental Health Evaluation of the Plum Grove Junior High School, Northwest Community Hospital, Arlington Heights, IL, August,
1994


**Invited Lectures/Accepted Abstracts:**

Orris P Hypersensitivity Issues in Occupational Medicine, Central States Environmental and Occupational Medical Association Seminar, March 7, 2019 Lisle IL

Orris P Hypersensitivity Issues in Occupational Exposures, American College of Medical Toxicology Scientific Symposium, Oct. 28, 2018 Chicago, IL

Orris, P Lectures on Coal Dust, Mercury, and environmental health to National Environmental Activist Meeting of the Community Monitoring Network, 2018, Bilaspur, Chhattisgarh, India

Orris P. Climate Change and Health, Hospitalist Grand Rounds, Rush University Medical Center, Chicago October, 2018

Orris P. Climate Change Catastrophic Weather and Human Health, 5th Annual Climate Change Conference Loyola University Chicago, September, 2018

Orris P. Greening of Health Care, Research and Training Centre for Community Development, Hanoi, Vietnam August 23, 2017

Orris P. Climate Change and Health, Escuela Nacional de Salud Pública Cuba, April, 2017


Orris P. The Economics of Hospital Sustainability Interventions, Korean Global Green and
Healthy Hospital Network national meeting, Yonsei University, Seoul, Korea

Orris, P. Community Environmental Epidemiology & Public Policy, Northwestern University
Public Health Institute, Oct. 20, 2016

Orris, P. Community Environmental Epidemiology & Public Policy, Center for Technology and
Policy, Indian Institute for Technology – Madras and National Epidemiology Institute,
Chennai, IN September 12 + 13, 2016

Orris, P. Visiting Scholar, St. Bonaventure University, New York October, 2015

Environmental Impacts in the Healthcare Sector: An Exploratory Study. In
Transportation Research Board 94th Annual Meeting (No. 15-6057).

Orris, P. Health Care Impacts of Sustainable Development, Keynote Address, South African
Public Health Association, October 8, 2015.

Orris, P. Coal, Energy and Health and Community Based Environmental Epidemiology Studies,
CHESS Network, Bengaluru, India February 13, 2015

Orris, P. Health Effects of Coal Energy Generation, Presented, 14th World Congress on Public
Health, Kolkata India,
February 10 & 12, 2015

Ning Ai, Susan Kaplan, Peter Orris, and P. S. Sriraj. “Reducing Commuting-Related
Environmental Impacts in the Healthcare Sector: An Exploratory Study.” Transportation
15-6057.

Orris, P. Health and Energy Generation, Korean Federation for Environmental Movement,
National Library, Seoul, Korea, November 5, 2014

Orris, P. Health Effects of Coal Energy Generation, Round Table Discussions, Beijing and
Delhi May & Sept. 2014

Orris, P. Social Determinants of Health, Second International Conference, Medical Education

Orris, P. Public Health in the US 2014, National Seminar Cuban Public Health Association,
Havana, Cuba Oct 1, 2014


Orris, P. Health Effects of Coal Energy Generation, Round Table Discussions, Beijing and Delhi May & Sept. 2014


Orris, P. Infectious Disease and Climate Change, 1st Annual Conference on Infectious Diseases in the Mekong Subregion, Kunming, China, October 3, 2013

Orris, P. Health and Safety in the Tourist Industry, Cuba Salud 2012, December 5, 2012 Havana Cuba


Orris, P. The Global Green and Healthy Hospitals Agenda – opportunities for healthcare settings in Australia, Policy Think Tank, Canberra University & Australian Hospital and Healthcare Association, August 22, 2012, Sydney, Australia,


Orris, P. Greening Health Care: A Status Report, 13th World Congress on Public Health, April 24, 2012 Addis Ababa, Ethiopia Priority Chemicals in Children’s Products That Pose a Threat to Childrens Health,


Orris, P. Accuracy of Non Mercury Alternatives in Health Care, Dental Amalgams, at Asia Regional Conference on Mercury-Free Health Care, Mar 15-16, 2011, Manila Philippines

Orris, P. Sustainable Health Care 2010, KeyNote International Conference on Sustainable Health Care, Taipei

Orris, P. Mercury Toxicity, and Alternatives to Mercury in Health Care at 4 Regional Hospital Conferences sponsored by UNDP, GEF, WHO, Latvian Ministries of Health and Environment, Latvia, September 6 – 9, 2010

Orris, P. Occupational Health of Hotel Housekeepers, Keynote Address at the III Congreso Internacional de Salud y Trabajo, Havana, Cuba 2010

Orris, P. Environmental Health and Human Rights, Department of Preventive Medicine, Yonsei University, October 17, 2008, Seoul, South Korea

Orris, P. Environmental Health and Human Rights, Scientific Session, World Medical Association General Assembly, October 16, 2008, Seoul, South Korea

Orris, P., Papéis e responsabilidades do setor de atenção à saúde na proteção à saúde ambiental, I Seminário Estadual Hospitais Saudáveis, Faculdade de Saúde Pública da Universidade de São Paulo, Sept. 12, 2008, Sao Paulo, Brazil

Orris, P. El mercurio, y su impacto a la salud y medio ambiente, Conferencia Internacional sobre Substitucion y Reducccion delUso de Mercurio en Hospitales, Hospital Infantil de Mexico, Federico Gomez, Mexico, D.F., June 30-July 1, 2008

Orris, P. Chemical Pollution and Health Impacts, Medical Waste & POPs Production, Mercury, Lead & Cadmium: Threat to Human Health, 2007 China NGO’s Skillshare on Chemical Safety. Oct. 16-19, 2007, Beijing, China

Orris, P. Mercury Toxicity and Health Care Use, World Medical Association, General Assembly, Copenhagen, Denmark, October 4, 2007

Orris, P. Occupational Medicine Residency Training in the US: UIC/CCH Experience, 3rd Postgraduate Conference

On Occupational Health, Cartagena, Colombia, May 27-8, 2007

Orris, P Neurotoxicity and Safer Substitution of Mercury in Health Care, II Congreso Salud Del
Trabajo,
Havana, Cuba, March, 2007

Jayshil Patel MD, Hemant Chatrath MD, Diana Gomez MD, Bilue Thomas MD, Peter Clarke MD, Peter Orris MD Lead Neurotoxicity, American College of Physicians, Poster, 2007


Orris, Peter, DDT-Malaira: When a Debate is not a Debate, 11th World Congress on Public Health/8th Brazilian Congress on Collective Health, August 23. 2006, Rio de Janeiro, Brazil

Eric Frumin, MA, Joan Moriarty, MS, Pamela Vossenas, MPH, John Halpin, MD, MPH, Peter Orris, MD, MPH, Niklas Krause, MD, PhD, MPH Laura Punnett, Sc.D., Workload-Related Musculoskeletal Disorders among Hotel Housekeepers: Employer Records Reveal a Growing National Problem, Presented to the NIOSH national NORA symposium, April, 2006

Orris, P Ethics of Occupational Medical Practice, Institute of Occupational Medicine, Ukranian Academy of Sciences, Kiev, Dec. 9, 2003


Orris, P Toxicity of Medical Waste, for Kerala State Pollution Control Board, Thiruvananthapuram, India, February 21 &22, 2003 to: State Level Meeting for Heads of Offices & Staff of Head Office, Senior Doctors and Officers under DME and DHS

Orris, P Medical Waste Management, Sree Chitra Trunal Institute for Medical Sciences and Technology, Thiruvananthapuram, India, February 21, 2003

Orris, P Hospitals and the Environment: Global Trends, Plenary, Philippine Hospital Association, Manila, November 28, 2002

Orris P. Toxicity of Medical Waste, National Seminar, Philippine Department of Health, Nov. 28, 2002
Orris, P. Toxicity of Medical Waste and Non Incineration Alternatives For Disposal, Private Hospitals Association of the Philippines, Manila, November 27, 2002

Orris, P. Toxicity of Polychlorinated Biphenyls, Dioxins, and Related Compounds, Grand Rounds, New Liskeard and Kirkland Lake Medical and Nursing Staffs, Ontario Canada, 2002

Orris, P. Seminario El Hospital Ambientalmente Saludable, Direccion General De Salude Ambiental, Federal Government, Mexico City, DF 2002

Orris, P. Toxicity of Medical Waste, Delegates Technical Briefing, World Health Assembly, Geneva Switzerland,


Orris, P. Medical Waste: Dioxins and Health Effects, 9th International Congress, World Federation of Public Health Associations, Beijing China, Sept. 4, 2000

Orris, P. Medical Waste Toxicity, Dept. of Anesthesiology, Peking University Medical College, Beijing China

Orris, P. Medical Waste Toxicity, Universidad De Ciencias Empresariales Y Sociales, Buenos Aires, Argentina


Orris, P. Occupational Health and Managed Care, American Pub Health Association, Oct. 30, 1995, San Diego, CA

Effects of the Working Conditions of Package Truck Drivers, New Epidemics in Occupational Medicine
Conf, WHO, Helsinki, Finland, May, 1994


Owi, E., Orris, P. An Initial Look at a Group of Patients with Reversible Bronchospasm, a poster at the XXIII International Cong On Occupational Health, Sept. 1990, Montreal, Canada.


Hryhorczuk, D., Orris, P., Burton, W., Melius, J., Kominsky, J.R., Exposure to Polychlorinated Dibenzofurans From A PCB Transformer Fire, at the 5th International Symposium on Chlorinated Dioxins and Related Compounds, Sept. 17, 1985, Germany

Orris, P., Matticks, R. X-ray and Pulmonary Function Alterations in Patients with Simple Silicosis: A Case Series, presented at the 2nd International Research Colloquium on Occupational Health:
Pulmonary Disease, March 20, 1984

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Saxena, K., Johnson, P., Hryhorczuk, D., and Orris, P. Initial Medical Management of a Mini-Disaster with a Transformer Fire Emitting PCBs. 3rd World Congress on Emergency and Disaster Medicine, Rome, Italy, May 25, 1983

Orris, P. Hryhorczuk, D. Diagnosis of TCDD Intoxication. APHA, Occupational Health Section Midwest Regional Meeting, June, 2, 1983

Orris, P. Socioeconomic Determinants of Adult Disease. National Medical Association Convention, August 1, 1983

Hogan, M.M., Smith, R.F., Orris, P., The Integration of Occupational Medical Services Within The Internal Medicine Department of A Tertiary Care Public Hospital. American Public Health Association Convention, Dallas, Texas, November 14, 1983

Orris, P. The Cook County Hospital Occupational Medicine Clinic NIOSH Conference on Occupational Health and Safety of Minority Workers, July 8, 1981


Orris, P. Occupational Medicine in a Public General Hospital. APHA Convention, October, 1979

Kientz, R., Orris, P. The Economic Feasibility of a National Health Service. American Public Health Assoc Conv, October, 1976


**Testimony and Briefings for Government or Elected Officials:**

2012 Meetings with President’s Council on Environmental Quality and leadership of the Department of Homeland Security on Industrial Chemical Safety

2011 Chicago City Council Aldermanic Hearing on Clean Air and Coal Power 2009 The Bisphenol A Kids Free Ordinance Chicago City Council Joint Com 2009 DDT Toxicity and Malaria, US Senate

2005 Medical Waste Toxicity: Status of Knowledge of Dioxins and Mercury United Nations Development Program/Global Environmental Facility

Health Care Waste Project, PDFB Inception Meeting, Dakar, Senegal 2003 Briefing, US Congress, Chemical Security

2000 Briefing, US Congress, Great Lakes Congressional Staff, *POPS and the Great Lakes Issues for the POPS Negotiations*