

**Testimony to ACE/DOE scoping hearing on Millenium coal terminal project, Vancouver, WA,
10/9/13**

My name is Martha Neuringer and my address is 4140 SE 37th Ave, Apt 9, Portland, OR 97202.

I'm a neuroscientist and biomedical researcher at Oregon Health & Science University, and for 40 years I have studied nutritional and environmental effects on eye and brain development and aging. Among the many serious health effects of the coal dust and coal emissions that must be addressed in your review of this project, I would like to address just one very specific issue: the effects of coal-derived mercury on infant brain development.

My studies were the first to demonstrate beneficial effects of omega-3 fatty acids on eye and brain development, and this work led to the addition of these important nutrients to infant formula worldwide. The richest source of these nutrients is of course fish – one of the greatest bounties of our region. It is a cruel and bitter irony that this otherwise healthy food source is now contaminated with multiple toxins, to the extent that intake of fish by pregnant woman and children needs to be limited. Coal is a major source of most of these toxins – including mercury, lead, arsenic, and chromium. Health advisories recommending limited consumption of Columbia River fish have been in place since at least 1996, but just last month the Washington and Oregon Health departments issued a new advisory citing elevated levels of mercury in several fish species around Bonneville Dam and throughout the middle Columbia. I will focus just on coal-derived mercury, because three-quarters of environmental mercury is derived from coal, and it is one of the most powerful neurotoxins known.

Coal-derived mercury has significant negative impacts on the visual system, on motor development, and on cognitive development. It insidiously limits human potential. A massive increase in coal traffic through our region would greatly increase the mercury burden in our environment and therefore the damage to our region's infants and children. This is a compelling moral issue, but it can also be reduced to its economic impacts. The effects of coal-derived mercury on reduced intellectual development – on only this one health effect, among many – are estimated to cost 3 billion dollars per year in the U.S.¹ This is just one part of the overall health costs of \$10-30 billion, which in turn is just part of the estimated total externalities – environmental, economic and health effects of coal – which total half a trillion dollars per year. Coal export projects would have a reverberating impact in our region, as coal dust increases mercury and many other toxins in our air and our water; and then, when it is burned in China, as the prevailing winds bring air-borne toxins back to us. Already nearly 20% of the mercury in Oregon is due to coal-burning in east Asia.

With the enormous stakes for the health of our citizens, and especially our children, it would be a dereliction of responsibility if your review fails to include a full Health Impact Assessment. Furthermore I respectfully protest the Army Corps of Engineers refusal to conduct an area-wide, comprehensive, cumulative, programmatic Environmental Impact Assessment of the three proposed coal export projects in the Northwest. The health of our communities is in the balance.

¹ Epstein PR et al. Full cost accounting for the life cycle of coal. *Annals of the New York Academy of Sciences*, vol 1219, pp 73-98, 2011.