

# New OSU scholar tracks pollution

By Bennett Hall  
Corvallis Gazette-Times

CORVALLIS (AP) — Perry Hystad has been at Oregon State University for only a little over a year, but the young epidemiologist is already making a name for himself.

This fall the 33-year-old Hystad was selected as one of 17 winners of an Early Independence Award by the National Institutes of Health, becoming the first OSU researcher to win the honor since it was established in 2011. In addition to conferring a healthy measure of prestige, the award also comes with a substantial infusion of research funding: \$250,000 a year for up to five years.

“When I first heard about this study, I thought, ‘This can’t be real — it’s too big and the data is too detailed.’ — Perry Hystad

Hystad will use the money to investigate the global health impacts of air pollution, which kills an estimated 3.2 million people a year.

“When people first look at this they say, ‘This can’t be real — the numbers are too high,’ he said. “But that’s because this is something everybody is exposed to.”

While the health effects of air pollution have been reduced in many developed countries such as the United States, Hystad’s research will provide some of the first hard data on pollution impacts in rapidly developing economies such as India and China.

He’ll do that by joining

the Prospective Urban and Rural Epidemiology Study. Launched in 2009 by a pair of researchers at McMaster University in Ontario, Canada, the PURE Study is the largest project of its kind in the world, with some 200,000 participants in 21 countries.

Each person enrolled in the study fills out a detailed questionnaire and undergoes a medical examination. Participants represent a cross-section of urban and rural residents of varying income levels from places as diverse as Canada and Colombia, Bangladesh and Brazil, Sweden and Zimbabwe.

Individual health information is correlated with community- and national-level data, and participants will be tracked over a 12-year period to see how social, environmental and biological risk factors contribute to chronic health conditions such as cardiovascular disease, diabetes and cancer.

Hystad, a native of Canada (he’s applying for a green card and still says things like “I’ve been working around the hoose”), learned about PURE while doing postgraduate work in epidemiology at the University of British Columbia and decided he wanted to get involved.

“When I first heard about this study, I thought, ‘This can’t be real — it’s too big and the data is too detailed,’” Hystad recalled. “It’s just this really big collaboration between lots of researchers.”

Hystad’s NIH funding will help pay for things like pollution monitoring equipment and research assistants. He’ll be looking at how both outdoor air pollution (from vehicle exhaust and industrial emissions) and indoor air pollution (from cooking and heating with coal, wood and other dirty fuels) contribute

to serious health conditions among the study participants, such as heart attack, stroke, congestive heart failure and chronic obstructive pulmonary disease.

While the data will come from a variety of settings around the globe, Hystad is particularly interested in what can be learned about conditions in places where economic development may be outpacing both environmental regulation and reliable scientific information.

“We’re going to be able to look at disease impacts related to really high levels of air pollution in India and China,” he said. “If you look at the contributors to the global burden of disease, those two are right at the top.”

However, Hystad cautions against viewing these countries as environmental villains, noting that many factories in China and India burn coal imported from Western countries to make products destined for Western consumers. He’s hoping insights gleaned from his work will enable policymakers all over the world to develop new and more effective responses to air pollution.

“It’s really a global issue, and this is going to be the first study that’s going to look at the impacts of air pollution on a global basis. — Perry Hystad

“We can’t be looking at it on a region-by-region basis,” he said. “It’s really a global issue, and this is going to be the first study that’s going to look at the impacts of air pollution on a global basis.”

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