Half UCI chemist team famous, the other isn’t

By PAT BRENNIAN
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Sherry Rowland stands 6 feet 5 inches tall, an imposing figure on the campus where she teaches chemical engineering.

The discovery that Mexico City’s smog is largely caused by gasoline, not oil, is one Rowland shares with Don Blake, a student at the University of California, Irvine, department of earth system science.

"It happened all the time," he said. "There is a tendency to associate this kind of problem with the person who is solely responsible.

Rowland, 66, earned international recognition as another scientist predicted, in 1974, that the pollution from gasoline in aerosol cans could damage the Earth’s ozone layer, which shields the planet from harmful ultraviolet rays.

A few years later, British researchers discovered a gaping hole in the ozone shield over Antarctica. Thinning of ozone over North America and other continents has been observed as well.

For two decades, Rowland and Blake, 63, have gathered a mountain of information about the mix of gases over cities throughout the world. Their data have been used by other scientists worldwide to create computer models of the Earth’s climate in the hopes of finding its secrets — perhaps one day finding answers to such vexing questions as whether human pollution is heating the planet.

Researchers working under Rowland’s and Blake’s direction at the U.S. National Aeronautics and Space Administration’s Air Resources Laboratories play a key role in this work.

The Mexico City findings may have implications for other cities in Central and South America, Europe and almost every continent, where gases such as propane are used for cooking and heating water.

The findings also have importance for adjusting the balance of gases in some regional computer models, although that is so uncertain, Blake said.

In the United States, natural gas is a major contributor to the problem of air pollution.

And Rowland and Blake’s measurements of Mexico City’s smog, 800 miles from the U.S. border, show that there is still some difficulty in getting the result.

For this reason, even as the Mexico City findings are being announced, UCI researchers are looking for evidence of gasoline, not oil, in the air pollution.

"There are a whole lot of atmospheric chemistry problems that need to be solved," said Rowland, who officially retired last year but remains deeply involved in the research work he started.

Blake, 63, said he has learned a lot about the importance of pollution in the past few years.

"It probably has local significance on a global basis," he said. "It’s a local significance in almost all countries."

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