September 17, 2007: Congratulating Scientists for their work in Atmospheric Chemistry

The Honorable Loretta Sanchez

CONGRATULATING SCIENTISTS F. SHERWOOD ROWLAND, MARIO MOLINA, AND PAUL CRUTZEN FOR THEIR WORK IN ATMOSPHERIC CHEMISTRY

September 17, 2007

I am the proud sponsor of H. Res. 593, a resolution congratulating the scientists whose work led to the Montreal Protocol on Substances that Deplete the Ozone Layer.

The Montreal Protocol is an international treaty that has been a critical part of the global commitment to improving the environment for ourselves and future generations. The treaty was a science driven effort to address a specific human action that has real consequences on the ozone layer.

Yesterday, September 16th was the 20th anniversary of when the Montreal Protocol was first made available for signature. Although the benefits of the Montreal Protocol are being realized worldwide, the science that led to its implementation is entirely homegrown.

In 1973, scientists Sherwood Rowland and Mario Molina began their work at the fantastic University of California, Irvine, in Orange County, California. Rowland and Molina researched the depletion of stratospheric ozone by chlorofluorocarbon gases. These CFC gases were used worldwide in many products as refrigerants and aerosol propellants. Like all scientific endeavors, Rowland and Molina started with a hypothesis. They realized that CFCs are very stable compounds in the lower atmosphere. Because of that, the compounds could travel to the upper atmosphere and interact with other compounds that are critical to the upper atmosphere.

By June of 1974 the hypothesis of Rowland and Molina was confirmed by their own research; CFCs are broken down by ultra-violet radiation in the upper atmosphere and then interact with and deplete ozone molecules. Their work was published in the scientific journal Nature to a mixed reaction because CFCs were considered by many to be a wonder product that had many benefits and no negative consequences. However, a mixed reaction to a published article is not necessarily a bad thing since it is necessary for published scientific work to hold up under intense peer review and scrutiny.

The National Academy of Sciences began testing the work of Rowland and Molina and by 1976, the Academy released a report that confirmed the scientific credibility of the ozone depletion hypothesis. To the credit of this institution, Congress acted quickly in response to the confirmed work of Rowland and Molina.

In 1978 the use of CFCs in aerosol propellants was banned in the United States. With the United States leading the way

and significant studies being conducted by the Dutch scientist Paul Crutzen, the Montreal Protocol came into full force on September 17, 1987. To date, 191 nations have signed on to the Montreal Protocol.

In 1995, Rowland, Molina, and Crutzen were awarded the Nobel Prize for chemistry in recognition of their work--this was quite an achievement for UC Irvine as well. On the twentieth anniversary of the Montreal Protocol, let's once again recognize the homegrown science of Sherwood Rowland, Mario Molina, and Paul Crutzen that has had an ongoing and significant positive impact on the Earth's ecosystem.

I urge my colleagues to join me in supporting H. Res. 593.