

## Researcher and Educator Long Term Collaboration with NOAA Earth System Research Laboratory Regarding Atmospheric Ozone Changes at the South Pole through the NSF PolarTREC Program

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The NOAA ESRL team at South Pole has been monitoring the development of the annual ozone hole for over two decades using balloon-borne and ground-based instruments. Collaboration with educators has become an important aspect of NOAA ESRL to educate the public about ozone loss and ozone hole formation. Researcher Bryan Johnson and educator Elke Bergholz worked together at the South Pole in 1998/1999 as part of the NSF teacher outreach program called Teachers Experiencing Antarctica (TEA). It has been almost a decade when they collaborated again concerning the ozone changes at South Pole as part of the International Polar Year (IPY) and the PolarTREC (<http://www.polarrec.com>) teacher outreach program sponsored by NSF. The TEA and PolarTREC programs selected teachers to travel to polar locations to work with research scientists collecting data and running experiments at various Arctic and Antarctic field sites. While in the field, daily contact with classrooms and students around the globe was done through internet journals, answering emails from students, and webinars. This will be followed up with presentations to schools and the public relating Ms Bergholz's experience and new "hands-on" understanding of ozone measurements and ozone depletion over Antarctica, and discussing what changes in ozone we have seen at South Pole since the first outreach program nearly a decade ago.



**Figure 1.** (left) South Pole ozonesonde launch during PolarTREC in December, 2007. (right) During one of the webinars, participants Amy Cox, Elke Bergholz, Bryan Johnson (shown here), and Dave Hofmann (in U.S.) show slides and answer questions about life and ozone science at the South Pole via internet connection from South Pole station.