Climate Change Truths

 This letter has been prepared by the Nevada County-Climate Change Coalition (NC-CCC) in response to several of the comments that were made on The Union’s editorial page in the last month regarding climate change. One of the most disturbing comments was that the scientists that are working on and supporting climate change research are doing so because of the funding availability and would “conform to the party line or risk defunding”. This is a statement that can neither be proved nor disproved. However, to assume that the thousands of scientists that are working on climate change projects would falsify their data and research to get funding is preposterous. Most of these people could get much more money doing other things. Plus there are many checks and balances in the scientific process which would make it difficult if not impossible to “cheat”. With the future of the world literally at stake we can’t imagine these people would want to misstate the facts.

 Just like the 60 year battle over the hazardous effects of leaded gasoline, those that have the most to benefit from the denial of global warming are those who benefit most from inaction and they are the ones who promulgate erroneous information about climate science. But we don’t have sixty years for push back and the effects of global warming will continue long after we decide to do something about it.

 Dealing specifically with some of the “truths” presented by Bob Hren, the cycles of heating and cooling since 2001 he refers to, that have received so much attention from the news, is completely in line with what is expected by the theory of global warming. While increasing the amount of carbon dioxide in the atmosphere assures our greenhouse effect will trap more heat, this heat will be partitioned between the earth’s atmosphere, land, oceans, and ice. Since 1955, over 90% of the excess heat trapped by greenhouse gasses has been stored in the oceans. The amount of heat that is absorbed at the ocean surface varies a bit due to natural variability in the ocean. Think of this variability like “weather” in the ocean, except because the ocean is a big sluggish fluid, this weather is much slower, occurring over decades and even centuries. Many scientists feel that the most robust indicator of global warming is the change in ocean heat content that we’ve measured over the last 30-40 years, which has been steadily on the rise over this time.

 Recent corrections to how surface temperatures are measured show that there is a steady upward trend in surface temperatures. [Karl et al., 2015]. Regardless of this correction, however, it is important to note that increases or decreases in the rate of warming over decades are completely expected by climate scientists.

 Mr. Hren also refers to “only 75 scientists” who support the climate – warming trends and that they are very likely due to human activities. We absolutely have no idea where he gets the number 75! He has the luxury of not needing to be scientific about his analysis. This statement is blatantly untrue. First of all, the 97% number he purports to contradict isn’t from one study (the oft-cited Oreskes [2004] study) but was independently arrived at by a study considering the standpoints of accepted peer reviewed abstracts since 1991 [Cook et al., 2013].

 Despite the attempts of some to discredit the work and the people behind the huge volume of work showing human caused climate change is real, the facts speak for themselves and we must take action now. The cost of inaction will certainly exceed the cost of changes we need to make. It is also important to plan for a warmer future because no matter how fast we deal with climate change the effects are already upon us.

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