

BOSTON -- "Global warming is one of the biggest, if not *the* biggest, issue of our time," says Professor Jonathan Spencer an expert on global climate change, "yet, few people really understand its causes and consequences." Spencer, who has studied global climate change at Harvard University for the past two decades, is a member of the Intergovernmental Panel on Climate Change (IPCC) that met last week in Boston for its semi-annual meeting.

Spencer is a co-author of a forthcoming pamphlet, called *Understanding Global Warming*, which is aimed at educating the average citizen about global warming. The pamphlet describes the cause of global warming as "excessive and unnatural levels of carbon dioxide that collect to form a 'pollution blanket' that traps the sun's heat in the Earth's atmosphere." Though carbon dioxide is a natural component of the Earth's environment, Spencer points out that the current levels of CO<sup>2</sup> are much higher than what they should be based on historical patterns. Worse yet, the amount of CO<sup>2</sup> continues to rise at an alarming rate.

The IPCC is made up of hundreds of environmental scientists from countries all around the world. Together, they recently delivered their annual report to the United Nations which attested that the rise in CO<sup>2</sup> levels is directly caused by human activity. Specifically, the report claimed that much of the precipitous rise in CO<sup>2</sup> can be traced to the use of coal-burning power plants and gasoline-powered automobiles. Coal-burning power plants, the most common type of power plant in the United States, produces 2.5 billion tons of CO<sup>2</sup> every year in the U.S.. Not far behind, automobiles in the U.S. emit an estimated 1.5 billion tons of CO<sup>2</sup> each year.

The IPCC says many devastating consequences of global warming are possible, some of which we have already begun to feel. In particular, the past decade has seen record breaking heat waves all across the world, including a major heat wave that killed at least 35,000 people in Europe in 2003. Along with heat waves, global warming is also heating up ocean temperatures, which could have a direct impact on the intensity of hurricanes. As ocean temperatures continually rise, it is predicted that the frequency of category 4 and 5 hurricanes will also rise. Furthermore, the rise in global temperatures could also have a significant impact on the number of wildfires occurring across the U.S.. Rising temperatures are believed to lead to increased dryness and drought. According to the IPCC, frequency of wildfires in California, Nevada, and Arizona has already reached record highs and could continue to rise. In addition, possibly the most serious consequence is sea-levels rising. As the earth warms up, the massive sheets of ice that make up the Arctic and Greenland are melting at a dramatic pace. As they melt, the runoff flows into the sea which gradually raises sea levels all around the world. As the seas rise, the IPCC predicts that current coastlines could start to disappear, including much of Florida, California, Texas, and Hawaii.

POSITIVE CONDITION:

However, all that being said, Spencer and the members of the IPCC are optimistic about the future. They believe that global warming is completely reversible, and it is not too late to act. In fact, Caroline Defoe, Professor of Environmental Studies at Yale University and IPCC member, “The solution is simple: ingenuity. Human beings can solve most any problem if they put their minds to it.”

Amanda Liu, member of the IPCC and author of the recent book *How to Fight Global Warming: What Science and Technology Can Do* agrees with Defoe, “A drastic decrease in CO<sup>2</sup> emissions would pretty quickly slow the rise in global temperatures, and in the long-run, would even allow the Earth to return to its normal temperature patterns.” The best way to decrease CO<sup>2</sup> emissions, according to IPCC is to switch from an “oil and coal society” to a “wind, solar, and geothermal society.” Liu adds “Much of the technology we need already exists. We just have to perfect it and find innovative ways to implement it. But I am confident that human ingenuity can overcome this mammoth obstacle.”

#### DIRE CONDITION:

Unfortunately, according to many members of the IPCC, global warming is now at a point where it may be irreversible. “We fear it may be too late. We may have reached the point of no return,” says Caroline DeFoe, Professor of Environmental Studies at Yale University, “I hate to admit it, but all the numbers and computer models point in the same dire and devastating direction. No one knows for sure how horrible it will get, but we should prepare for world wide chaos and destruction.”

Amanda Liu, member of the IPCC and author of the recent book, *Why Science Can't Help*, agrees with Defoe, “The first domino has been pushed over and now the chain reaction is underway and building momentum. Global warming is going to change everything for the worse. It is just too big of a problem for science to grapple with. We don't even know where to start. Everyday we find out that something entirely new and unexpected is either directly or indirectly adding to the problem and causing more and more destruction.”