

# Examining Adult Public Opinion on Climate Change in the United States and China



May 2014

## Students

Elora Leene, Emy Marier, Wes Meives, David Hahn and Helue Vazquez Valverde

## Faculty Mentor

Eric Jamelske

[jamelsem@uwec.edu](mailto:jamelsem@uwec.edu)

University of Wisconsin-Eau Claire  
Economics Department

**Chippewa Valley Center  
for Economic Research and Development**



We gratefully acknowledge generous funding support from the University of Wisconsin-Eau Claire Office of Research & Sponsored Programs, Blugold Commitment, International Fellows Program, Xcel Energy-Eau Claire and Northwestern Bank- Chippewa Falls

## **ABSTRACT**

Climate change is an important and divisive national and international policy issue. The United States and China are of particular interest in the discussion on climate change because they are the world's two largest emitters of greenhouse gases. As such, meaningful global action to address climate change must involve both China and the US. Thus, a better understanding of how US and Chinese citizens view climate change is of great interest.

We conducted surveys of adults and college students in the US and China to broaden our understanding of climate change public opinion in these two countries. This poster presents results from a subset of these data examining views of only adults in these two important countries. College student public opinion on climate change in the US and China is examined in a separate poster.

## **INTRODUCTION**

Despite overwhelming scientific consensus, many Americans misunderstand the realities of climate change and its causes. Moreover, research has revealed significant political divisions over climate change with conservatives more likely to be skeptical

The following quotes from the 2012 presidential race highlight this division.

"More droughts and floods and wildfires are not a joke. My plan will continue to reduce the carbon pollution that is heating our planet because climate change is not a hoax."

-Barack Obama

"Do I think the world's getting hotter? I don't know, I think it is, but I don't know if it's mostly caused by humans. What I'm not willing to do is spend trillions of dollars on something I don't know the answer to."

-Mitt Romney

As a result, the US has not taken a leadership role in recent United Nations Framework Convention on Climate Change meetings and President Obama has yet to denounce the Keystone XL Pipeline despite NASA scientist Dr. James Hansen's claims that the pipeline would be "game over" for the climate.

The reality is that politics, special interests and a misunderstanding of climate science are preventing action to address climate change in the US. Moreover, the lack of leadership and accountability by the US in international negotiations has limited the willingness of China to join international actions to address climate change.

The following quotes from Chinese government officials suggest no such political debate regarding the reality and seriousness of climate change.

“Climate change is a grave challenge to the sustainable development of the human society...the Chinese government is determined to address climate change in the process of pursuing sustainable development.”

“Developed countries must take responsibility for their historical cumulative emissions and current high per capita emissions to change their unsustainable way of life and to substantially reduce their emissions and provide financial support and transfer technology to developing countries.”

The preceding descriptions set the stage for comparing public opinion on climate change in the US and China. We now describe our methods and then present results from our survey of adults in the US and China.

## METHOD

We conducted face-to-face surveys of Chinese adults in four cities (Beijing, Chengdu, Guangzhou and Xian) between September and November 2013. This was a partnership between American and Chinese researchers. The China sample consists of 2,047 adults age 25 and over with approximately equal representation across the four cities.

Because the surveys were done face-to-face we do not know the total number of people who were offered the survey, and thus cannot calculate an overall response rate. However, our best estimate is that approximately 40% of individuals that were asked to take the survey did so. The average age in the Chinese sample was 39.0 years old. In terms of gender and race/ethnicity, 56.4% of respondents were male and 43.6% were female, while 93.8% identified as Han majority.

We also conducted online surveys of US adults in four states (CA, NE, RI and WI) over the same period. The US sample consists of 1,306 adults age 25 and over with approximately equal representation across the four states. US adult survey respondents were recruited through two methods. First, a postcard mailing to 12,000 random addresses purchased from Survey Sampling International (3,000 in each state).

Second, a newspaper article was run in one relatively large metropolitan area in each state announcing the survey and asking people to participate. The estimated response rate from these combined processes was approximately 7%. The average age in the US sample was 49.7 years old.

In terms of gender and race/ethnicity, 53.2% of respondents were male and 46.8% were female, while 87.7% of respondents identified as white. No other racial/ethnic group had more than 4% representation in the sample. All potential adult participants were offered the chance to be entered in a drawing to win one of three \$50 Visa gift cards as an incentive to participate.

Neither the US or China samples are scientifically random, but the Chinese response rate of approximately 40% gives us some confidence that respondents are somewhat representative of the general urban populations in China. However, the low response rate of approximately 7% in the US

raises the issue of potential bias. Overall, our results may not generalize to adult populations in both countries, especially in the US. That said, this information provides valuable insights in understanding how US and Chinese citizens view climate change.

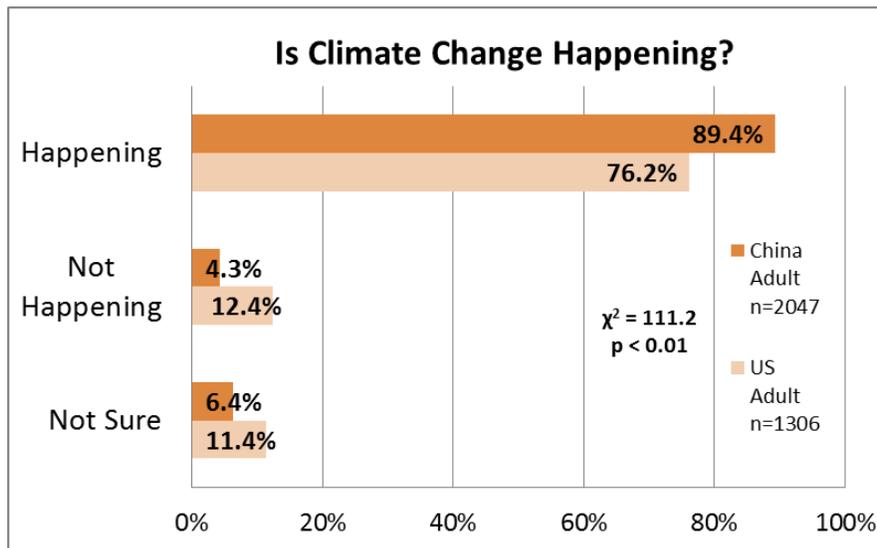
All survey materials and procedures were approved by the University of Wisconsin-Eau Claire Institutional Review Board. Many of the questions used for this survey were adapted with permission from surveys conducted by the Yale Project on Climate Change and the George Mason University Center for Climate Change Communication.

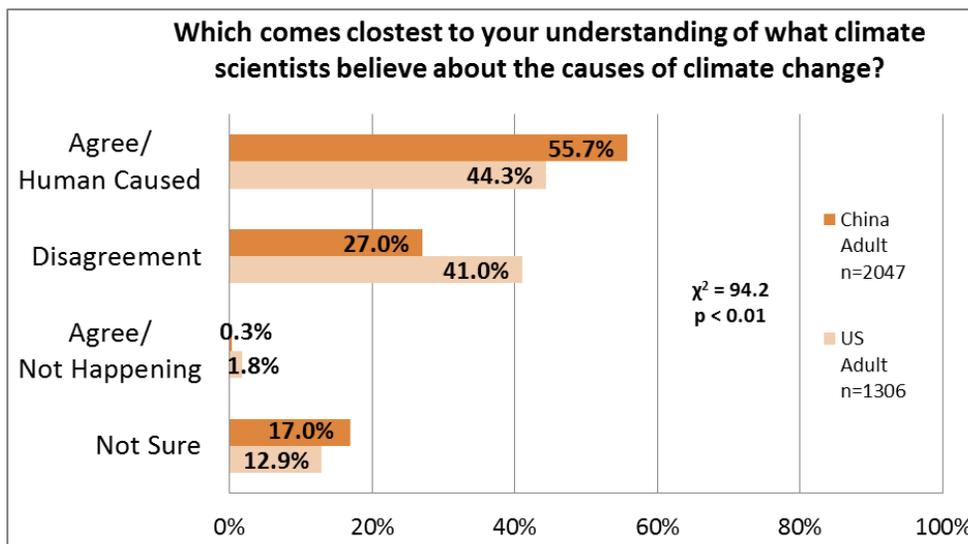
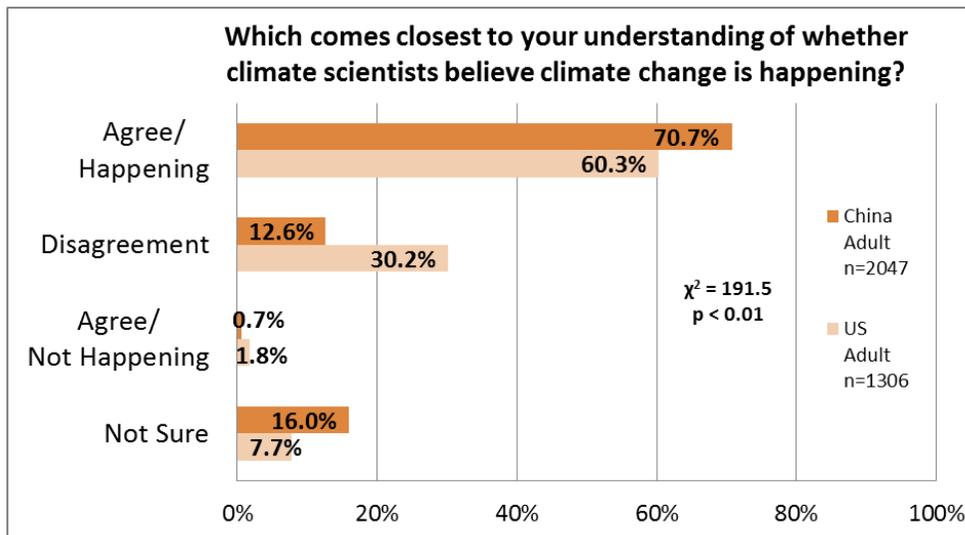
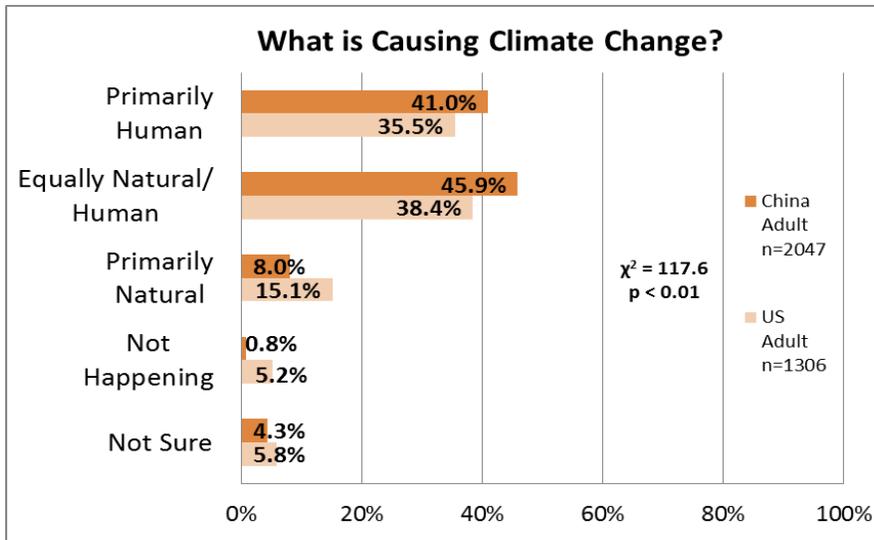
## RESULTS

### Is it Happening

Just over 76% of US adults say they believe climate change is happening compared to 89.4% of Chinese adults. US respondents are also less likely than their counterparts in China to attribute the causes of climate change to human actions.

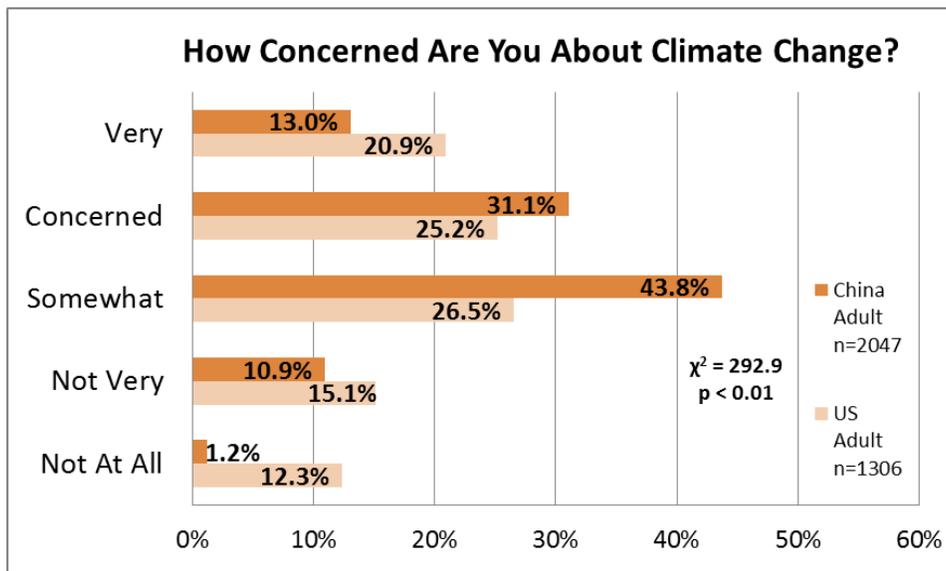
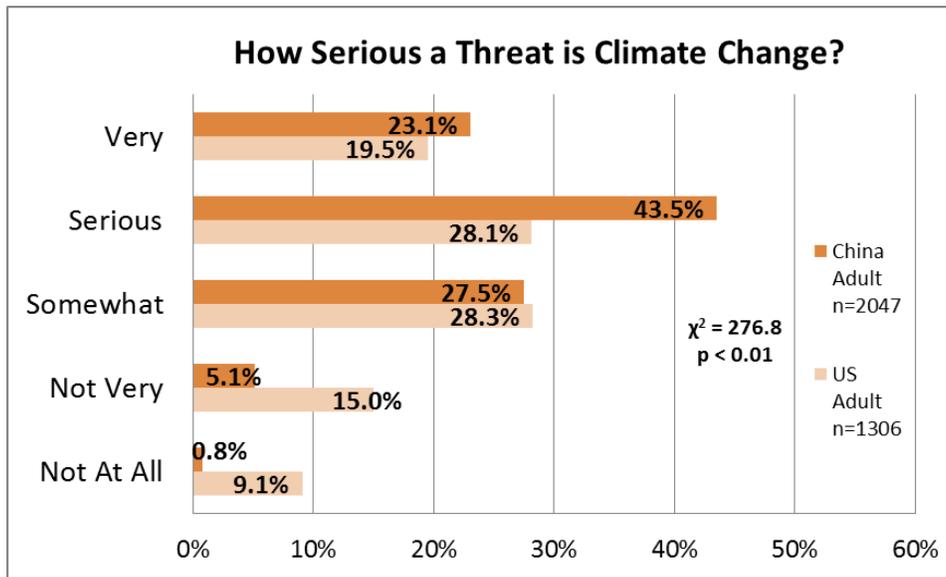
US respondents also show a greater misunderstanding of the scientific consensus on climate change and its causes. Specifically, more US adults think there is disagreement among climate scientists about whether climate change is happening (30.2% > 12.6%) and if human actions are the primary cause (41.0% > 27.0%).





## Threat and Concern

American adults are also less likely than Chinese adults (47.6% < 66.6%) to perceive climate change as a serious or very serious threat to humans. Interestingly, US respondents are slightly more likely than Chinese respondents (46.1% > 44.1%) to report being concerned or very concerned about climate change. At the same time, US adults are more than twice as likely as Chinese adults (27.4% > 12.1%) to say they are not very or not at all concerned about climate change. This result is indicative of the significant divide in public opinion on climate change in the US compared to China.

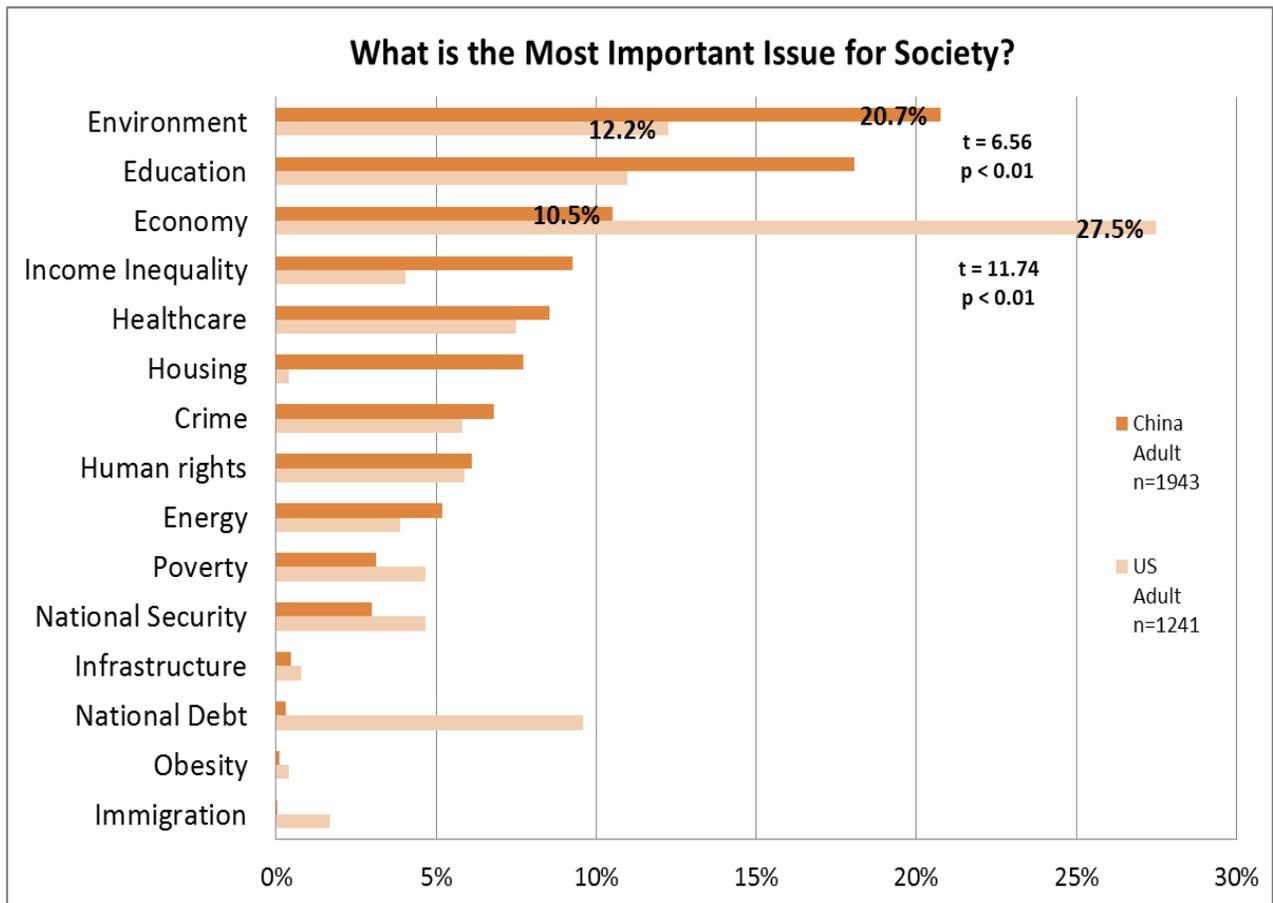


## Social Issues

When asked what is the most important issue for society to focus on, US adults convincingly choose the economy (27.5%) with the environment coming in a distant second (12.2%).

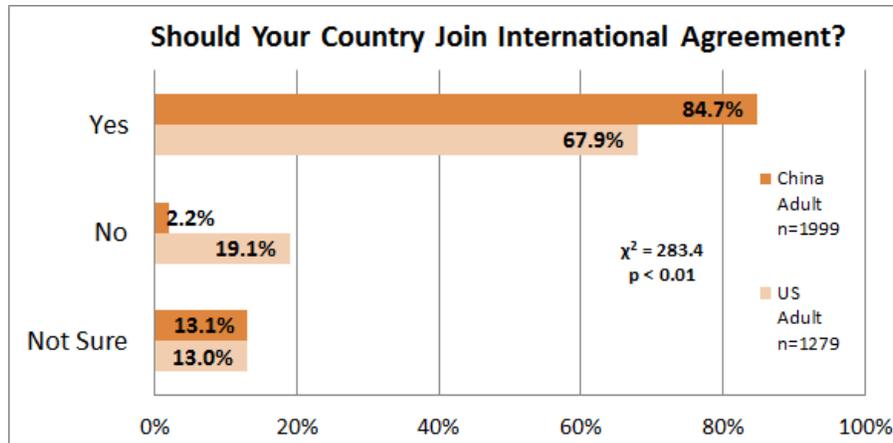
In contrast, almost twice as many Chinese adults (20.7% > 10.5%) identified the environment as the important issue compared to the economy.

This result is particularly important given the perceived tradeoffs between economic activity and environmentalism especially in the US.



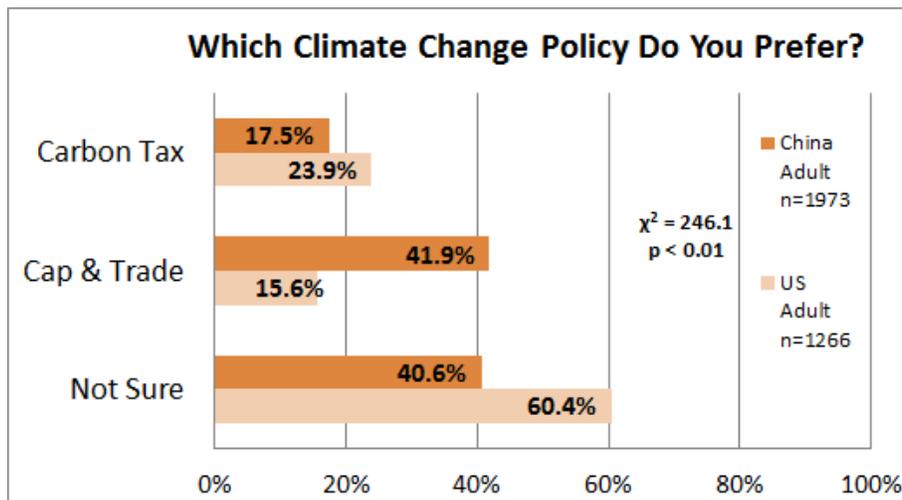
## Action

Despite the misunderstanding and debate about climate change among American adults, almost 68% say they think the US should join an international commitment to address climate change. Although about two-thirds of US adults favor such policy action, there is significantly more consensus among Chinese adults with just under 85% reporting they support joining an international agreement to address climate change.



## Policy

In terms of policies to address climate change, just over 40% of Chinese adults say they favor cap and trade over a carbon tax compared to just 15.6% of US adults. Interestingly, US respondents are far more likely (60.4% > 40.6%) to be uncertain regarding which of these policies they prefer.



## Willingness-to-Pay

All policies to address climate change will involve putting a price on emissions, and thus will result in a higher cost of goods and services such as transportation, energy, food etc. Although currencies and incomes are different in the US and China, the table below shows that adults in China are significantly more WTP to support climate change policy than US adults. Approximately, 25% of US adults are not WTP an additional \$20 a month compared to just 8.4% of Chinese not WTP 20 Yuan. Similarly, only about 23% of US adults are WTP at least \$60 a month compared to 45.7% of Chinese WTP at least 60 Yuan.

<b>Adult Willingness to Pay (WTP) Added Cost of Living for Climate Change Policy in the United States and China</b>				
<b>US (n=433)</b>		<b>China (n=637)</b>		<b>Initial Value = \$20 or 20 Yuan</b>
132	30.5%	62	9.7%	Not WTP 10 (\$,Yuan)/month
43	9.9%	21	3.3%	WTP between 10 and 20 (\$,Yuan)/month
84	19.4%	123	19.3%	WTP between 20 and 40 (\$,Yuan)/month
174	40.2%	431	67.7%	WTP at least 40 (\$,Yuan)/month
<b>US (n=411)</b>		<b>China (n=639)</b>		<b>Initial Value = \$40 or 40 Yuan</b>
148	36.0%	76	11.9%	Not WTP 20 (\$,Yuan)/month
48	11.7%	46	7.2%	WTP between 20 and 40 (\$,Yuan)/month
116	28.2%	158	24.7%	WTP between 40 and 80 (\$,Yuan)/month
99	24.1%	359	56.2%	WTP at least 80 (\$,Yuan)/month
<b>US (n=433)</b>		<b>China (n=621)</b>		<b>Initial Value = \$60 or 60 Yuan</b>
204	47.1%	74	11.9%	Not WTP 30 (\$,Yuan)/month
41	9.5%	38	6.1%	WTP between 30 and 60 (\$,Yuan)/month
99	22.9%	168	27.1%	WTP between 60 and 120 (\$,Yuan)/month
89	20.6%	341	54.9%	WTP at least 120 (\$,Yuan)/month

## CONCLUSION

Our results on the views of US adults are generally consistent with the findings of other researchers regarding US public opinion on climate change. Despite little existing research on what Chinese citizens of any age think about climate change, our results on Chinese adults do align reasonably well with the limited results available for comparison. In particular, the fact that Chinese citizens place a greater importance on the environment relative to the economy is similar to previous research findings.

Overall, it is troubling that Americans do not better understand the scientific consensus on the realities of anthropogenic climate change. The Intergovernmental Panel on Climate Change states “...the warming of the climate system is unequivocal...” and “...most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic

GHG concentrations.” Additionally, reviews of the climate literature indicate striking agreement (over 95%) with IPCC assessments.

This poster highlights the significant differences in how US and Chinese adults view the existence and causes of climate change as well as possible policies to address this important issue. Of course we are not sure exactly what these results mean in terms of the future of climate change policies in the US and China as well as globally, largely because of the vast economic, political, social and cultural differences between these two important countries.

However, we are sure that meaningful policies to address climate change must involve both China and the US. By presenting and publishing our results we hope to stimulate discussion, raise awareness and advocate for meaningful action to address global climate change.

\*All differences between US and Chinese respondents shown in graphs are statistically significant as determined by Chi-Squared tests.

\*\*Although not shown in this poster, regression analysis confirms findings of other studies; political ideology is a significant contributing factor to the division over climate change views among US adults.

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