

## **WHY ARE WE HERE?**

Consensus on where the statistical uncertainty about climate change is reasonably well known, and

Where there remains great uncertainty (either we don't know how accurate, or we know that we don't have accuracy).

Not everyone agrees with everything,  
But everyone agrees  $\geq 70\%$  with every statement!

Encourage the funding for, and collaboration with, statisticians in these latter areas.

Draft short statement (15-20 pages summarizing this), with a less than 2 page executive summary. ASA Board will review and hopefully approve this at Nov. 30-Dec.1 Board meeting.

## TIMELINE

7 Discussion Leaders send me summary short 1-page write-ups for their session by Tuesday, October 30<sup>th</sup> (ideally, by tomorrow evening), [DavidMarker@Westat.com](mailto:DavidMarker@Westat.com).

Richard, Doug, Mary, and I compile write-ups into single draft document, with executive summary by Tuesday, November 6<sup>th</sup>.

Participants will have opportunity to edit by Sunday, November 11<sup>th</sup>.

We revise and submit to ASA by Friday, November 16<sup>th</sup>.

IPCC Final Report release date is November 22<sup>nd</sup>.

## LANGUAGE USED BY IPCC WORKING GROUPS



“Uncertainty ranges for results given in this Summary for Policymakers are 90% **uncertainty** intervals.”

“Terms have been used to indicate the assessed likelihood, **using expert judgement**, of an outcome or a result: *Virtually certain* > 99% probability of occurrence, *Extremely likely* >95% ...”

“Anthropogenic contributions to aerosols ... remain the dominant **uncertainty** in radiative forcing.”

“Global average surface warming following a doubling of carbon dioxide concentrations ... is *likely* to be in the range of 2 to 4.5C with a best estimate of about 3C, and is *very unlikely* to be less than 1.5C. ... Cloud feedbacks remain the largest source of **uncertainty**.”

**Table SPM.E.1: Qualitative definition of uncertainty**

 Level of agreement (on a particular finding)	High agreement, limited evidence	High agreement, medium evidence	High agreement, much evidence
	Medium agreement, limited evidence	Medium agreement, medium evidence	Medium agreement, much evidence
	Low agreement, limited evidence	Low agreement, medium evidence	Low agreement, much evidence
	Amount of evidence <sup>23</sup> (number and quality of independent sources) 		

## Endbox 2. Communication of Uncertainty in the Working Group II Fourth Assessment

A set of terms to describe uncertainties in current knowledge is common to all parts of the IPCC Fourth Assessment.

### *Description of confidence*

Authors have assigned a confidence level to the major statements in the Summary for Policymakers on the basis of their assessment of current knowledge, as follows:

<i>Terminology</i>	<i>Degree of confidence in being correct</i>
Very high confidence	At least 9 out of 10 chance of being correct
High confidence	About 8 out of 10 chance
Medium confidence	About 5 out of 10 chance
Low confidence	About 2 out of 10 chance
Very low confidence	Less than a 1 out of 10 chance

### *Description of likelihood*

Likelihood refers to a probabilistic assessment of some well-defined outcome having occurred or occurring in the future, and may be based on quantitative analysis or an elicitation of expert views. In the Summary for Policymakers, when authors evaluate the likelihood of certain outcomes, the associated meanings are:

<i>Terminology</i>	<i>Likelihood of the occurrence/ outcome</i>
Virtually certain	>99% probability of occurrence
Very likely	90 to 99% probability
Likely	66 to 90% probability
About as likely as not	33 to 66% probability
Unlikely	10 to 33% probability
Very unlikely	1 to 10% probability
Exceptionally unlikely	<1% probability

## **SOURCES OF UNCERTAINTY**

Choice of models

Simulations within model

Choice of parameterization

Choice of variables to include

Measurement error in underlying data series

Lack of representative data (sampling error)

