

# Assessing Assessments: a sociocultural history of the West Antarctic Ice Sheet

*Jessica O'Reilly*

*Postdoctoral Research Associate  
Princeton University and the University of California, San Diego*

The potential for rapid disintegration of the West Antarctic Ice Sheet—and the timeframe over which such ice discharge could occur—are matters of profound debate among the glaciologists who study the West Antarctic Ice Sheet. In the 1980s, several informal workshops and small conferences gathered experts to report on the cutting edge research concerned with the West Antarctic Ice Sheet. As research became more specific and models more complex, WAIS experts moved from attending these smaller workshops to participating in highly organized, large-scale, and international undertakings such as the Intergovernmental Panel on Climate Change (IPCC).

As a case study, I examine the development of WAIS projections in IPCC assessment reports over time. While earlier IPCC assessments contained quantitative estimates of WAIS' contribution to sea level rise during the 21<sup>st</sup> century and beyond, in the fourth assessment report (AR4), the authors determined that there was insufficient data to provide a credible estimate. Many may not have felt compelled to report an estimate since the ice sheet contribution was regarded as unlikely to be a primary contributor over this century. Many people involved have noted that the authors were brave in deciding to leave the ice sheets out of sea level rise assessments in AR4; others consider it a serious error that weakens 21<sup>st</sup> century sea level rise estimates as well as longer term projections. I discuss four contributing factors leading to this outcome—1) the composition and group dynamics of IPCC writing teams, 2) the ways in which the IPCC organizes and reorganizes chapters for each assessment report, 3) methods used to make uncertainty calculations, and 4) the role of new data in shaping knowledge—which underscore the complexity of making projections under great uncertainty.

This project uses ethnographic and historical methods to study how scientists produce knowledge about this subject as well as contribute their knowledge to policy-relevant assessments. I analyze the ways in which experts organize themselves and their work as well as the informal discussions that are integral to shaping the assessment reports. Some philosophers of knowledge argue that individuals within such institutions become established in a “network of writing,” adopting practices and habits that produce written knowledge. How have WAIS scientists collaborated in assessments through such a network and how was their written understanding of WAIS transformed as it moved through time and between meetings?