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Cris Poor and **Nathan C. Ryan*** (nathan@math.ucla.edu), UCLA Department of Mathematics, Box 951555, Los Angeles, CA 90095-1555, and **David S. Yuen**. *Lifting Puzzles for Siegel Modular Forms*.

The theory of liftings of elliptic modular forms to Siegel modular forms is very rich: the Saito-Kurokawa lift is a well-known example. Two known lifts are the Ikeda (a generalization of the Saito-Kurokawa lift) and Miyawaki lifts. In recent work the first and third authors computed Fourier expansions of Siegel modular forms of genus 8 and weight up to 16. In the present work, we discuss the Euler factors of these forms, identify some of these forms as Ikeda and Miyawaki lifts, and suggest that the remaining forms are the result of some as yet unidentified lift or lifts. In doing so, we compute the Hecke eigenvalues and Satake parameters of these forms. (Received February 17, 2007)