Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-05-1498 **Karen S. Briggs*** (kbriggs@math.ucsd.edu), Department of Mathmatics, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0112, and **Jeffrey B. Remmel**, Department of Mathmatics, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0112. *A Rook Theory Model for p,q-Analogues of Hsu and Shiue's Generalized Stirling Numbers.* Preliminary report.

Using three complex parameters α, β, and r, Hsu and Shiue defined the generalized Stirling numbers of the first and second kind, respectively denoted $S^1_{n,k}(\alpha,\beta,r)$ and $S^2_{n,k}(\alpha,\beta,r)$. Based on two natural p,q-analogues for the falling factorial, Remmel and Wachs obtained two types of p,q-analogues of the Stirling numbers of the first and second kind; type I denoted $S^{1,p,q}_{n,k}(\alpha,\beta,r)$, $S^{2,p,q}_{n,k}(\alpha,\beta,r)$, and type II denoted $\widetilde{S}^{1,p,q}_{n,k}(\alpha,\beta,r)$, $\widetilde{S}^{2,p,q}_{n,k}(\alpha,\beta,r)$. Here, for nonnegative integers α, β, and r, we define two rook theoretic models each based on a pair of rook placements on two boards. For a given "staircase board" with respect to each model, we show that the respective rook numbers yield combinatorial interpretations for $S^{1,p,q}_{n,k}(\alpha,\beta,r)$ and $\widetilde{S}^{1,p,q}_{n,k}(\alpha,\beta,r)$. Further, we show that the two types of generalized p,q-Stirling numbers of the second kind are obtained by switching the roles of α and β in our two models. (Received October 05, 2004)