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**Lenny Jones\*** (lkjone@ship.edu), Department of Mathematics, Shippensburg University, 1871 Old Main Drive, Shippensburg, PA 21742, and **Andrew Francis**. *Bases for the Center of the Symmetric Group Algebra Using Jucys–Murphy Elements*. Preliminary report.

In 1983, G. E. Murphy constructed a basis for the center of the integral group algebra of the symmetric group  $S_n$  which consists of a very specific set of monomial symmetric polynomials in the Jucys–Murphy elements. In this talk, we present all such bases when  $n = 3$  and  $n = 4$ . Somewhat surprising is that in the case  $n = 3$ , there are only four such bases, while there are infinitely many such bases when  $n = 4$ . Finally, in these particular cases, we use these results to determine bases for the center of the integral Iwahori–Hecke algebra which consist of monomial symmetric polynomials in the Jucys–Murphy elements. One consequence is that the original basis given by Murphy for the center of the group algebra does not generalize to a basis for the center of the integral Iwahori–Hecke algebra. (Received July 26, 2007)