1127-17-303   **Darlayne Addabbo***, 1409 West Green Street, Urbana, IL 61801. *Q-systems and Generalizations in Representation Theory.*

In this talk, we will define tau-functions given as matrix elements for the action of $\widehat{GL_n}$ on n-component fermionic Fock space. We will show that, in the $n = 2$ case, these tau-functions satisfy the $A_{\infty/2}$ Q-system. Since Q-systems are of interest in many places in mathematics, for example in representation theory and in combinatorics, it is natural to expect that the difference relations satisfied by tau-functions for $n > 2$ are also interesting. Here, we will discuss the difference relations for the general n case and the progress we have made in analyzing these systems of equations within the context of other areas of mathematics. If time permits, a generalization of this work will be discussed. (Joint with Maarten Bergvelt) (Received February 06, 2017)