1096-VN-1731 **Stephen M. Adams*** (smadams2@ncsu.edu), North Carolina State University, Department of Mathematics, Campus Box 8205, Raleigh, NC 27695. *On Distributive Cross Section Lattices of $\mathcal{J}$-irreducible Reductive Monoids.* Preliminary report.

Let M be an irreducible algebraic monoid with reductive unit group G. There exists an idempotent cross section Λ of $G \times G$ orbits that forms a lattice under the partial order $e \leq f \iff GeG \subseteq \overline{GfG}$, where the closure is in the Zariski topology. This cross section lattice is important in describing the structure of reductive monoids. M is said to be $\mathcal{J}$-irreducible when Λ has a unique minimal nonzero element. In this case the cross section lattice is completely determined by the type of the minimal element and the Coxeter-Dynkin diagram of G. In this talk we will provide some combinatorial properties of distributive cross section lattices of $\mathcal{J}$-irreducible monoids. (Received September 16, 2013)