THE DEPARTMENT OF MATHEMATICS

$\mathfrak{F}_P(P) = \mathfrak{F}_P(G)$   $P \in Syl_p(G)$   $N = N_G(Z(J(P)))$, $\mathfrak{F}_P(N) = \mathfrak{F}_P(G)$

# Algebra Seminar

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Monday – December 3, 2018

***at 4pm, in the Alavi Commons, Everett Tower***

## The Frobenius Normal p-complement Theorem and Burnside's "nicht" p-nilpotent Theorem

**Clifton E. Ealy Jr.**
The Department of Mathematics
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In this talk, I will, finally, conclude the proof of Frobenius's Normal p-complement Theorem. And discuss Burnside's Theorem:
**Let P and P* be p-Sylow subgroups of G, Let $1 < M \lhd P$ and $M < P^*$ but $M \ntriangleleft P^*$. Then there exist a q-element g of G for a prime q such that $q \neq p$ with $g \neq 1$,**
**a) $g \notin N_G(M)$;**
**b) $F = M M^g \cdots M^h$ ($h = g^{|g|-1}$) is a p-group; and**
**c) $g \in N_G(F)$ but $g \notin C_G(F)$.**
All are welcomed.

$1 \to C \to G \to G/C \to 1$   $P \in Syl_p(G/C)$   $1 \to C \to G \to G/C \to 1$

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