Algebra Seminar

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Z-graded noncommutative projective geometry

Abstract:
The first Weyl algebra $A = k(x, y)/(xy - yx - 1)$ is $\mathbb{Z}$-graded with $\deg x = 1$ and $\deg y = -1$. Susan Sierra and Paul Smith studied the category of graded modules over $A$, showing that this category was equivalent to coherent sheaves on a certain quotient stack. In this talk, we investigate the graded module categories over $\mathbb{Z}$-graded rings called generalized Weyl algebras. We construct commutative rings with equivalent graded module categories. In the pre-talk, we will discuss some preliminaries on categories and graded rings before giving an overview of noncommutative projective geometry.

Please note: There will be a pre-talk for graduate students from 2:30 - 3:00. The regular talk will begin at 3:00.

Host: Daniel Rogalski

Monday, November 9, 2015
3:00 PM
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