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**Chin-Yi Jean Chan** and **Claudia Miller\***, Mathematics Dept, 215 Carnegie Bldg, Syracuse,  
NY 13244-1150. *A Riemann-Roch formula for the blow-up of a nonsingular affine scheme.*

Hilbert polynomials have classically been shown to be determined by intersections with hyperplanes. We give another approach over regular local rings via Intersection Theory on the blow-up scheme. The result comes in the form of a Riemann-Roch formula for the blow-up of a nonsingular affine scheme. (Received January 02, 2007)