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**Sarah Jane Johnston\*** ([sarahjane.johnston@wits.ac.za](mailto:sarahjane.johnston@wits.ac.za)), School of Mathematics, University of the Witwatersrand, Johannesburg, Gauteng 2050, South Africa, and **Mourad E H Ismail** ([ismail@math.ucf.edu](mailto:ismail@math.ucf.edu)), Department of Mathematics, University of Central Florida, Orlando, FL 32816. *Orthogonal polynomials and non-linear difference equations.*

We use lowering relations of orthogonal polynomials to find difference equations having the Painlevé property. By lowering relation, we mean  $TP_n(x)$  where  $T$  is some linear operator such as the differential operator  $\frac{d}{dx}$ , difference operator  $\Delta$  or the  $q$ -difference operator  $D_q$ . The coefficients of the lowering relation given by  $A_n(x)$  and  $B_n(x)$  satisfy linear recurrence relations which imply non-linear relations among the recursion coefficients of the orthogonal polynomials. (Received August 11, 2008)