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**Michael Fulkerson** and **Kristi Karber\*** (kkarber1@uco.edu). *Existence of Solutions for Nonconvex  $n^{\text{th}}$  Order Differential Inclusions.*

We prove an existence result for the  $n$ th order differential inclusion  $x^{(n)} \in F(x, x', x'', \dots, x^{(n-1)}) + f(t, x, x', \dots, x^{(n-1)})$ , with initial conditions  $x(0) = a_0, x'(0) = a_1, \dots, x^{(n-1)}(0) = a_{n-1}$ , where  $f$  is a Carathéodory function and where  $F$  is a compact valued upper semicontinuous multifunction such that  $F(x_0, x_1, \dots, x_{n-1}) \subset \partial V(x_{n-1})$  for some lower semicontinuous proper convex function  $V$ . (Received September 16, 2011)