

1106-11-1207      **Lenny Jones** and **Alicia Lamarche\*** (a15903@ship.edu), Department of Mathematics,  
Shippensburg University, Shippensburg, PA 17257. *Modular Solvability of Non-Solvable  
Diophantine Equations*. Preliminary report.

There are many examples of equations which have no integer solutions but do have solutions modulo  $n$  for every positive integer  $n$ . For example, there are classes of polynomials that possess this property. Additionally, in 2007 Mollin was able to provide conditions for Diophantine equations of the form  $ax^2 + by^2 = \pm 1$  so that there are no solutions over the integers, yet there are solutions modulo  $n$  for every  $n$ . In this talk, we investigate equations which have similar properties. (Received September 11, 2014)