

1125-11-1309 **Lenny Jones** (lkjone@ship.edu) and **Tristan Phillips*** (tp7924@ship.edu), Department of Mathematics, Shippensburg University, Shippensburg, PA 17257. *Arithmetic Progressions of Polygonal Numbers with Polygonal Common Difference*. Preliminary report.

In 1965, Sierpinski showed that there are infinitely many triples of triangular numbers in arithmetic progression for which the common difference is itself a triangular number. More recently, Ide and Jones showed that there are no 3-term arithmetic progressions of squares for which the common difference is a square. They also showed that no 3-term arithmetic progressions of the triangular numbers have a square common difference. In this talk, we generalize these ideas to other polygonal numbers. (Received September 16, 2016)