

1106-65-2211 **Dongming Wei***, 6204 Wadsworth Drive, New Orleans, LA 70122. *Nonlinear Waves Arising from Modeling of Graphene and Polyimide Structures*. Preliminary report.

In this talk, we present some results in studying nonlinear waves arising from modeling vibrations of springs, rods, and beams made of graphene and polyimide respectively. Analytic solutions of some spring-mass equations are presented in terms of generalized trigonometric functions such as the elliptic-Jacobi functions and some non-Euclidean two parameter sine functions. Numerical analysis and numerical solutions are also presented. (Received September 16, 2014)