1035-I1-884 **David - Fowler*** (fowlerdnmi@gmail.com), 16 Henzlik Hall, University of Nebraska, Lincoln, NE 68588-0355. *Ramanujan and Fourier with GeoGebra.* Preliminary report.

GeoGebra is a free, multi-platform dynamic mathematics software application developed by Markus Hohenwarter that joins geometry, algebra and calculus.

The application is primarily intended for secondary classroom mathematics, but as shown in this presentation can be used for more advanced study. Three examples taken from a summer professional development workshop for teachers will be demonstrated: 1. A formula by Ramanujan for the perimeter of an ellipse; 2. A formula by Ramanujan and Hardy for the number of partitions of an integer; 3. A problem from David Bressoud's text "A Radical Approach to Real Analysis."

The presentation will include a demonstration of the steps used in the application of GeoGebra to these problems, along with a discussion of the role of technology in extending the teachers' understanding of the mathematics. (Received September 17, 2007)