962-Q1-465 **Jerry M Lodder*** (jlodder@nmsu.edu), New Mexico State University, Math Sciences, Dept. 3MB, Las Cruces, NM 88003. *Researches on the Curvature of Surfaces.*

The goal of this talk is to present a summary of Euler's 1760 publication "Recherches sur la courbure des surfaces," which identified the principal cross sections of maximal and minimal curvature of a surface in space. This foundational paper of what would become differential geometry is one of the first to apply the idea of curvature of plane curves to higher dimensional objects. The skilled Euler shows how the daunting formulae of the curvature of an arbitray cross section can be drastically simplified to yield the extreme values for curvature. His ideas would be taken up by Gauss in the *Disquisitiones superficies*, and are today vital for an understanding of manifold theory. The talk will also demonstrate how Euler's paper can be used as a pedagogical resource, showing how mathematics evolves through a series of key ideas. Euler clearly uses notions of curvature pioneered by Huygens, Newton, l'Hopital, and Jean Bernoulli, yet the paper contains the seeds of what would become the tangent space to a surface. (Received September 14, 2000)