962-Q1-502 **Janet H Barnett*** (jbarnett@uscolo.edu), Department of Mathematics, 2200 Bonforte Boulevard, Pueblo, CO 8101-4901. *Chains, Names, and Imaginary Spheres: A History of the Hyperbolic Functions in the 18th Century.*

The equation of a catenary — a flexible chain suspended by its ends and acted on by gravity — was obtained in 1691 by Leibniz and others in response to a challenge posed by Jacob Bernoulli. According to modern calculus texts, this equation employs the hyperbolic cosine function. But a full exploration of those hyperbolic function properties which lend these functions their names and notation did not occur until the eighteenth century. This talk examines the contributions of Euler, Lambert and Ricatti in this area, and presents problems for use in the classroom which are suggested by the historical development. (Received September 15, 2000)