1163-AF-233 **William Dunham*** (bdunham@brynmawr.edu). *J. J. Sylvester and Odd Perfect Numbers.*

"Whether there are any odd perfect numbers," wrote Euler, "is a most difficult question." His statement was prophetic, for the existence of such numbers remains unresolved to this day. However, mathematicians have established necessary conditions for odd perfect numbers (should any exist). In this talk we prove one of these: an odd perfect number must have at least three different prime factors. The proof, from J. J. Sylvester in 1888, is as elementary as it is elegant. (Received August 29, 2020)