983-47-790 **Keri Kornelson*** (keri@math.tamu.edu), **Ken Dykema** (kdykema@math.tamu.edu), **Dan Freeman** (dfreeman@guilford.edu), **Dave Larson** (larson@math.tamu.edu), **Marc Ordower** (mordower@rmwc.edu) and **Eric Weber** (ESW@uwyo.edu). *Ellipsoidal Tight Frames.*

Tight frames on a Hilbert space are useful in a variety of signal processing applications. The constraints involved in implementing these schemes lead to the very interesting questions regarding the existence and construction of tight frames with specified additional properties. Some examples might be frames of a certain length (cardinality) or frames whose elements have specified norms. We explore the existence of tight frames whose elements lie on an arbitrary ellipsoid within the Hilbert space. We show that every such ellipsoid contains a tight frame, and additionally that such a tight frame can be found with any length. (Received September 24, 2002)