1044-47-62 **C. Anthony Hester*** (`anthonyhester@davidson-tech.com`). *Semigroups Generated by Pseudo-contractive Mappings Under the Nagumo Condition.*

Let $C$ be a closed subset of a Banach space $X$ whose topological dual space $X^*$ is uniformly convex. Using strong measurability, the Pettis integral, the weak derivative, and other concepts from the calculus of vector-valued functions, one may show that, for any demicontinuous weakly Nagumo $k$-pseudo-contractive mapping $T : C \to X$, $A = T - I$ weakly generates a semigroup of type $k - 1$ on $C$. If $k < 1$ (id est, if $T$ is strongly pseudo-contractive), then the semigroup consists of contraction operators. A family of commuting contraction operators on $C$ necessarily has a unique common fixed point, consequently, $T$ has a unique fixed point. This implies that, if $T$ is pseudo-contractive ($k = 1$) and $C$ is also bounded and convex, then $T$ has at least one fixed point. But $T$ is weakly inward when $C$ is convex and self-mappings are always weakly inward, hence, any demicontinuous pseudo-contractive mapping $T : C \to C$ has a fixed point when $C$ is closed, bounded, and convex. This answers an important question in fixed point theory which has been open for quite some time. (Received August 12, 2008)