**Meeting:** 1003, Atlanta, Georgia, ASL CP, ASL Session for Contributed Papers

1003-47-1328 **Sami M. Hamid*** (hamid@math.tamu.edu), P.O. Box # 291, College Station, TX 77841. *On the Hyperinvariant Subspace Problem.*

Let $\mathcal{H}$ be a complex Hilbert space with $\dim \mathcal{H} = \aleph_0$, and let $\mathcal{L}(\mathcal{H})$ denote the algebra of operators on $\mathcal{H}$. We write $(A)$ and (BCP) for the subset of $\mathcal{L}(\mathcal{H})$ of algebraic operators and c.n.u. contractions with essential spectrum dominating on the unit circle, respectively, and if $T \in \mathcal{L}(\mathcal{H})$, we write Hlat$(T)$ for the lattice of all hyperinvariant subspaces of $T$. In a sequence of four recent papers, two of which was coauthored by the speaker, the following results were obtained. *Theorem 1.* $\forall T \in \mathcal{L}(\mathcal{H})\backslash(A)$ and every $0 \leq \theta < 1$, $\exists$ $B_T \in (\mathrm{BCP}) \cap C_{00}$ with $\sigma(B_T) = \sigma_e(B_T) = \{\zeta : \theta \leq |\zeta| \leq 1\}$ such that Hlat $(T) \equiv$ Hlat $(B_T)$. *Theorem 2.* $\exists$ a block-diagonal (BCP), $C_{00}$ contraction $D \in \mathcal{L}(\mathcal{H})$ with $\sigma(D)$ the unit disc such that $\forall$ $\varepsilon > 0$, $\exists$ a compact $K_{T,\varepsilon} \in \mathcal{L}(\mathcal{H})$ such that Hlat $(T) \equiv$ Hlat$(D + K_{T,\varepsilon})$. The speaker will discus the impact of these results on the theory of the structure of (BCP)-operators. (Received October 05, 2004)