1113-47-171   **Carl C. Cowen*** (`ccowen@math.iupui.edu`). *More Universal Operators Commuting with a Compact Operator.*

A bounded operator U on the Hardy space H^2 is called a *universal operator in the sense of Rota* if for each bounded operator A on H^2, there is a closed invariant subspace M for U and a non-zero number λ so that the restriction of U to M is similar to λA, that is, $UX = \lambda XA$ for a unitary X taking H^2 onto M. In 2013, Eva Gallardo and the speaker proved the existence of an analytic Toeplitz operator whose adjoint is a universal operator that commutes with an injective compact operator with dense range.

In fact, there is a very large class of analytic Toeplitz operators whose adjoints are universal operators in the sense of Rota and commute with interesting compact operators. These ideas provide a possible path to the proof of the invariant subspace theorem:

If every closed, infinite dimensional, invariant subspace for the adjoint of an analytic Toeplitz operator on H^2 that is universal in the sense of Rota has a non-trivial intersection with some invariant subspace of T_z^*, then every bounded linear operator on a separable Hilbert space of dimension two or more has a non-trivial closed invariant subspace.

This talk is based on joint work of Eva Gallardo and the speaker. (Received August 20, 2015)