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Glenn Stevens* (ghs@math.bu.edu), Department of Mathematics and Statistics, 111
Cummington Mall, Boston, MA 02215, and **Avner Ash**. *The Eigenvariety Machine and a
Conjecture of Eric Urban.*

Eigenvarieties have played an important role in the p -adic theory of automorphic forms and their global arithmetic properties, by providing a natural context for investigating families of Galois representations, and p -adic L -functions. In this talk we present an axiomatic construction of cohomological eigenvarieties and discuss a conjecture of Eric Urban that predicts the dimension of these eigenvarieties in automorphic settings. Our starting point is the "eigenvariety machine" of Coleman-Mazur and Buzzard which produces eigenvarieties attached to orthonormalizable Banach modules with an action of the Hecke algebra. We extend this by constructing eigenvarieties associated to the arithmetic cohomology of orthonormalizable Banach modules and by giving a lower bound for their dimensions, consistent with Urban's conjecture. (Received August 19, 2014)