1005-55-98 **Ralph M Kaufmann*** (`kaufmann@math.uconn.edu`), University of Connecticut, Department of Mathematics, 196 Auditorium Rd, Storrs, CT 06269-3009. *Cells models for operads and actions on the Hochschild complex.*

Motivated by string-topology, we give cell models of several topological operads which are essentially all contained in the operad of bordered surfaces with marked points on the boundary or are certain generalizations of it. We identify these operads with classical ones like the little discs, the framed little discs, and more recent ones like the Sullivan Chord diagrams. Moreover we show that the cells of the little disc operad operate on the Hochschild Cohomology of an associative algebra and that the framed little discs as well as Sullivan Chord diagrams act on the Hochschild complex of a Frobenius algebra. Finally we show that for a Frobenius algebra we have an action of an cell model of the above moduli space. Furthermore by adding finite markings on the cells we again obtain an operation on the Hochschild complex which specializes to the action of the framed little discs and the Sullivan Chord diagrams. (Received February 01, 2005)