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**Satyan L. Devadoss\*** (satyan.devadoss@williams.edu), **Timothy Heath** and **Cid Vipismakul**. *Deformations of bordered Riemann surfaces and convex polytopes*.

We consider the moduli space of Riemann surfaces with boundary and marked points. Such spaces appear in open-closed string theory, particularly with respect to holomorphic curves with Lagrangian submanifolds. We consider a combinatorial framework to view the compactification of this space based on the pair-of-pants decomposition of the surface, relating it to the well-known phenomenon of bubbling. Our main result classifies all such spaces that can be realized as convex polytopes. A new polytope is introduced based on truncations of cubes, and its combinatorial and algebraic structures are related to generalizations of associahedra and multiplihedra. (Received August 04, 2010)