1054-81-69 **Justin D Thomas\*** (`justmas@gmail.com`), Department of Mathematics, Northwestern University, 2033 Sheridan Road, Evanston, IL 60208. *A geometric proof of the generalized Deligne conjecture.* Preliminary report.

The $d$-dimensional version of the Swiss Cheese operad interpolates between the operads $E_{d-1}$ and $E_d$. We show that the swiss cheese operad is up to homotopy generated in degrees 0 and 1. We show that this purely topological result implies that the Hochschild cochains of an $E_{d-1}$ algebra form an algebra (up to homotopy) over $E_d$. This is the dimension $d$ Deligne "conjecture". (Received September 02, 2009)