1057-05-253   **Ed Swartz*** (`ebs22@cornell.edu`), Malott Hall, Ithaca, NY 14853. *f-vectors, descent sets and the weak order.* Preliminary report.

In the last few years Chari's convex ear decomposition has been applied to several apparently unrelated order complexes of posets to derive new insight into their f-vectors. An unexpected consequence of these investigations is that their flag f-vectors are closely related to a specific interaction between descent sets and the weak order of finite Coxeter groups. The goal of this talk is to explain how face enumeration on these posets and other complexes naturally leads to a zoo of open problems involving descent sets and the weak order. (Received January 24, 2010)