1086-VM-827 **Alan Durfee*** (adurfee@mtholyoke.edu), adurfee@mtholyoke.edu. *Polyhedral differential geometry.* Preliminary report.

I will give a quick survey of some elementary results in polyhedral differential geometry, including some lesser known ones, and also some questions which appear to have not been addressed.

The advantages of this approach to differential geometry are clear: The usual course in differential geometry uses smooth curves and surfaces. The prerequisites for a course like this are linear algebra and several semesters of calculus. Concepts may be subtle, proofs may be involved, and computations may take work. The main results, the Theorem Egregium and the Gauss-Bonnet theorem, have substantial proofs.

The analogous concepts in polyhedral differential geometry are easier to understand and easier to use. The prerequisites for a course in this subject are minimal. The proofs of the Theorem Egregium and the Gauss-Bonnet theorem are straightforward. In fact many of the concepts in smooth differential geometry have polyhedral analogues. Some of these results were proved long ago, others more recently.

I will describe these. (Received September 25, 2012)