1125-13-351 **Susan Loepp*** (`sloepp@williams.edu`), Bronfman Science Center, 18 Hoxsey St., Williamstown, MA 01267. *Understanding the Relationship Between Local Rings and Their Completions: Contributions by Undergraduates.* Preliminary report.

Given a Noetherian ring R with exactly one maximal ideal M, we first define a metric on R with respect to M. The completion of R with respect to this metric turns out to be a ring with surprisingly nice properties. One can often gain a better understanding of the ring R by studying its completion. However, the relationship between R and its completion is not well understood. After giving a general introduction to the topic of rings and their completions, we will highlight research by undergraduates over the last 20 years that has helped us to better understand this mysterious relationship. (Received August 29, 2016)