1116-13-238 **Sarah M. Fleming**, **Lena Ji**, **S. Loepp**, **Peter M. McDonald**, **Nina Pande*** (ngp3@williams.edu) and **David Schwein**. *Rings, Completions, and Strange Formal Fibers.*

Let R be a Noetherian ring with exactly one maximal ideal. We can define a metric on R based on its maximal ideal and complete R with respect to that metric. The relationship between a ring R and its completion can be studied through the natural map from the prime ideals of the completion of R to the prime ideals of R given by intersecting ideals of the completion with R. If $\mathfrak{p}$ is a prime ideal of R, the inverse image of $\mathfrak{p}$ under this map is called the formal fiber of R at $\mathfrak{p}$. The dimension of the formal fiber of R at $\mathfrak{p}$ is the length of the longest chain of prime ideals the formal fiber of R at $\mathfrak{p}$ contains. For a typical ring R, the dimension of its formal fiber at a particular prime ideal $\mathfrak{p}$ is equal to $n - 1 - \text{ht}\, \mathfrak{p}$ where n is the Krull dimension of R. In this talk, we show that there are excellent unique factorization domains with the unusual property that the dimensions of their formal fibers do not follow this pattern. We show that, in fact, the dimensions of the formal fibers at the zero ideal and height one prime ideals can be exactly controlled over a large range of values. (Received August 16, 2015)