

Colloquium

Bruce Olberding

New Mexico State University

Friday, February 24, 2012 at 3 pm in Bell Hall 143

The concept of a Noetherian ring

The publication of Emmy Noether's seminal works of 1921 and 1927 on ideal decompositions in commutative rings led to a number of fundamental properties of Noetherian rings being swiftly established in the next two decades, culminating with Cohen's structure theorem for complete local rings in 1946. In these two articles, Noether introduced the ascending chain condition to axiomatize the ideal theory of finitely generated algebras over a field, as well as orders in an algebraic number field. This simple but powerful ideal-theoretic condition proved over the next 90 years to capture many essential properties of the rings in the geometric and arithmetic contexts which motivated Noether. This talk looks at some of this history, as well the development of some of the examples of Noetherian rings that betray the geometric and arithmetic intuition in which the theory is rooted.