

**Kathi Crow**

**Gettysburg College**

*"Counterexamples in Ring Theory"*

**Abstract:** Once an example disproves a conjecture it stands out from other examples and becomes a more interesting object - a counterexample. Conjectures live in a nebulous land waiting to be proved and become a theorem or disproved. Every example is on the lookout for the right conjecture so it can fulfill its dream of becoming a counterexample and conjectures are looking for counterexamples so they can be settled. We will start by introducing the concept of ring. Next we will consider examples and conjectures in ring theory and match them up. We will end by looking at an open problem - a conjecture still looking for a counterexample. Although no background in algebra is necessary, knowledge of linear algebra may be useful in understanding some of the examples.