

1086-N1-1998      **John Paul Cook\***, jpcook@usao.edu. *The Emergence of Algebraic Structure: Students Come to Understand Zero-Divisors.*

Little is known about how students learn the basic ideas of ring theory. While the literature addressing student learning of group theory is certainly relevant, the concept of zero-divisor in particular is one for which group theory has no analog. In order to better understand how students come to understand zero-divisors, this talk will present results from a study that investigated how students can capitalize on their intuitive notions of solving equations to reinvent the definitions of ring, integral domain, and field. The emergence and progressive formalization of the concept of zero-divisor at various stages of the reinvention process will be detailed and discussed. (Received September 24, 2012)