1077-13-964 **K. Alan Loper** (lopera@math.ohio-state.edu) and **Nicholas J. Werner***
(nw89@evansville.edu), Department of Mathematics, University of Evansville, 1800 Lincoln Ave, Evansville, IN 47722. *A Generalization of Integer-valued Polynomials Rings.*

The classical ring of integer-valued polynomials $\mathrm{Int}(\mathbb{Z})$ consists of the polynomials in $\mathbb{Q}[x]$ that map $\mathbb{Z}$ into $\mathbb{Z}$. In this talk, we consider a generalization of integer-valued polynomials where the polynomials act on $\mathbb{Z}$-algebras such as a ring of algebraic integers or the ring of $n \times n$ matrices with entries in $\mathbb{Z}$. Specifically, given a $\mathbb{Z}$-algebra A, we define $\mathrm{Int}_A(\mathbb{Z})$ to be the set of polynomials in $\mathbb{Q}[x]$ that map A into A; then, $\mathrm{Int}_A(\mathbb{Z})$ is usually a proper subring of $\mathrm{Int}(\mathbb{Z})$. The principal question we consider is whether or not $\mathrm{Int}_A(\mathbb{Z})$ is a Prüfer domain. We will demonstrate that when A is a finite-dimensional $\mathbb{Z}$-algebra, $\mathrm{Int}_A(\mathbb{Z})$ need not be a Prüfer domain, but the integral closure of $\mathrm{Int}_A(\mathbb{Z})$ is always a Prüfer domain. (Received September 14, 2011)