1056-17-415 **Erhard Neher** and **Alistair Savage*** (alistair.savage@uottawa.ca), Department of Mathematics, University of Ottawa, Ottawa, Ontario K1N 6N5, and **Prasad Senesi**. *Equivariant map algebras.*

Suppose a finite group acts on a scheme (or algebraic variety) X and a finite-dimensional Lie algebra $\mathfrak{g}$. Then the space of equivariant algebraic maps from X to $\mathfrak{g}$ is a Lie algebra under pointwise multiplication. Examples of such equivariant map algebras include (multi)current algebras, (multi)loop algebras, three point Lie algebras, and the (generalized) Onsager algebra. In this talk we will present a classification of the irreducible finite-dimensional representations of an arbitrary equivariant map algebra. It turns out that (almost) all irreducible finite-dimensional representations are evaluation representations. As a corollary, we recover known results on the representation theory of particular equivariant map algebras (for instance, the loop algebras and the Onsager algebra) as well as previously unknown classifications of other equivariant map algebras (for example, the generalized Onsager algebra). All such classifications are specializations of the general theorem. (Received September 15, 2009)