1023-17-545 **Jorg Feldvoss*** (`jfeldvoss@jaguar1.usouthal.edu`), Department of Mathematics and Statistics, University of South Alabama, Mobile, AL 36688-0002. *Injective Modules and Cohomology of Lie Algebras.*

In this talk we will consider injective modules over universal enveloping algebras of finite-dimensional Lie algebras which either are solvable over a field of characteristic zero or arbitrary over a field of prime characteristic. It turns out that in both cases the injective hulls of locally finite modules are always locally finite. This enables us to develop a unified approach for several results on locally finite submodules of the coregular module of universal enveloping algebras. For instance, the locally finite dual of the universal enveloping algebra of a finite-dimensional Lie algebra over a field of prime characteristic is always injective and the same holds in characteristic zero if and only if the Lie algebra is solvable. Moreover, we discuss the cohomology of certain locally finite submodules of the coregular module and a recent result of Hans-Jürgen Schneider which is important in the extension theory of Lie bialgebras. Finally, we describe the minimal injective resolution of the regular module of the universal enveloping algebra of a finite-dimensional Lie algebra over a field of prime characteristic. (Received September 17, 2006)