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Pamela E. Harris* (peh2@williams.edu), 33 Stetson Ct, Bascom House Room 106C,
Williamstown, MA 01267. *Computing weight multiplicities.*

Central to the study of the representation theory of Lie algebras is the computation of weight multiplicities, which are the dimensions of vector subspaces called weight spaces. The multiplicity of a weight can be computed using a well-known formula of Kostant that consists of an alternating sum over a finite group and involves a partition function. In this talk, we present some recent results related to questions regarding the number of terms contributing nontrivially to Kostant's weight multiplicity formula along with some formulas to compute q -weight multiplicities for certain finite-dimensional Lie algebras. The work presented is in collaboration with a group of undergraduate research students at Williams College: Kevin Chang, Edward Lauber, Haley Lescinsky, Grace Mabie, Gabriel Ngwe, Cielo Perez, Aesha Siddiqui, and Anthony Simpson. (Received August 23, 2017)