A prime representation of a Hopf algebra is defined to be one which cannot be written as a tensor product of two non-trivial representations. In 2009, Hernandez and Leclerc showed that a family of representations of the quantized enveloping algebra of an affine Lie algebra were precisely the cluster variables in a cluster algebra of type A.

In recent work, we have proved that these prime representations admit a BGG type resolution and deduce a Weyl character formula for these representations. In this talk we shall discuss the corresponding closed formula for a cluster variable in terms of the initial generators $x_1, \ldots, x_n, x'_1, \ldots, x'_n$ of the cluster algebra. (Received September 13, 2017)