

BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

## W-ALGEBRAS, YANGIANS, AND TORIC CALABI-YAU THREEFOLDS

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CCDS 365, Mar 27, 2024, 4-5pm

Tea: 3:45pm in Room 365

**Abstract:** I'll recall some basics about Slodowy slices, generalized slices in the affine Grassmannian, and quantizations thereof called W-algebras and Yangians, respectively, as well as their analogues for affine Lie algebras which are naturally described using the theory of vertex algebras. Then I'll explain a construction of vertex algebras associated to divisors in toric Calabi-Yau threefolds, which include affine W-algebras in type A for arbitrary nilpotents, and outline a dictionary between the geometry of the threefolds and the representation theory of these algebras.

See <http://math.bu.edu/research/geom/seminar.html> or contact Yu-Shen Lin ([yslin@bu.edu](mailto:yslin@bu.edu)) or Brian Williams ([bwill22@bu.edu](mailto:bwill22@bu.edu)) for more information.