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Ryan E Grady* (ryan.grady1@montana.edu), **Dylan Butson**, **Brian Williams** and **Philsang Yoo**. *Algebras and modules from boundary quantum field theory*. Preliminary report.

We report on a program to study quantum observables in the BV formalism on manifolds with boundary. Such observables are described in terms of (structured) factorization algebras. In examples, several familiar representation theoretic objects are recovered, including the Kac-Moody vertex algebra, affine W -algebras, and the quantum group (as an E_3 algebra). Moreover, as the boundary observables obtain a module structure over the bulk observables, we hope to describe potentially new relationships between quantum groups and affine W -algebras. Our formalism can also be applied to certain AKSZ type theories, including the Poisson sigma model and the Courant sigma model; we will sketch these constructions if time permits. (Received August 26, 2016)