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Radmila Sazdanovic* (rsazdan@ncsu.edu), Department of Mathematics NC State University, PO Box 8205, Raleigh, NC 27695, and **Mikhail Khovanov**. *Diagrammatic categorification of the polynomial ring $\mathbb{Z}[x]$* .

We develop a diagrammatic categorification of the polynomial ring $\mathbb{Z}[x]$ that leads to categorification of some families of orthogonal polynomials including Chebyshev and Hermite polynomials. Our categorifications satisfy a version of the Bernstein-Gelfand-Gelfand reciprocity property with the indecomposable modules corresponding to the monomials and standard modules to the orthogonal polynomials in the Grothendieck ring. (Received September 17, 2019)