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**Julianna Tymoczko\***, Department of Mathematics, 14 MacLean Hall, University of Iowa, Iowa City, IA 52242. *Poset pinball and cohomology rings.*

Instead of thinking of a poset as a directed acyclic graph, we think of it as a collection of paths and chutes on a tilted board—just like a pinball machine. In poset pinball, we place traps on the poset and then drop balls from various points, letting the balls roll down the poset until they're captured by the traps. This talk will show how to play poset pinball and will describe what pinball says about equivariant cohomology rings. Then we'll identify cohomology rings for some interesting varieties, including Peterson varieties. This work is joint with M. Harada (McMaster University). (Received September 09, 2010)