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*The Conway knot is not slice*

Knots in $S^3$ are slice if they bound a smooth properly embedded disk in $B^4$. For some classes of knots it can be especially difficult to obstruct sliceness. Positive mutation is an operation taking knots to knots, and it is difficult, though generally possible, to obstruct the sliceness of a knot which is a positive mutant of a slice knot. It is also difficult, but generally possible, to obstruct the sliceness of a topologically slice knot. The Conway knot is the smallest knot which is both topologically slice and a positive mutant of a slice knot, and all sliceness invariants in the literature vanish for the Conway knot. In this talk I will use a new argument to show that the Conway knot is not slice.