1158-57-86   **Micah Chrisman*** (`chrisman.76@osu.edu`). *Milnor's concordance invariants for knots on surfaces.*

Milnor's $\bar{\mu}$-invariants for links in the 3-sphere vanish on any link concordant to a boundary link. In particular, they are are trivial for any classical knot. Here we define an analogue of Milnor's concordance invariants for knots in thickened surfaces $\Sigma \times [0,1]$, where Σ is closed and oriented. These invariants vanish on any knot concordant to a homologically trivial knot in $\Sigma \times [0,1]$. We use them to give new examples of non-slice virtual knots having trivial Rasmussen invariant, graded genus, affine index polynomial, and generalized Alexander polynomial. Moreover, we complete the slice status classification of the 2564 virtual knots having at most five classical crossings and reduce to four (of 90235) the number of virtual knots with six classical crossings having unknown slice status. Furthermore, we prove that in contrast to the classical knot concordance group, the virtual knot concordance group is not abelian. (Received February 22, 2020)