1048-57-215   **Keiko Kawamuro** and **Elena Pavelescu*** (`Elena.Pavelescu@rice.edu`), Rice University, Department of Mathematics - MS 136, 6100 S Main Street, Houston, TX 77005. *The self-linking number for braids in $L(k,1)$.* Preliminary report.

We construct an immersed surface for a braid in an annulus open book decomposition, which is a generalization of the so called Bennequin surface for a braid in $\mathbb{R}^3$. By resolving the singularities of the immersed surface, we obtain an embedded Seifert surface for the braid. We find a self-linking number formula associated to the surface and prove that it is a generalization of the Bennequin's self-linking formula for a braid in $\mathbb{R}^3$. We also prove that our self-linking formula is invariant (changes by 2) under a positive (negative) braid stabilization which preserves (changes) the transverse knot class. (Received February 08, 2009)