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Douglas J LaFountain* (d-lafountain@wiu.edu). *Botany of transverse knots*. Preliminary report.

We study transverse knot representatives of an oriented topological knot type \mathcal{K} in \mathbb{R}^3 with its tight contact structure. The classical invariant of transverse isotopy is the self-linking number sl , and as such presents both a geography and botany problem. The geography problem for transverse knots, namely what values of sl can be realized by transverse knot representatives of \mathcal{K} , was solved in principle by Bennequin: there is a maximal self-linking number $\overline{sl}(\mathcal{K})$, and all other sl -values realized are of the form $\overline{sl}(\mathcal{K}) - 2n$ for $n \in \mathbb{N}$. The botany problem for transverse knots, namely what transverse isotopy classes exist at a fixed value of sl , has remained open in general, although for certain knot types a number of interesting botanical features have been shown to exist. In this talk we present partial solutions of the botany problem that hold for arbitrary knot types \mathcal{K} . (Received January 18, 2015)