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Andrea Munaro. *Longest Path Transversals*. Preliminary report.

A *longest path transversal* in a graph G is a set of vertices S such that every longest path in G contains a vertex in S . Let $\text{lpt}(G)$ be the minimum size of a longest path transversal in G . Gallai asked whether $\text{lpt}(G) = 1$ when G is connected. The answer is no; the best known construction is due to Grünbaum (1973), giving a connected graph G with $\text{lpt}(G) = 3$. In 2014, Rautenbach and Sereni showed that $\text{lpt}(G) \leq \left\lceil \frac{n}{4} - \frac{n^{2/3}}{90} \right\rceil$ when G is an n -vertex connected graph. We show that $\text{lpt}(G) \leq O(n^{3/4})$ when G is an n -vertex connected graph. Our results also provide sublinear sets in G which intersect all maximum subdivisions of any fixed graph F . (Received January 20, 2020)