

Abstract Submitted  
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**Digging the termite way: crowding simple robots to excavate ramification structures.** PAUL BARDUNIAS, Florida Atlantic Univ — The complex ramification network that termites excavate in soil in search of resources has been shown to emerge from interactions between individuals during periodic crowding at the tips of tunnels. Excavation in these social insects is carried out by a rotation of termites removing soil from the tip of an expanding tunnel and depositing it back along the tunnel walls. Bristle bots, modified to either rock or turn on contact with soil in an artificial tunnel, were used to replicate this process. As in termites, congestion at tunnel tips leads to the widening and branching of tunnels.

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