Self-burrowing Robot
Experiment in Biogeotechnical Engineering

Is it possible to monitor the health of soil in a smart and sustainable way?
Soil is polluted by various human activities, such as industrial activity, agricultural chemicals, or improper disposal of waste. When the soil is polluted, it can hurt the native environment. The contaminant can be toxic to the plants, pollute the water supply, and eventually affect the health of humans.

Can we find a smart, efficient and natural way to monitor the condition of a soil’s health? How about using a small self-burrowing robot carrying monitoring sensors? CBBG scientists and engineers are trying to design a self-burrowing robot inspired by the razor clam in nature, to help monitor the soil health condition.

Try to build a simple burrowing robot at home!
1. Using two sets of wooden chopsticks, break off the tips to create four half inch spacers.
2. Glue the spacers between two clothes pins to create a space.
3. Join the two clothes pins together with rubber bands.
4. Use another rubber band to hold a wooden chopstick on the outer side of both clothes pins.
5. Sandwich a third chopstick between the two clothes pins, so it will slide easily.