Speaker: Anette Hosoi, MIT

Title: “Enabling small-scale hydraulics through bio-inspired design and active fluids”

Abstract:

Robots such as Boston Dynamics' BigDog have demonstrated the extraordinary capabilities and versatility of large-scale hydraulic machines. However, it is challenging to scale these systems down to table-top sized apparatuses because the hydraulic components (valves, pumps, etc.) require mechanical moving parts. As the system size decreases, manufacturing challenges increase making individual components prohibitively expensive. In this talk I will discuss our efforts to develops a toolbox of efficient, small-scale, solid state hydraulic components. In particular, we will examine modeling and prototyping of solid state pumps, diodes, and valves and discuss analogies to fluid transport in tall plants.