Instabilities to pattern and remember.

Mechanical instabilities can be used to change shape, pattern and even store information in thin sheets. In this talk I will first show how non-homogeneous actuation of electro-active polymers can trigger shape changes through buckling instabilities.

I will then introduce a class of patterned thin sheets that respond to simple 1D forcing via sequences of elastic snap-through instabilities, leading to complex- yet controlled- deformation pathways, reminiscent of memory effects.