This presentation will describe opportunities for synthetic polymers when decorated with functionality taken from or inspired by Nature, especially polar substituents such as zwitterions. Polymer zwitterions, as polar, charge neutral, and very hydrophilic macromolecules present opportunities as biomaterials, hydrogels, and drug delivery vehicles that overcome numerous limitations of materials used today. New syntheses of polymer zwitterions will highlight their benefit to a variety of functional backbones, and describe our initial efforts towards applications as prodrugs, nanoparticle carriers and transport vehicles, and droplet stabilizers. Polymer zwitterions are not restricted to aqueous applications for biology, but rather present opportunities in a variety of fields, including polymer-based electronics and solar cells. The later will be described as a new route to high efficiency devices.

Host: Chris Gorman