A primary interest in the Wooley laboratory is the production of functional polymers from renewable sources that are capable of reverting to those natural products once their purpose has been served. This holistic life cycle approach is of importance from the perspectives of sustainable sourcing of materials feedstocks, creating mechanisms for dealing with the breakdown products from polymer compositions, structures and properties at the same time that the functional performance application is defined, and also the need to address the increasing accumulation and associated hazards of plastic pollution from the environmental persistence of non-degradable polymer systems. Moreover, the inherent stereochemical and functional diversities of natural products provide opportunities to expand the scopes and complexities of polymer materials, by utilizing fundamental synthetic organic chemistry approaches.