Molecular inorganic chemistry provides insight into and solutions for some of the major scientific challenges faced by 21st century societies. This presentation will provide an overview of sustainable inorganic chemistry, with particular focus towards the design and development of new Schiff-base pyrrole ‘Pacman’ macrocycles as controlled platforms for new reactions, catalysis, and supramolecular chemistry. The efficacy of binuclear cobalt Pacman complexes as redox catalysts for the selective reduction of oxygen to water will be highlighted, and the transformation of carbon dioxide by these compounds will be described. The confined chemical space defined by these macrocycles is also exploited in new and fundamental oxo-chemistry of the uranyl dication, along with the synthesis of hydroxycubanes, size-limited through macrocyclic encapsulation.