Our research interests encompass the design of efficient enantioselective catalysts for transformations of interest, and the study of their use to prepare enantiomerically enriched products of biological, or pharmaceutical relevance. Crucial aspects of this work include modular design of the catalysts; use of versatile synthetic procedures (organic and inorganic transformations, or supramolecular processes); incorporation of regulation mechanisms for their active-site geometry; and computational study of their catalytic cycles (through collaborations). The application of our ligands in rhodium-mediated hydrogenative desymmetrizations of achiral dienes, rhodium-mediated hydrogenative kinetic resolutions of vinyl sulfoxides and supramolecularly regulated hydroformylation and metal carbene C-H insertion reactions, among other transformations, will be discussed.