Title: Catalytic Methods for Organic Synthesis

Funding agency: National Institute of General Medical Sciences

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This award is focused on the invention of new transition-metal-catalyzed reactions of carboxylic acids and the development of new catalysts for cross-couplings of high relevance to the synthesis of pharmaceuticals. The project is aimed at developing new, catalytic methods for the synthesis of biologically active compounds and providing new tools to access important pharmaceutical building blocks and chemical compounds that improve human health.

A recent study under the grant involved the development of palladium-NHC chloro dimer catalysts as the most reactive Pd(II)-NHC complexes reported to date (Zhou et al. *iScience* 2020, *23*, 101377; open-access: DOI: 10.1016/j.isci.2020.101377). These catalysts show remarkable capacity to enable carbon-carbon bond forming events in medicinal chemistry, materials science and agrochemicals.