

## Supervisor Expression of Interest MSCA-IF Marie Skłodowska Curie Action-Individual Fellowship 2020

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<b>Research Topic:</b>	Asymmetric catalysis, photochemistry, metal-mediated chemistry
<b>Brief description of the research project idea:</b>	
<p><b>Synergies between Photochemistry and Metal-mediated Catalysis</b></p> <p>Photochemistry offers fascinating and unconventional ways for making molecules that are often complementary to traditional methods proceeding via thermal pathways. This is because the use of light excitation to bring a molecule to an electronically excited state can unlock unique reaction manifolds that are unavailable to conventional ground-state pathways. The combination of the excited-state reactivity with transition metal cross-coupling catalysis will be used to develop new carbon-carbon bond forming processes not achievable under thermal control.</p> <p>The proposed research seeks to successfully merge these two catalytic platforms in order to capitalize on the strengths of each individual mode of catalysis. The aim is to provide access to currently inaccessible reaction pathways by activating common organic compounds generally recalcitrant to cross-coupling processes. We will also develop enantioselective catalytic variants of these photochemical metal-mediated processes to prepare complex chiral molecules with high stereocontrol.</p>	