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## NEW ALKENE DIFUNCTIONALIZATION REACTIONS FOR ORGANIC SYNTHESIS

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Two recently developed Pd-catalyzed alkene difunctionalization reactions will be described. The first involves the coupling of alkenes bearing pendant aryl/alkenyl triflate electrophiles with nitrogen-, oxygen-, or carbon-centered electrophiles to afford carbocyclic product. The second involves the coupling of N-allylureas or N-allylguanidines with O-acylated hydroxylamines, which act as nitrogen centered electrophiles, to afford heterocyclic alkene diamination products. Details of the development, stereocontrol, and reaction mechanisms of these transformations will be discussed.