GEORGE MASON UNIVERSITY
COLLEGE OF SCIENCE
BIOLOGY DEPARTMENT SEMINAR
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"Nicotinic receptor signaling in the developing and regenerating nervous system"

It was, until recently, accepted that nicotinic acetylcholine receptors (nAChR) respond to extracellular ligands by conducting ions through the plasma membrane. Here I describe new evidence on direct coupling between heterotrimeric G proteins and nAChRs in neural and immune cells. Based on proteomic, biophysical, and live cellular imaging experiments, I show that non-covalent rapid coupling between individual G protein subunits and the disorganized loop segments of the nAChR enable cholinergic calcium signaling responses on time scale longer than channel conduction alone. The findings underscore the existence of an evolutionarily conserved mechanism of protein-protein coupling between G proteins and cys-loop type ligand-gated ion channels in cells.

TUESDAY February 2, 2016
3:00-4:15 PM
JC Meeting Room E