Several new findings in the four, five and six quark systems reheat the interest in the field of multiquark states (beyond trivial $\bar{q}q$ and $qqq$). A lot of progress has recently been made in the $6q$ sector, on both the theoretical and experimental side. The $d^*(2380)$ hexaquark is the only multiquark state which can be produced copiously at current facilities, offering unique access to information beyond its basic quantum numbers, particularly its physical size, magnetic moment, quadrupole deformation and internal structure. Latest experiments on $d^*$ photoproduction provide new information on multiquark system dynamics.

Neutron stars are other valuable laboratories to study the fundamental properties of dense nuclear/quark matter. Neutron star mergers, such as recently observed by LIGO with both electromagnetic and gravitational wave signals, have properties which depend strongly on the Equation of State. A number of exotic possibilities have been investigated as possible degrees of freedom within neutron stars. It was recently demonstrated that hexaquarks have the potential for major impact on the properties of the dense nuclear matter in neutron stars and during neutron star mergers. It will be shown that the properties of this nucleonic matter can be constrained by precision measurements of nuclei and nuclear reactions at ground based experiments.

**TIME:** 3:45-4:45 pm, Thursday, February 22, 2018

(refreshments: 3:30 pm in the hallway)

**PLACE:** Bennhold Auditorium (room 101), Corcoran Hall, GWU

725 21st Street, NW, Washington, DC 20052

**METRO STATION:** GWU/FOGGY BOTTOM (BLUE, ORANGE & SILVER LINES)