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Dynamical Formation of Compact Object Binaries in Globular Clusters KYLE KREMER, SOURAV CHATTERJEE, CIERA-Northwestern University, CARL RODRIGUEZ, MIT, FRED RASIO, CIERA-Northwestern University — We explore the formation and evolution of binary star systems containing black holes, neutron stars, and white dwarfs in globular clusters (GC). We use Northwestern’s Cluster Monte Carlo Code, **CMC**, to build a set of 137 fully-evolved GC models that, overall, effectively match the properties of the observed GCs in the Milky Way. We explore the applications of these systems to both gravitational-wave and X-ray astronomy. We estimate that, in total, the MW GCs contain ~ 40 sources which will be detectable by the Laser Interferometer Space Antenna (*LISA*). We predict ~ 10 of these sources will be BH–BH binaries. Furthermore, we show that some of these BH–BH binaries can have signal-to-noise ratios large enough to be detectable even in GCs in the Andromeda galaxy and the Virgo cluster.

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