Genetic manipulation is a powerful technique for addressing research questions in animals. Current approaches rely upon delivering gene-editing material to eggs or embryos by microinjection. However, embryonic microinjection is very challenging and is inefficient even in optimized species. There is a critical need to develop methods for genetic manipulation that are simple, accessible for many researchers and generally compatible for a large variety of invertebrate and vertebrate species. We have developed a technology called Receptor-Mediated Ovary Transduction of Cargo, or ReMOT Control, to specifically deliver gene-editing cargo to the developing animal germline by easy injection into the circulatory system of female animals. ReMOT Control can bring the power of genetic modification technology to any model or non-model species without the need for injecting embryos, allowing any lab to use these powerful tools for their research questions. The ReMOT Control technology is being developed for arthropods, fish, birds, and mammals.