

Abstract Submitted  
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**Towards Scalar-Tensor Waveforms at Second post-Newtonian Order**<sup>1</sup> ANNA HEFFERNAN, University of Florida, RYAN LANG, Hillsdale College, CLIFFORD WILL, University of Florida — With the birth of multi-messenger gravitational wave astronomy last year, we witnessed the first gravitational wave detection of a neutron star binary. Such a system will allow definitive tests of scalar-tensor theory in the strong regime - a test which will require scalar-tensor waveforms. Due to the non-vanishing dipole radiation emitted by the scalar field, the required waveforms are currently only known to 1PN order. By calculating the scalar field and equations of motion to 3PN order we can deliver the full 2PN requisite waveforms. We report on the on-going progress of this project.

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