## Supplemental Figures and Table

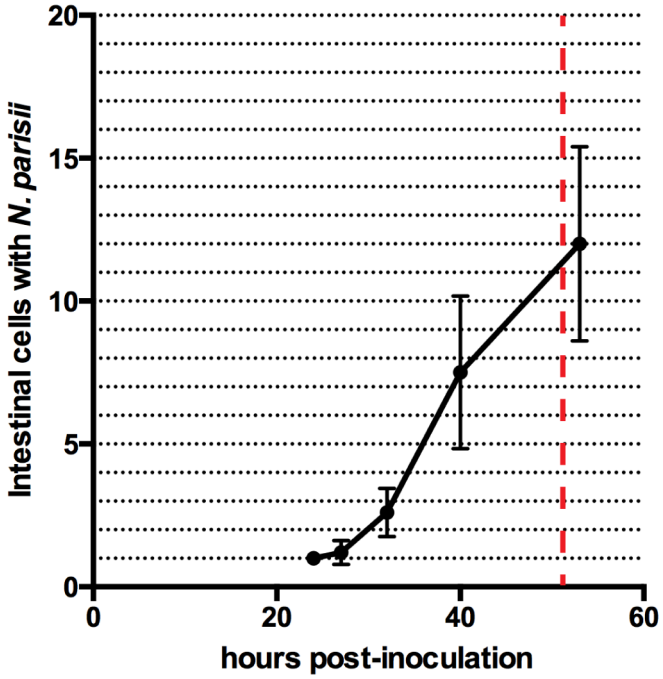


**Figure S1. Quantification of *N. parisii* spreading across host intestinal cells over time.** Transgenic GFP-labeled LET-413 animals were infected with single *N. parisii* cells and fixed at several time points to stain for infection by FISH and count the number of host intestinal cells that infection had spread to by confocal microscopy. 10 animals were counted per time point. Averages with standard deviations are plotted over time. The horizontal dashed black lines show where each of the 20 total host intestinal cells fall on the y-axis, the vertical dashed red line shows to time at which spores begin to form in some infected animals on the x-axis.

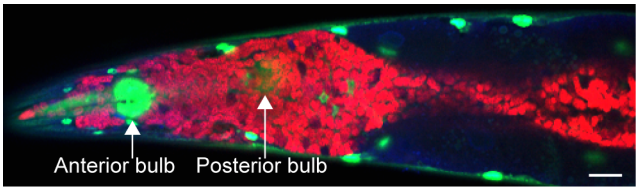


**Figure S2. *N. displodere* causes syncytia formation in the anterior hypodermal cells of *C. elegans*.** Image of a single-cell infection by *N. displodere* in a transgenic animal with GFP expressed in the cytoplasm and nuclei of muscle cells (see infection distribution for muscle measurements in TableS1). Transgenic animals were fixed and stained for DNA with DAPI (blue) and *Nematocida* rRNA with FISH (red). Infection can be seen spreading across from the hyp7 hypodermal syncytium into the anterior hypodermal cells. Hypodermal cells around and to the left of the anterior bulb in this image are normally separated from the hyp7 syncytium, which encompasses the posterior bulb and continues to the right.

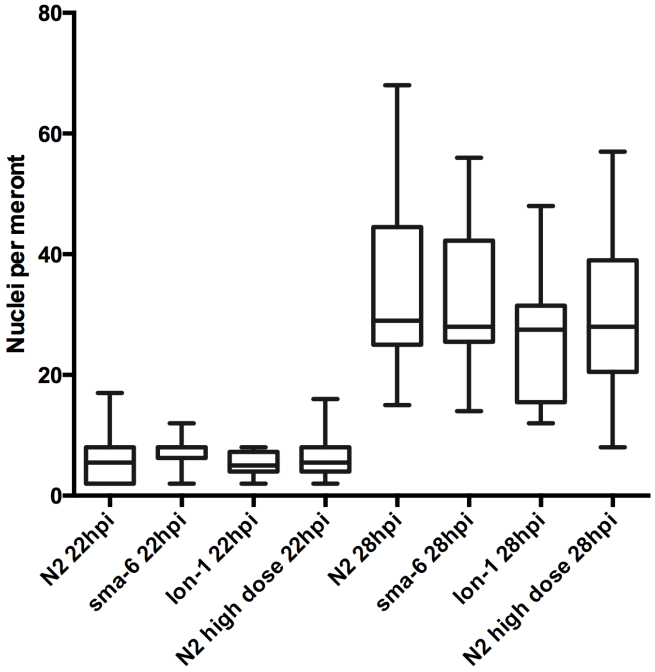


**Figure S3. Quantification of *N. parisii* growth rate in size mutants and at high multiplicity of infection.** Animals were infected with single *N. parisii* cells or an average of 5 *N. parisii* cells (N2 high dose) and fixed at 22 hpi or 28 hpi. *N. parisii* was stained by FISH, nuclei were stained with DAPI, and nuclei per meront were counted in 10 meronts per condition by confocal microscopy.

| Samples | # of animals counted | % infected with 0 | % infected with 1 | % infected with 2 | % infected with 3 | % infected with >3 |
|---|---|---|---|---|---|---|
| Figure 1 | 100 | 79 | 19 | 2 | 0 | 0 |
| Figure 3 (*N. parisii*) (intestine) | 100 | 66 | 23 | 10 | 1 | 0 |
| Figure 3 (*N.* sp.1) (intestine) | 100 | 84 | 15 | 1 | 0 | 0 |
| Figure 3 (*N. displodere*) (intestine) | 100 | 62 | 30 | 7 | 1 | 0 |
| Figure 3 (*N. displodere*) (muscle) | 100 | 86 | 13 | 1 | 0 | 0 |
| Figure 4 (*N. parisii*) | 100 | 60 | 34 | 4 | 2 | 0 |
| Figure 4 (*N.* sp. 1) | 100 | 50 | 42 | 6 | 2 | 0 |
| Figure 5A (wt) | 50 | 82 | 18 | 0 | 0 | 0 |
| Figure 5A (*sma-6*) | 50 | 80 | 20 | 0 | 0 | 0 |
| Figure 5A (*lon-1*) | 50 | 82 | 18 | 0 | 0 | 0 |
| Figure 5C (0.3x10^6) | 50 | 78 | 20 | 2 | 0 | 0 |
| Figure 5C (0.6x10^6) | 50 | 64 | 28 | 6 | 2 | 0 |
| Figure 5C (1.2x10^6) | 50 | 38 | 46 | 16 | 0 | 0 |
| Figure 5C (2.4x10^6) | 50 | 14 | 54 | 20 | 8 | 4 |
| Figure 5C (4.8x10^6) | 50 | 8 | 24 | 18 | 30 | 20 |
| Figure 5C (9.6x10^6) | 50 | 0 | 2 | 16 | 12 | 70 |

**Table S1. Quantification of infection distributions.** Measurements of the number of infections per animal across experiments.