

Fig. S1. Maximum flight speed in a wind tunnel vs. log-transformed body mass. Solid red line shows the result of a linear regression ($R^2 = 0.468$, $p = 0.0007$).

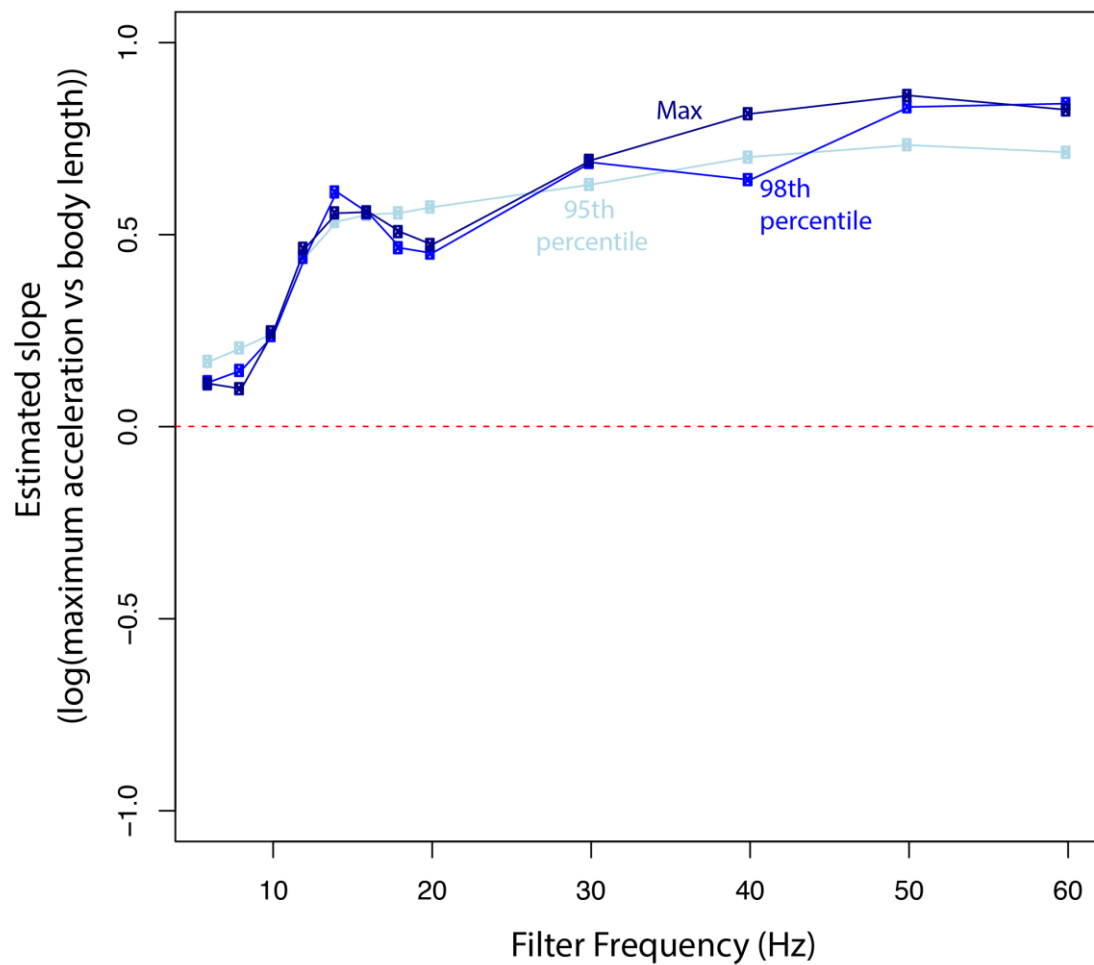


Fig. S2. (A) Slope derived from linear regression of log-transformed acceleration against body length vs. filter frequency for maximum (i.e. peak) acceleration (dark blue), 98th percentile of acceleration (medium blue), and 95th percentile (light blue). Note that the slope between these variables is positive in all cases. Red dashed indicates a slope of 0.

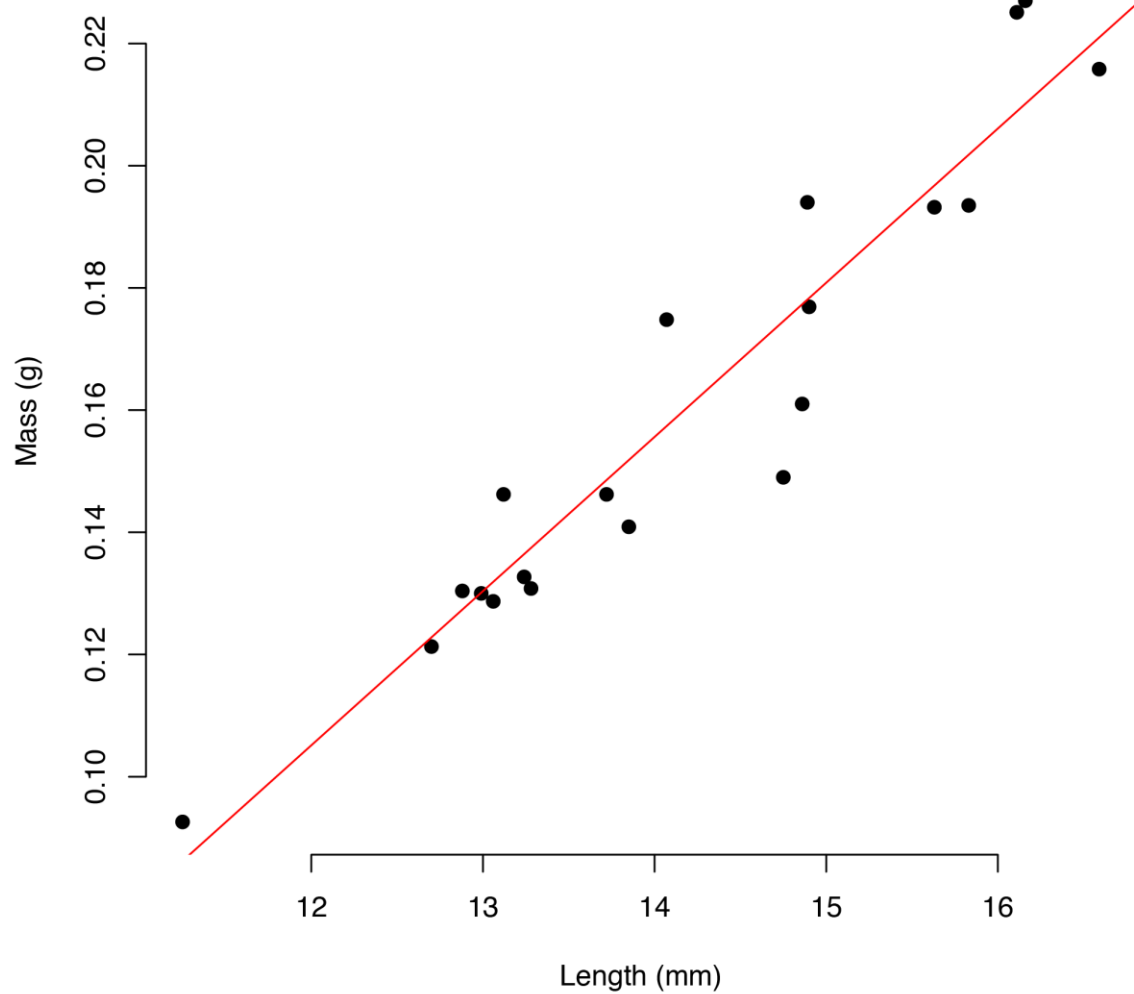


Fig. S3. Body length and body mass are strongly correlated in a random sample of 20 *B. impatiens* workers. Black dots represent individual bees, and the solid red line shows a linear regression of body mass against length ($y = -0.19 + 0.0252 \cdot x$, $p < 0.01$, $R\text{-squared} = 0.91$).

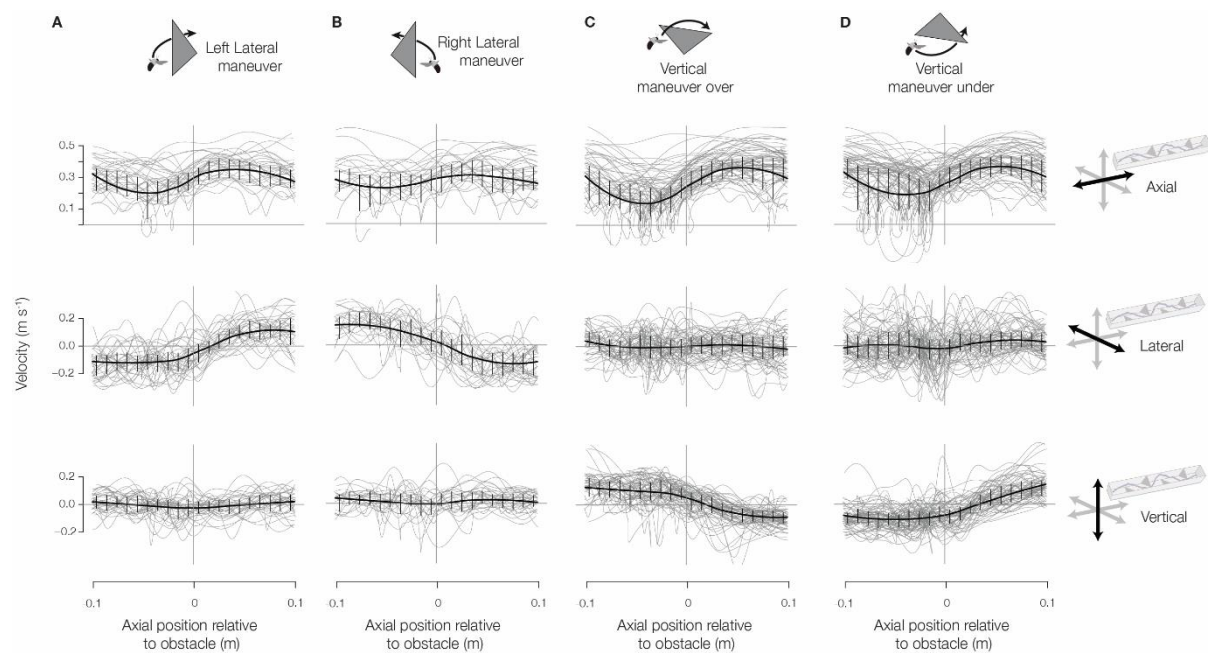


Fig. S4. Axial (top), lateral (middle) and vertical (bottom) velocity vs. position relative to the obstacle, for all four possible directions of maneuvering around an obstacle: to the left (A), to the right (B), over (C), and under (D). Flight direction is from left to right in all graphs. Grey lines represent individual flight paths, black lines represent averages across trials (from local regression smoothing), and vertical black bars show the interquartile range for data spatially binned in 1-cm increments.

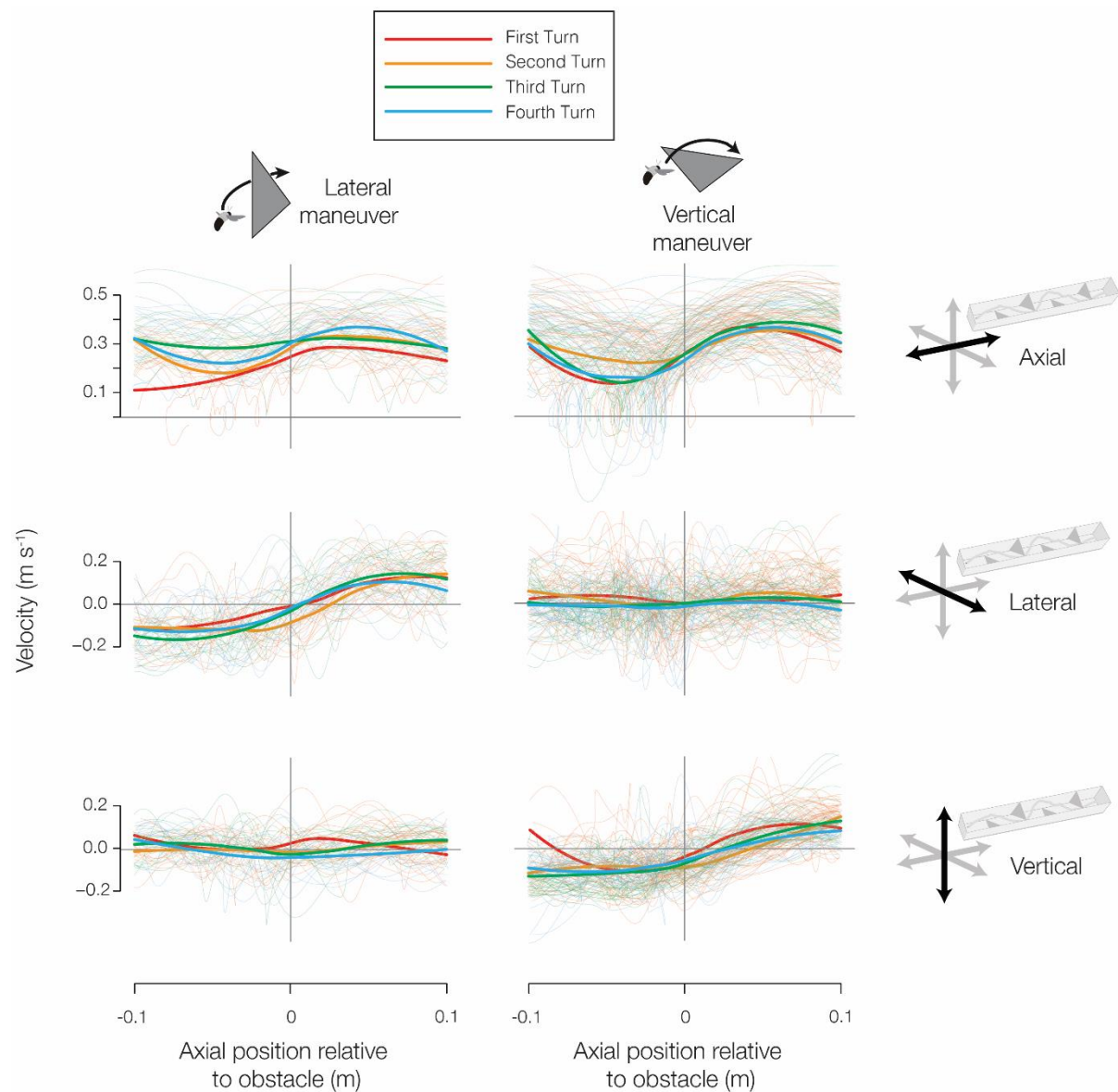


Fig. S5. Axial (top), lateral (middle), and vertical (bottom) velocity vs. position relative to the obstacle, with obstacles separated by the order in which they were encountered. Red, orange, green, and blue lines represent maneuvers performed to avoid the first, second, third, and fourth obstacles encountered during a given trial. Thickened lines show average velocity vs. position (from local regression smoothing) for each turn, and thin transparent lines show individual traces.