A bumper system for reducing injury to a pedestrian struck by an automotive vehicle by lessening the likelihood of pedestrian knee joint damage or underbody entrapment while minimizing the point load applied to the lower leg. The bumper assembly includes a bumper beam having a front surface, cushioning material such as energy absorbent high-density foam disposed on the front surface of the bumper beam, and a pedestrian protection leg spoiler secured to the bumper beam and extending downwardly and forwardly therefrom to position the leading edge of the leg spoiler below the cushioning material. The cushioning material absorbs energy of the initial impact with the leg in the vicinity of the knee, and the leg spoiler contacts the leg at a lower position. The leg spoiler has stiffness characteristics such that the impact load applied by the leg to the leading edge causes the leg spoiler to bend rearward in the manner of a cantilever beam. As it bends, the leg spoiler absorbs the impact load until reaching a maximum deflection, whereupon the leg spoiler sweeps the lower leg in the direction of vehicle travel to prevent pedestrian underbody entrapment. The bumper assembly further includes an aerodynamic fascia disposed in front of the leg spoiler to improve the airflow around the bumper assembly. The fascia may also cover the front of the cushioning material and may include a grille.

11 Claims, 3 Drawing Sheets