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Newton's 1665 theory of gravity explained why an apple is attracted to the center of the Earth, and why the Earth is attracted to the Sun. It wasn't until 1798 that Henry Cavendish showed that two bowling balls in the laboratory will also be drawn together according to Newton's universal inverse square law. In modern times, precision tests of the gravitational inverse-square law have covered inter-mass separations from centimeters out to about one light-year, but until very recently we had almost no information about gravity at shorter distances. New experiments using methods from classical gravitation, low temperature physics, and surface science are now seeking novel fundamental forces that might exist over the whole mesoscopic<sup>1</sup> range, from centimeters to nanometers. In this talk I will review our knowledge of gravity at short distances, survey current experiments, and summarize recent results, including those from our laboratory.