1077-11-1295   **Wei Ho***, Columbia University, Dept. of Mathematics, New York, NY 10027. *Some Explicit Moduli Spaces of Elliptic Curves and Generalizations.* Preliminary report.

We give a survey of results and work-in-progress on explicit descriptions of certain moduli spaces related to elliptic curves, abelian varieties, and higher-dimensional Calabi-Yau varieties. In each case, the appropriate geometric objects (over arbitrary base fields) may be parametrized by orbits of representations of algebraic groups. In particular, understanding the rational points of these moduli spaces leads to arithmetic applications. (Received September 19, 2011)