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R. Daniel Mauldin* (mauldin@unt.edu), Mathematics Department, University of North Texas,
Box 311430, Denton, TX 76203. *Unique Representations of Families of Sets.*

Given a family F of Borel sets in a Polish space X , we consider the problem of the existence of a Borel set B in the product of X with another Polish space Y such that each element of F occurs exactly once as a Y -section of B . Such a Borel set is said to uniquely represent F . If every Y -section of B is an element of F , then B is said to be uniquely universal for F . We study the existence of such sets for the family of (a) countable, (b) countable unions of compact sets or (c) countable unions of closed subsets of X . If time permits, other families will be mentioned. This is joint work with Su Gao, Steve Jackson and Miklos Laczkovich. (Received September 19, 2005)