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Eric W Weisstein* (eww@wolfram.com) and **Michael Trott** (mtrott@wolfram.com), Wolfram Research, 100 Trade Center Drive, Champaign, IL 61820. *Recent developments in computable mathematical data: Special functions, function spaces, and the semantic representation of mathematics using Mathematica and Wolfram|Alpha.*

We report on recent developments in the collection, representation, and exposure of mathematical structures in Mathematica and Wolfram|Alpha. Firstly, we present an enhancement and extension of the substantial body of special function identities originally collected on the Wolfram Functions Site. A greatly augmented set of identities (including a number of new functions) has now been integrated into Mathematica V10.3 as `MathematicalFunctionData`, making finding and working with identities involving more than 300 special functions easier than ever before. Secondly, we discuss a compendium of more than 150 named function spaces we have recently collected, curated, and computationally exposed to Wolfram|Alpha (and Mathematica). This collection represents the most comprehensive catalog of function spaces and their properties in existence. It also provides a testbed of “real” mathematical objects possessing nontrivial properties and relations which is useful to the much larger ultimate goal of designing and implementing a semantic language capable of representing all of mathematics. This larger goal is one important part of the creation of a world heritage digital mathematics library and an area of particular interest and current development at Wolfram Research. (Received September 17, 2015)