1145-D1-1648   **Maureen T. Carroll** and **Elyn Rykken*** (`elrykken@muhlenberg.edu`). *Geometry mined from architectural design.*

As an author and high-school mathematics teacher in the early twentieth century, Mabel Sykes had a passion for mathematics that continues to reveal itself through her books on geometry and algebra, and her articles on pedagogy. In her 1912 *Source Book of Problems for Geometry*, she uses complex and beautiful architectural designs, in her own words, "the best in historic ornament," as her inspiration for exercises on proof, construction and computation techniques. As she writes in the preface to this volume, "Geometry gives, as no other subject can give, an appreciation of form as it exists in the material world." In over 1800 exercises, Sykes analyzes geometric patterns found in tile and parquet floor designs, mosaics, Gothic windows, trusses and arches. In this talk, we discuss how to incorporate these beautiful designs and the accompanying exercises into introductory and advanced geometry courses. (Received September 23, 2018)