

1125-C1-2606      **Hyman Bass\*** (hybass@umich.edu), 610 E. University, 4124 School of Education, Ann Arbor, MI 48109-1259. *Many Incarnations of Pascal*. Preliminary report.

I present examples of two novel ways that combinatorial ideas might productively enter the undergraduate, or even high school curriculum. The first is based on a more general idea, intended to simulate an aspect of theory-building practices in mathematics. To this end, students are presented with a variety of apparently quite different problems. They are asked to not only solve the problems, but to identify and articulate some mathematical structure that they can demonstrate is fundamentally involved in each of the problems. I provide a particular, combinatorially based problem set, which was produced for use in such a designed activity. The second, quite different design, is a treatment of discrete calculus based on the binomial polynomials, “x-choose-d” =  $x(x-1)\cdots(x-d+1)/d!$ . This provides a compact and coherent mathematical unit that is not only a discrete analogue of calculus, but it also incorporates some substantial doses of algebra, and has several interesting applications. I will present the developmental sequence for this unit (Received September 20, 2016)