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Michael C. Reed* (reed@math.duke.edu), 120 Science Drive, Campus box 90320, Durham, NC 27708-0320. *Sex differences in metabolism.*

James Donaldson's deep and booming laughter, filled with intelligence, good will, humor, and love of life has reverberated in my head since we became friends in the 1970s. I will comment on his many contributions to mathematics, to Howard University, and to humanity. And then, in his honor, I will discuss recent research that I believe he would like. We do not think of the liver as a sex organ, but men and women in the child-bearing years have very different livers. Many enzymes in one-carbon metabolism are upregulated or downregulated by the sex hormones and, as a consequence, concentrations and biochemical reaction velocities are different in men and women. Mathematical modeling has given new understanding of these phenomena, and the underlying evolutionary reasons. For example, we now understand why homocysteine, the major biochemical marker for cardio-vascular disease, is lower in women. Thus, investigation of sex differences in metabolism is important for precision medicine. (Received September 14, 2020)