In recent years, an increasing number of undergraduate students in mathematics have been engaging in research activities with faculty mentors. I will discuss a student-driven approach to undergraduate research mentoring, i.e., an approach where the student is allowed a significant level of autonomy in choosing a research topic and driving the research forward. Using two examples of research projects I have conducted with my own undergraduate students as anecdotes, I will discuss some pros and cons of a student-driven approach. In particular, I will weigh the increased demand in time and effort on the part of the mentor against the possible benefits to the student. I will also discuss the adjustments in expectations that may be necessary to achieve a successful student-driven research experience. (Received September 03, 2019)