For most faculty, graduate school prepares us in mathematics and exposes us to mathematics research. While this is necessary and the main purpose of a graduate degree, for the many of us that end up with careers in academia, it might not be sufficient. In this talk, we will talk about an aspect of academic life often left as an exercise to the reader: directing student in research projects. The talk will motivate research as a tool to engage students of all levels (from middle school to undergraduates) and of all different backgrounds. We will discuss how research can be used to attract populations underrepresented in mathematics and we will provide many examples of different projects. We will end by discussing some issues that might arise when directing students and some advice that might help with this task. (Received September 11, 2018)