1035-97-420 **Duane M Broline**, Department of Math&CS, Eastern Illinois University, 600 Lincoln Ave, Charleston, IL 61920-3099, and **Evgeny I Gordon*** (yigordon@eiu.edu), Department of Math&CS, Eastern Illinois University, 600 Lincoln Ave, Charleston, IL 61920-3099. *Some topics for undergraduate research using computer algebra systems.*

We will share our experience of involving junior and senior level students in mathematics research. Our work involved the use of a CAS (Maple) in the investigation of the dependence of parameters of solutions of some algebraic equations and systems. We placed the emphasis on the case of irrational singular or bifurcation values of parameters. In this case one has to use only rational approximations of these values, which are not singular, in numerical solutions. The CAS allowed one to simultaneously consider the analytic and numerical solutions. Some interesting effects for linear systems of three equations with three unknowns depending on two parameters were discovered. In order to separate the real roots of the equations in this investigation, we implemented A. Khovansky's theorem. First results were published in our joint paper with the students B. Heller and J. Murray (PRIMUS, XVII(3): 256-267, 2007). Some other problems for undergraduate research will be discussed. (Received September 06, 2007)