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**Sepideh Khavari, Tara Sansom, Bradley Slabe, Jonathan Caguiat and George T Yates\*** (gyates@ysu.edu), Department of Mathematics & Statistics, Youngstown State University, One University Plaza, Youngstown, OH 44555. *Cross Disciplinary Research by Undergraduates in Mathematics and Biology to Examine Cellular Processes.*

A program in Mathematical Biology and Undergraduate Research (MBUR) at Youngstown State University teams biology and mathematics student to conduct genuine research under the mentorship of faculty members in mathematics and in biology. Three or four teams are selected each year to conduct research projects. The program uses a combination of courses, intensive summer research and sustained involvement to educate and motivate the students. Students presented their findings at local, regional and national meetings. A regional conference in mathematical biology was initiated and an interdisciplinary minor in biomathematics was developed. Existing courses were modified and new courses developed. During 2011 student research projects included (1) mathematical modeling and analysis of the growth and butanol production of *Clostridium beijerinckii*, (2) examination of the cellular breakdown of toxins and the proteins involved in the selenite resistance of *Stenotrophomonas maltophilia* ORO2 and (3) the tachykinin modulation of prefrontal cortex neuronal activity in hamsters. The program was funded by NSF grant DBI-0827205. (Received September 21, 2011)