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**Ayse Sahin\***, ayse.sahin@wright.edu, **Deborah Hughes Hallett**, dhh@math.arizona.edu, and **Rob Indik**, iindik@math.arizona.edu. *Systems of Differential Equations with Covid-19 Data: From Classroom to REU*. Preliminary report.

The accessibility of up to date data for the spread of Covid-19 allows undergraduates at all levels to engage with systems of differential equations. Students with little technical background can successfully build and interpret an SIR model for the spread of Covid-19. Using software, they can model the impact of social distancing, drug treatments, vaccination, and see under what circumstances the disease dies out, the population reaches herd immunity, or has a second wave.

Advanced undergraduate summer research students at Wright State University were able to access and make progress on questions motivated by current research. Motivated by recent work of Lega, they investigated the appropriate modification of the SIR model that would result in logistic growth of the cumulative number of infections. (Received September 13, 2020)