

**Dr. James Girard Summer Undergraduate Research Program
Faculty Mentor – Project Application**

Faculty Name: Holly Snyder

Department: Biology

Research Project Title: Cloning, expression and purification of *Taq* DNA polymerase

Research Project Abstract (Please provide an overview of your project -- this will be shared with students as a project description; maximum 250 words):

The S.U.R.E student will assist in the development of protocols/modules for a molecular based workshop for high school students. The workshop will be proposed to take place in the summer of 2021 and will cover an area of biology that is taught in most high school classrooms as reading-intensive subject matter supplemented by a few “dry labs”. I am also considering using this as a workshop in the near future for high school teachers to earn a certificate for professional development. The aim of the project is to produce active *Taq* DNA polymerase in *Escherichia coli* that is equivalent in activity to commercial *Taq* DNA polymerase. The S.U.R.E. student will be performing primer design, PCR, molecular cloning and protein analysis; we will be following protocols that have been developed for use in the undergraduate biology lab. Having the student researcher carry out this project will allow me to determine protocols that will need to be modified, the time line for the workshop and the development of teaching materials