

SCIENCE, DISCOVERY AND THE UNIVERSE

Sophomore Capstone Project Advice

As with all College Park Scholars programs, SDU requires a “capstone project” as part of the sophomore year. For SDU, it lasts the whole year and constitutes 60% of your grade: the expectation is that you will spend an average of 6 hours per week at your project. This is in addition to the SDU colloquium every 2 weeks which makes up the rest of your grade.

There are four basic options:

1. A research internship/project (CPSP 239D): e.g., engineering offers a lot of possibilities in which you will join a research group and participate in a project.
2. A service-learning project (CPSP 249D), such as tutoring or mentoring.
3. A webship class (CPSP 229D), limited to 20 students, in which web programming is taught.
4. College Park Scholars also offers a “Discovery Research” colloquium (CPSP 318) which introduces techniques of individual research.

As part of the “capstone” experience, every SDU student is required to present a poster on their experience at the Academic Showcase at the end of sophomore year.

Advice

- The first thing to do is go to the secretary of the department representing your major and ask if there are any faculty looking for help with research, paid or unpaid. Such a project gives you direct experience in your field of work, and contacts in your field that can give you job references.
- The University has an Undergraduate Research Assistant Program that is a clearing-house for research opportunities on campus: see <http://www.ugresearch.umd.edu/programs.html>.
- College Park Scholars is involved in “Civic Engagement” programs that qualify, such as tutoring: e.g., the “Lakeland Stars” program works in a local elementary school. See <http://www.scholars.umd.edu/civic/>. The Discovery research program is also described there.
- There are other tutoring opportunities available, in particular the GEMS program mentoring girls in math and science in a local middle school: (see <http://www.cmps.umd.edu/stand/pdf/GEMS%20UG%20Mentor%20App.pdf>) and “America Reads, America Counts” (<http://www.arac.umd.edu/>).

- An opportunity specific to SDU is the “Explore the Universe” program at the University of Maryland Observatory, which is a combination of astronomy activities and mentoring for local high school students (see <http://www.astro.umd.edu/openhouse/programs/index.html>), run by the Observatory manager Elizabeth Warner.
- The webship class (CPSP 229D) is different from the other options in that it is more like a regular class (meets in a classroom at regular hours); but it is also graded like a regular class, so in fact it is harder to get an “A” than with an internship.
- the UMd Career Center maintains an internship page at http://www.careercenter.umd.edu/student/intern/intern_main.asp with links to likely places on campus. Most of the student organizations aren’t suitable because there is no faculty mentor, but some of them have a faculty mentor.
- The UMd Community Service page has a number of options that will work as service–learning projects: <http://www.csl.umd.edu/students/index.html>. You probably want to talk to someone about what the options are: remember that we are looking for the equivalent of 6 hours or so a week (but we are willing to be liberal on counting hours).
- For those interested in physical sciences, being in College Park has the advantage that a wide range of the world’s best research facilities are within easy access, and many of them offer internship opportunities at the forefront of scientific research, e.g., NASA’s Goddard Space Flight Center, National Institute of Science and Technology, Johns Hopkins Applied Physics Lab, Naval Research Laboratory, Space Telescope Science Institute, in addition to UMCP’s own laboratories. Positions are available both year–round and as summer internships.
- A number of students do summer internships that we accept in lieu of the Fall project activity (note that a lot of the summer programs have February deadlines). We have also accepted summer–camp work as service–learning activity. However, if you choose this route, you will need to arrange a different effort in mid–year for your Spring semester commitment. **If you wish to use a summer internship as your Fall capstone effort, you must get permission from us before the summer begins.**

We require that you fill out a project agreement form and get it signed by your sponsor. In addition, monthly progress report forms are required.

We recommend that you try to line up your project as early as possible, to avoid last–minute problems. If you are at all in doubt that something will qualify, come and discuss it with us.

Stephen White and Alan Peel