List of research opportunities

1   Preface, and a warning

Throughout my four years, I didn't do that much research (mostly because I was rejected from most of the programs I applied too...), so don't feel pressured to start super early. At the high school level, it's basically impossible to make substantial and original contributions in STEM research, unless your name is Luke Robitaille and you're working in combinatorics. Attending X research camp is thus a relatively meaningless achievement outside of college applications. Nonetheless, research camps can be a very enriching experience if you're interested in getting to know the life of an academic researcher, or in making friends who geek out at the same stuff you do.

In the following section, I've compiled a list of camps and research opportunities, in increasing order of selectiveness and "prestige." Again, "prestige" means essentially nothing - the value you get from a given internship or camp is a function of your interest in your work, the effort you put in, and the people you meet. The most selective camps will have an application process, very similar to that of the college applications process. You will have to submit transcripts, letters of recommendations, and even write essays. If nothing else, applying for selective camps is good emotional preparation for the college process, as it gets you used to spending alot of time and energy on an annoying, bureaucratic process, only to be rejected anyway.

This is not at all to dissaude you from applying to SSP or RSI. Getting into a selective STEM camp is a monumental achievement, and can significantly boost your odds in the college admissions process, or give you valuable insight into the research experience. But don't make it your life to go to a selective camp. There are plenty of ways to show engagement with STEM in a meaningful way outside of school, and camps are only one of them.

2   List of research internships or camps

In order of ascending selectiveness:

1. Cooperative Institute for Satellite Earth System Studies (CISESS)

   - This is a paid ($20/hr) climate science internship through the University of Maryland which matches high schoolers and undergrads with mentors from NOAA. You can see some of the old projects on their website - alot of them involve the intersection of climate science and machine learning, or data science. Applications are relatively easy, only requiring the submission of a resume.

2. MathILy

   - A moderately selective math program for bright high school students. Consists of many courses meant to hone students' problem solving skills in a variety of subjects like Origami, graph theory, and linear algebra.

3. Secondary Student Training Program (SSTP)

   - A selective summer research program located in Iowa meant to cultivate research skills for future scientists. Students get to work with University of Iowa's brightest researchers. Applications require two long essays.

4. International Summer School for Young Physicists (ISSYP)

   - A selective, two-week, intensive summer program located in Perimeter Institute. Involves taking intensive classes on cool subjects in physics like quantum mechanics and particle physics. Applications require an essay.

5. Minority Introduction To Engineering and Science (MITES)

   - A great option if you are a minority or a member of an underserved community interested in STEM. Looks especially nice if you are applying to MIT. Applications require the whole gambit of transcript, test scores, ECs, essays, ...

6. Program in Mathematics for Young Students (PROMYS)

   - Another highly selective pure math camp, this time focused on competition mathematics. Students take extremely demanding, proof-based courses in number theory, topology, group theory, and other interesting subjects. Applications require everything.

7. Summer Science Program (SSP)

   - A very selective summer "research" program that offers programs in genomics, astrophysics, and biochemistry. Applications require several short essays. They admit essentially zero people off their waitlist.

8. Research Science Institute (RSI)

   - The most prestigious and highfalutin of them all. Applications are ridiculously competitive, with around a 5% acceptance rate. They also require your PSAT, SAT, ACT, **and** AP scores, in addition to your high school transcript, two letters of recommendation, and several essays. In return for your troubles, accepted applicants are essentially locks for Ivy League universities **of their choice**. Good luck if you are interested.