

INTENDED AUDIENCE

The 19th annual Summer Science Camps program is primarily intended for high school sophomores, juniors and seniors interested in learning more about modern science. Students do not have to be science majors to attend, but those who have taken several science courses will gain the most from this program. Students will be primarily selected from the local Michigan and surrounding tri-state area, but students nationwide are also accepted.

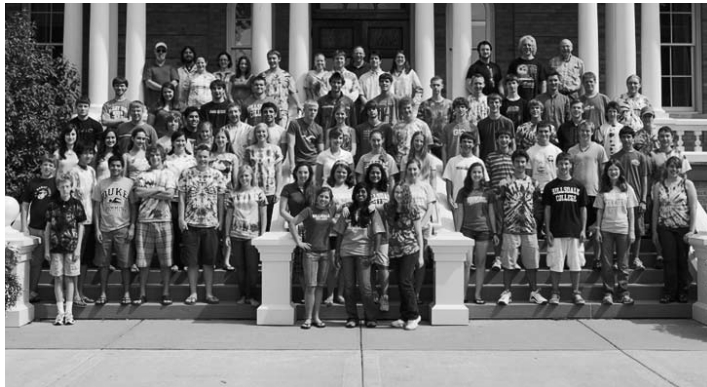
PURPOSE

The science camps seek to promote scientific literacy among high school students. These camps are designed to instill a deeper appreciation of what science is all about, the idea that science can be challenging as well as fun, and that science is both exciting and practical. Having attended a camp, students will come away with the view that today's science is an interdisciplinary and cooperative endeavor. Hopefully, many will want to pursue careers in science and choose to major in one of these fields in college.

CONTENT

Molecular Biology Camp

Molecular Biology is a very exciting area of science to explore. Most students have heard of genetic engineering, and this camp will allow students to gain firsthand knowledge by doing actual experiments in this field. The camp will be comprised of lectures and laboratories in an intensive hands-on format that will allow ample time for discussions and analyses of experimental results and procedures. Topics to be covered include: DNA/RNA chemistry, gene cloning, genetic engineering, manipulation of bacteria, bacterial transformation, isolation of plasmid and recombinant DNA, restriction analysis of DNA, agarose gel electrophoresis, hybridization, DNA sequencing, and DNA fingerprinting.



2008 Summer Science Camps

Chemistry and Physics Camp

The physical sciences lay the foundation for the life sciences as well as help prepare students for careers in physics, chemistry and engineering. In addition, physics and chemistry are important in understanding polymers and in the growing areas of biophysics and biochemistry. This intensive weeklong camp will emphasize a hands-on laboratory experience as well. Students attending this camp will explore the following topics: chemical dyes, chromatography, spectroscopy, polymers, holography, superconductivity, X-ray diffraction, and thermodynamics. The student will also take home some of the laboratory projects done in this camp.

Mathematics Camp

Mathematics has applications to many aspects of everyday life. Previous camps have explored the use of mathematics in cryptology (codes), probability, symmetry, and the fourth dimension. Activities have included making and cracking codes, experimental estimation of Pi, and analyzing games of chance. In addition, students will learn HTML programming on the 25 Power Macintosh computers in the Eaton Computer Lab, which is housed in the state-of-the-art Herbert Henry Dow Science facility.

ITINERARY

Sunday, June 21

- 2:00 p.m. Registration, Room Assignments
- 3:00 p.m. Campus Tour
- 5:15 p.m. Dinner
- 6:30 p.m. Introduction to Faculty/Program

Monday-Thursday, June 22-25

- 7:45 a.m. Breakfast
- 9:00 a.m. Lecture/Laboratory
- 10:30 a.m. Break
- 12:00 p.m. Lunch
- 1:00 p.m. Lecture/Laboratory
- 3:00 p.m. Break
- 3:30 p.m. Lecture/Laboratory
- 5:00 p.m. Dinner
- 5:30 p.m. Free Time
- 7:30 p.m. Lecture/Laboratory

Friday, June 26

- 7:45 a.m. Breakfast
- 9:00 a.m. Lecture/Laboratory
- 12:00 p.m. Closing Luncheon
- 1:00 p.m. Examination for Optional 1 Hr. College Credit

FACULTY

Dr. Francis Steiner, professor and chairman of biology at Hillsdale College, will instruct the Molecular Biology Camp. The Chemistry and Physics Camp will be conducted by Dr. Lee Ann Baron, professor of chemistry, and Dr. Ken Hayes, professor of physics. The Mathematics Camp will be taught by associate professor of computer science Dr. Rein Zeller and by assistant mathematics professors, Dr. Tom Treloar and Dr. David Murphy. Additional staff will include Dr. Jim Peters and Dr. Mark Nussbaum of the science faculty and student laboratory assistants.

COST/HOUSING/MEALS

A grant from the Donald L. Murdock Foundation will provide tuition, books, lodging and meals. Upon registering by mail, each participant will receive a list of what to bring and other details. Students will stay on campus during the camp, and house directors will be on duty. Free time will be provided each day for use of the Health Education and Sports Complex, as well as other college facilities.

LOCATION

Hillsdale College, founded in 1844, is an independent, coeducational, residential liberal arts college of 1,300 students. In its 165 years of existence, the College has never accepted federal taxpayer subsidies for its operations. Located off M-99 in the southern Michigan city of Hillsdale, it lies approximately 90 minutes away from Toledo, Lansing, Fort Wayne and Kalamazoo and is about a two-hour drive from Detroit. It is easily accessible via the interstate highway system and is located in the north part of the city of Hillsdale.

REGISTRATION

Registration will be limited to the first 20 applicants for each camp. A \$100 deposit and a letter of recommendation are required by April 1, 2009. In addition, the option of obtaining college credit for each camp is available upon passing an exam given on the last day of the program. Availability is on a first-come first-serve basis.

FOR ADDITIONAL INFORMATION, PLEASE CONTACT

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