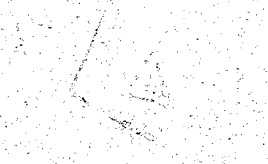
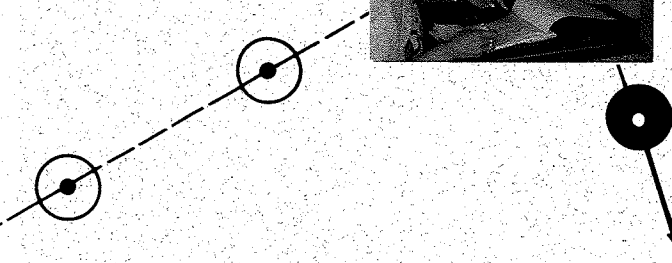


Participating School Districts:

Fort Osage
Independence
Kansas City, Mo.



"MPI has enabled me to excel in later courses because it gave me confidence to follow a more difficult and substantive degree than I otherwise would have."



"I've never really had to study for anything before; it's helping me prepare for college."

$$L = L_o (1 + \alpha \Delta T)$$

Eligibility

If you attend a designated high school in a participating district, you may be eligible to attend the MPI. If you are interested in attending, talk to your school counselor and determine whether you meet these requirements.

You are eligible if you

- are a senior
- have taken two years of algebra through advanced algebra, one year of plane geometry and one semester of trigonometry, which may be taken concurrently
- obtain a satisfactory score on the Mathematics Association of America Calculus Readiness Test, administered in the spring of your junior year (Transfer students or those taking mathematics courses in the summer may take the test in August.)
- are highly motivated and willing to make a significant time commitment to studying

(Exceptions to the eligibility criteria will be considered, and may be granted upon approval of the Director.)

"MPI has been a terrific experience and I am proud to be a part of it."

Study the works of

Descartes	Bernoulli
Newton	Pascal
Leibniz	Riemann
Einstein	

Benefits

The Mathematics and Physics Institute offers a first-class alternative learning experience; you'll gain immeasurably when you choose to participate in the MPI.

In this exciting and unique program, you will

- earn college credit (up to 12 hours) while still in high school, at no charge
- interact with talented peers from other schools
- benefit from a low student-teacher ratio (one to two instructors in each course)
- meet leaders in science from universities, industry and national programs such as NASA
- develop crucial learning and study skills needed in college
- feel the shock of college-level courses before enrolling full time
- be eligible for one of five UMKC Chancellor's Tuition Award scholarships available only to MPI students
- feel special

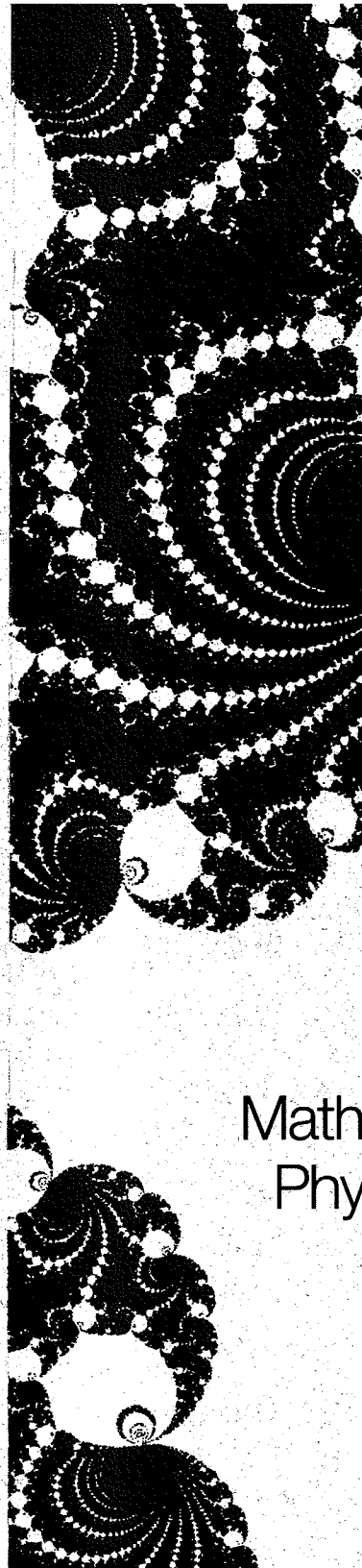
Information About the Mathematics and Physics Institute

Contact a staff member at (816) 235-1272, or write or visit:

The Mathematics and Physics Institute
UMKC - Truman Campus
600 W. Mechanic
Independence, MO 64050



University of Missouri-Kansas City
5100 Rockhill Road
Kansas City, MO 64110-2499



Math
Phy



Mathematics and
Physics Institute

M π

A program for
talented high
school seniors

The Challenge

How would you like to experience college-level courses — at no charge — while you're still in high school? Not only is the Mathematics and Physics Institute at the University of Missouri-Kansas City free, it also can help you gain valuable study skills that will benefit you in all of your coursework — not just math and physics.

The Mathematics and Physics Institute was designed with the talented student in mind. It was established in September 1984 to provide high school seniors with more intensive instruction in these two subjects. A cooperative effort of the University of Missouri-Kansas City and three local school districts — Fort Osage, Independence, and Kansas City, Mo. — the MPI was made possible with help from the Hall Family Foundation and the Carrie J. Loose Trust.

"I learned not to give up."

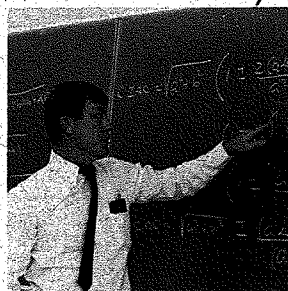


$$E_k = \frac{1}{2}mv^2$$

"The fact that MPI is made up of students from many schools is one of the best things about it."

$$F_{net} = ma$$

"The quality of teaching at the MPI is superb."



On cover: Self-squared Peano Dragon Fractal

Program

The program starts after Labor Day and continues to mid-May. You begin MPI classes at 7 a.m. and return to your high school at 8:45 a.m. Courses now taught at the MPI are Calculus I, Calculus II and General Physics I. These are offered for both college and high school credit and are identical in content and expectations to regular university courses. The classes are taught by university faculty and high school instructors from the participating districts. Lecture, problem solving, laboratory and enrichment sessions, along with field trips and special projects, become multiple avenues for learning at the college level.

Lectures

Learning through lectures and demonstrations means you'll sharpen your listening and note-taking skills. The Calculus I - II sequence has four days of lecture per week, while the yearlong Calculus I and Physics I courses average two days of lecture each week.

Problem Solving

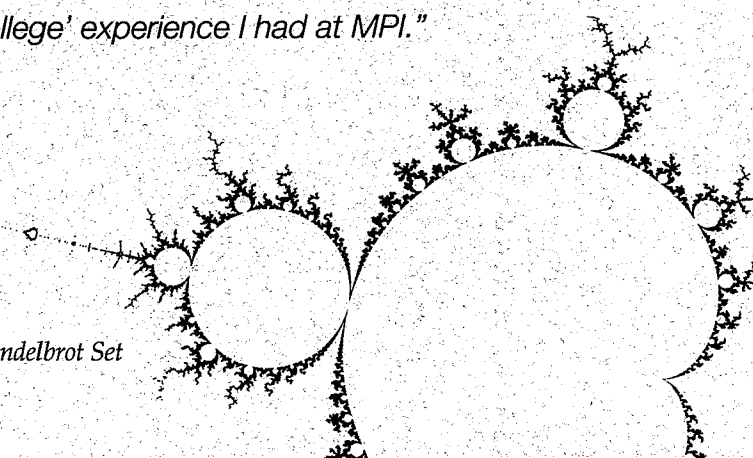
Problem-solving sessions are another important component of the program. During these one-hour sessions, twice a week, in the yearlong Calculus I and General Physics I classes you will work problems in groups in the presence of one or two instructors. You are encouraged to discuss problems with each other and to analyze your reasoning strategies.

$$\int \frac{1}{x} dx = \ln |x| + C$$



"I could not have succeeded on a campus of 37,000 students had it not been for the 'small college' experience I had at MPI."

The Mandelbrot Set



Laboratory

In physics and calculus, an understanding is "discovered" through a "hands-on" process, and laboratory equipment allows students to measure, then draw conclusions about phenomena you have observed. This is aided by the use of well-known computer lab to likewise discover phenomena.

Enrichment Program

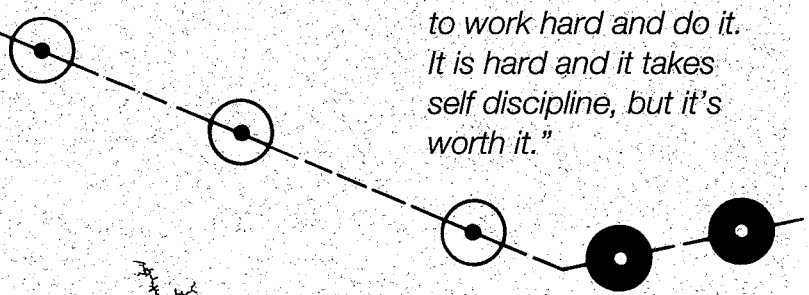
A unique part of the Mathematics and Physics Institute is the biweekly enrichment program, which features presentations by scientists and engineers from industrial communities. A variety of topics have been addressed MPI students have met mathematicians, physicians, meteorologists, university faculty and more. Students also have the opportunity to experience first-hand how scientific concepts are used in the world around us.

Laboratory

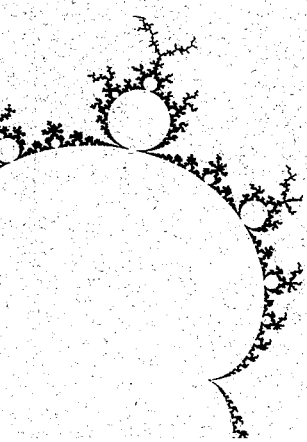
In physics and calculus, an essential ingredient for understanding is "discovery." Learning physics is a "hands-on" process, and lab experiments using state-of-the-art equipment allow you to observe and measure, then draw conclusions about the physical phenomena you have observed. Learning calculus is aided by the use of well-known calculus software in a computer lab to likewise discover mathematical phenomena.

Enrichment Program

A unique part of the Mathematics and Physics Institute is the biweekly enrichment period, which features presentations by experts in the scientific and industrial communities. Among those who have addressed MPI students have been engineers, mathematicians, physicians, meteorologists, Nobel laureates, university faculty and business people. You'll also have the opportunity to attend field trips and experience first-hand how mathematics and physics are used in the world around you.



*"Come in determined
to work hard and do it.
It is hard and it takes
self discipline, but it's
worth it."*


$$\frac{dy}{dx} = \frac{dy}{du} \frac{du}{dx}$$