

# Michigan Math and Science Scholars Summer 2012 Program

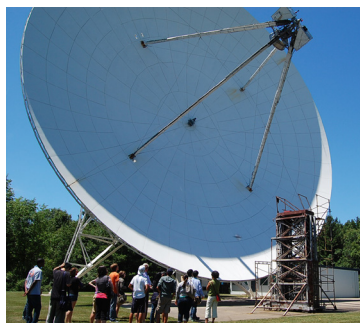
The Michigan Math and Science Scholars (MMSS) program is designed to present to high school students current developments and research in the sciences. We hope to encourage the next generation of researchers and discoverers to develop and retain a love of mathematics and science.



**Genes to Genomics**

The MMSS program features small 15-student classes taught by University of Michigan faculty as well as other outstanding instructors from around the world. Two 2-week sessions are offered; students may attend one or both sessions. Students take only one class per session and spend the majority of each day working in the class.

Each session offers courses from science departments within the College of Literature, Science and the Arts including Astronomy; Chemistry; Ecology and Evolutionary Biology; Earth and Environmental Sciences; Mathematics; Molecular, Cellular and Developmental Biology; Physics; Program in the Environment; and Statistics.



**Survey the Universe**

MMSS is open to any rising sophomore, junior, or senior high school student from around the world.

**Field Biologist**



Residential and commuter options are available, with residents staying in University dormitories.

## MMSS 2012 Courses

Session I: June 24 – July 6, 2012

**CLIMBING THE DISTANCE LADDER:  
HOW ASTRONOMERS SURVEY THE UNIVERSE**  
Department of Astronomy

**DISSECTING LIFE: HUMAN ANATOMY AND PHYSIOLOGY**  
Department of Ecology and Evolutionary Biology

**EXPLORATIONS OF A FIELD BIOLOGIST**  
Department of Ecology and Evolutionary Biology

**FORENSIC PHYSICS**  
Department of Physics

**FROM STONE TO STAR**  
Department of Earth and Environmental Sciences

**GENES TO GENOMICS**  
Department of Molecular, Cellular and Developmental Biology

**GEOMETRY IS THE NAME OF THE GAME**  
Department of Mathematics

**MATHEMATICAL MODELING IN BIOLOGY**  
Department of Mathematics

**ROLLER COASTER PHYSICS**  
Department of Physics

**SAMPLING, SURVEYS, MONTE CARLO, AND INFERENCE**  
Department of Statistics

**STUPID INTERPOLATION TRICKS:  
BEYOND "CONNECT THE DOTS"**  
Department of Mathematics

**WIRELESS COMMUNICATIONS**  
College of Engineering

Session II: July 8 – July 20, 2012

**COMBINATORIAL COMBAT**  
Department of Mathematics

**DISSECTING LIFE: HUMAN ANATOMY AND PHYSIOLOGY**  
Department of Ecology and Evolutionary Biology

**EXPLORATIONS OF A FIELD BIOLOGIST**  
Department of Ecology and Evolutionary Biology

**EXPLORING LANDSCAPE DIVERSITY**  
Program in the Environment

**FIBONACCI NUMBERS**  
Department of Mathematics

**FORTUNES MADE AND LOST: FINANCIAL MATHEMATICS**  
Department of Mathematics

**GENES TO GENOMICS**  
Department of Molecular, Cellular and Developmental Biology

**MATHEMATICS OF DECISIONS, ELECTIONS, AND GAMES**  
Department of Mathematics

**MATHEMATICS AND THE INTERNET**  
Department of Mathematics

**THE PHYSICS OF MAGIC AND THE MAGIC OF PHYSICS**  
Department of Physics

**SURFACE CHEMISTRY**  
Department of Chemistry

## MMSS After Class

Classes are held Monday thru Friday from 9:00 am to 4:30 pm in various buildings on campus. After class, residential students choose from a variety of activities to participate in including movies, games, art, sporting activities, and other social events.



**Ceder Point Amusement Park**

From movies at "Top of the Park" to the famous Ann Arbor Street Art Fairs, which welcome more than a thousand artists from all over the United States, students experience Ann Arbor from the perspective of an undergraduate student. Weekend activities feature a trip to the local amusement park, a professional baseball game, or other outdoor activities. All evening and weekend events and times are facilitated and supervised by trained residential counselors.

## MMSS Benefits

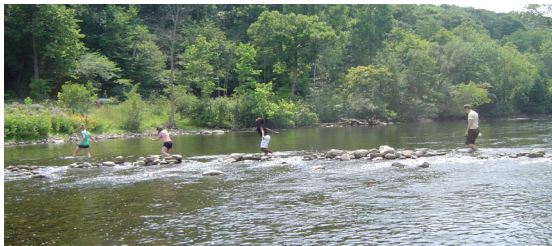
The benefits of the MMSS program are numerous and lasting. Participants learn from their peers and instructors while using state of the art laboratories and technology at the University of Michigan. While class and lab work provide valuable academic experiences, participants will enjoy many of the other cultural and artistic opportunities the University of Michigan has to offer.

The MMSS program is a stepping stone for today's high school student to become tomorrow's university student. Indeed, former students of the MMSS program often go on to attend the University. While pursuing majors within the College of Literature, Science and the Arts or in the College of Engineering, many campers return to MMSS as residence hall advisors and/or course assistants.

The MMSS program is a wonderful addition to your summer activities as well as being a great resume builder.



**Surface Chemistry**



**Exploring Landscape Diversity**

## MMSS Comments

"...I wanted to thank you and your staff for a great summer experience for my son... I am so happy he really enjoyed himself and learned a lot. He's made new friends that he continues to keep up with. He loved the campus, the school, the school pride and the town. He was so convinced he wanted to attend Stanford that he didn't even want to look at other schools. Well we visited Stanford and UC Berkeley and he said they don't hold a candle to Michigan. He also had no problems getting meals that suited his gluten and dairy free needs."

"...I enjoyed the facilities of the university as a whole- the dorms were comfortable, there was quite suitable internet connection, the food was very well-prepared, and the under-graduate science building had some of the best labs I've seen..."

"...it can't be (improved), it's the best!! Our teacher and assistant are the best..."

"...add another week to such an awesome course..."

"...we completed complex courses while being involved in outdoor activities...great supportive counselors..."

"...I had the most fun and educational interest in those two weeks. The experiences I've gained, both social and academic, were highly memorable and impacting. I enjoyed every moment of the program and would recommend it to anyone who wants to have an amazing summer."

"...was fascinated by the topic and very impressed with the style and effectiveness of... instruction. He had nothing but positive reviews of the academic enrichment the staff of University of Michigan offered and we are thrilled that his first residential experience was so positive. He also spoke very highly of your lab facilities and campus."



**Forensic Physics**



**Genes to Genomics**

## Program Fees

**Commuter: \$1,000 per two-week session**  
**Residential: \$1,700 per two-week session**  
**Non-refundable application fee: \$100**

Visit our website and apply online today!

<http://www.math.lsa.umich.edu/mmss>

mmss@umich.edu  
 (734) 647-4466

Applications are reviewed on a rolling basis. The MMSS program strives to place every student into her or his preferred course. Completed applications received by April 1, 2012 receive priority consideration for course choice.

**Genes to Genomics**



**Roller Coaster Physics**



**Surface Chemistry**



**Combinatorial Combat**

The Regents of the University of Michigan: Julia Donovan Darlow, Laurence B. Deitch, Denise Ilitch, Olivia P. Maynard, Andrea Fischer Newman, Andrew C. Richner, S. Martin Taylor, Katherine E. White, Mary Sue Coleman (ex officio)



## 2012 Program Dates

June 24 – July 6, 2012

July 8 – July 20, 2012



University of Michigan  
 Ann Arbor, MI