SPEND FOUR WEEKS AT MICHIGAN TECHNOLOGICAL UNIVERSITY THIS SUMMER!

This is your opportunity to receive a comprehensive scholarship for a month of career exploration during our UNITE Scholarship Program.

PROGRAM INFORMATION

UNITE is a pre-college summer program for talented students traditionally underrepresented in science, technology, engineering, and math. The program prepares students to pursue a college education in engineering and related fields. UNITE is funded by the US Army through its Army Educational Outreach Program and coordinated by the Technology Student Association, a national non-profit organization of middle and high school students.

UNITE includes four weeks of programming:
• One week of a selective residential engineering program—Engineering Scholars Program
• One week off for the Fourth of July
• Three weeks of non-residential courses—students have nine courses to select from

Our nonresidential daily schedule:
• We pick students up each morning, and return them each afternoon or evening (depending on the day’s program).
• Lunch, and when necessary, dinner, is provided.
• Exploration sessions run from 9:00 AM to 4:30 PM, Monday through Friday. We include College Success Programming in the evenings.

In the first week, students enjoy a taste of college life. They stay in our residential hall and eat in our dining center. Throughout their four weeks of classes, UNITE students visit classrooms and labs, and spend their evenings exploring even more aspects of campus life.

Please see the enclosed handout for the complete course list.

HOW TO APPLY

Applying is easy—just send in your completed application, including a teacher recommendation and signatures; short essay; and a copy of your school transcript. You can also apply online or request additional applications by emailing syp@mtu.edu.

COST

All selected participants receive a scholarship valued at more than $3,000, which covers all tuition, classroom supplies, meals, and a stipend.

STIPEND

Students will receive a stipend of $100 per week at the completion of their program.

SELECTION CRITERIA

Participants are selected on a competitive basis. You should have a strong math and science background and a minimum of a 2.5 GPA. Students must be first-generation, college-bound, and eligible for free or reduced lunch. However, outstanding students and those without these prerequisites will be considered. The selection committee also considers involvement in extracurricular activities and outside interests or responsibilities; short responses to questions; teacher recommendations; and school transcripts. Neatness, accuracy, and following directions will be noted.

APPLICATION CHECKLIST

☐ Complete application  ☐ Signature of applicant
☐ Essay response  ☐ Copy of school transcript
☐ Answers to three questions on page 3  ☐ Teacher recommendation letter
☐ Signature of parent or guardian

PLEASE CONTACT OUR OFFICE WITH QUESTIONS.

Michigan Tech Summer Youth Programs—UNITE
Administration Building 217
1400 Townsend Drive
Houghton, MI 49931-1295

Toll-free 1-888-773-2655
Fax 1-906-487-1136
Email syp@mtu.edu

WWW.SYP.MTU.EDU
UNITE APPLICATION

ALL APPLICANTS MUST COMPLETE AND RETURN THIS FORM.

THERE ARE TWO WAYS TO APPLY: Online: www.syp.mtu.edu • By mail: see below.

Please complete both sides of this application and send it with your transcript, teacher recommendation, and short responses to questions.

Legal name ________________________________________________________________________________________________________________
First  Middle  Last  Suffix (Jr., Sr., II, etc.)

Preferred name/nickname _________________________________________________________________________________________________

This is how your name will appear on your participant ID.

CONTACT INFORMATION
Participant’s email ___________________________________________
Address/PO Box _____________________________________________
City _________________________________________________________
State/province _______________________________________________
ZIP or postal code ____________________________________________
County ______________________________________________________
Country _____________________________________________________
Telephone ___________________________________________________
Participant’s cell phone _______________________________________

PERSONAL INFORMATION
Gender ____________________ Birth date ____________ Age _______

SCHOOL INFORMATION
What is the name of the school you attended this year? ____________________
What grade will you have completed by June 2016? _________
Current class rank ________________ out of ___________________
Cumulative GPA __________________

Note: If your school uses a grading system other than the 4.0 scale, an explanation of the method must accompany your transcript.

PARENT/GUARDIAN INFORMATION—EACH PARENT/GUARDIAN MUST FILL OUT THE FOLLOWING.

Parent first name  Middle name  Last name  Suffix
Relationship to applicant __________________________________
Evening phone _____________________________________________
Day phone _________________________________________________
Cell phone _________________________________________________
Email ______________________________________________________
Is your address the same as the participant’s?  ☐ Yes  ☐ No
If no, provide address _______________________________________

SCHOOL TRANSCRIPT
Enclose your most recent transcript of all course work through the first semester of this year.

ESSAY
Please write or type on a separate piece of paper. Be sure to put your full name at the top of the page.

In a short essay (approximately 300 words), describe what your goals are for the next five years and how Summer Youth Programs will play a role in helping you achieve these aspirations. Include information about why you would be a good candidate for the UNITE scholarship and how it will affect your future.

UNITE REQUIRES WE ASK THESE QUESTIONS. PLEASE ANSWER TO BE ELIGIBLE:
1. Are you the first generation in your family to attend college?  ☐ Yes  ☐ No
2. Are you eligible for free or reduced lunch at your school?  ☐ Yes  ☐ No
3. Are you Native American?  ☐ Yes  ☐ No

-over-
TRANSPORTATION
If funding is available, UNITE students may have the option of being picked up and dropped off at their local school by Michigan Tech Summer Youth Programs staff. If you are interested in this service, please include details about when and where you would like to be picked up.

☐ I would like to be picked up at my school by Summer Youth Programs staff.

Name of school______________________________________________________________________________________________________________

Preferred time of pickup (on start date of program) ___________________________________________________________________________

Preferred time of drop-off (on end date of program) __________________________________________________________________________

Please note: Times are subject to change.

☐ I will be dropped off at the program by private transportation.

Drop-off date _____________________________________________   Drop-off time __________________________________________________

Pickup date _______________________________________________   Pickup time ____________________________________________________

All students are required to register between 10:00 AM and 2:00 PM on Sunday, June 26.

PARENT/GUARDIAN CONSENT
I approve of _______________________________________________________________________ applying for UNITE.

Applicant name

During the UNITE program, students will be asked to participate in an evaluation/research process. The Army Educational Outreach Program (AEOP) uses the evaluation/research to gauge the effectiveness of the program, as well as to create reports to the organizations that fund the program. The evaluation/research may be used to create scholarly publications. Participants may be asked questions about their experiences, or may be asked to fill out questionnaires and/or participate in focus groups. Participation/response is voluntary; students can choose not to participate or withdraw from participation at any time. All information provided is strictly confidential. All reports and scholarly publications using the information will remove identifiable content before publication. The AEOP may use participants' email addresses to contact them in the future. Personal information will never be distributed outside of the AEOP and will be kept confidential. By signing this form, you are indicating that you have read, understand, and are willing to participate in the evaluation/research portion of the UNITE program.

Parent/Guardian Signature  _____________________________________________________________ Date  _____________________________

STUDENT SIGNATURE
The information provided in this application is correct.

Signature  ______________________________________________________________________________  Date  _____________________________
2016 Unite Summer Curriculum

Transportation will be provided to and from Michigan Technological University for all 4 weeks.

**Week 1 | June 26-July 2 | Engineering Scholars Program.** All 15 UNITE students will attend a residential (live-in) week-long program studying 12-15 fields of engineering. They will live in the residence hall, eat in the dining hall, and experience what it is like to have a roommate. This will give them a mini-taste of college life and allow them to attend evening recreational and socialization opportunities. Engineering Scholars Program (ESP) is an introduction to fields and careers in areas like mechanical, computer, environmental, electrical, chemical, biomedical, civil, geological, and materials engineering. Students will interact with engineering role models. They will also work in teams on week-long group projects, to solve real-world engineering problems. There will be sessions about the college application process, financial aid, and tips for succeeding in university engineering programs. In the evenings students enjoy team competitions, a variety show, and outdoor activities in Michigan’s beautiful Keweenaw Peninsula on Lake Superior.

**No class the week of July 3 - 9.** Due to the 4th of July holiday, Summer Youth Programs will not be running during this week.

For the following 3 weeks, students will be able to select between 3 explorations per week, to further their exploration of subjects they were introduced to during the Engineering Scholars Program. Students will also attend these 3 weeks as commuter students. Michigan Tech will provide daily transportation to and from students’ school (family drop-off/pick-up at school). Lunch will be provided, and when needed, dinner. Exploration sessions run from 9:00 am through 4:30 pm, Monday-Friday. We will include evening College Access Programming during some evenings.

Select a 1 st and 2 nd choice from Week 1, 2, 3, and indicate them on your application form.

**Week 2 | July 10-16 | Civil Engineering, Geological Engineering, or Forensic Science**

**#52230, Civil Engineering:** Introduction to civil engineering. Students will design and build skyscraper models and explore how bridges are strong enough to hold the weight of traffic. They will make and break concrete, create models, and visit local structures designed by civil engineers. In addition, students will get practice using modeling software in the computer labs with guidance from their instructors.

**#52329, Geological Engineering:** The Keweenaw Peninsula is called the Copper Country because of its rich deposits of copper. Geological Engineering will journey through the incredible history of Keweenaw geology: from the formation an ancient volcanic rift and its enormous lodes of native copper, to the glaciers that uncovered them, and the miners who powered the Keweenaw’s thriving copper mining industry through the early 1900’s. In the lab, you will discover how rocks and minerals are formed and learn to use specialized tools and the scientific method to identify them in the field. You will spend most of the week outside, examining geological evidence, mapping ancient lava flows and rock beds, exploring underground mines, collecting samples at old mines and on the beaches of Lake Superior, and sharpening your skills as a geologist in order to understand the events that have shaped the Keweenaw landscape to present.

**#51460, Forensic Science & CSI:** How can you track down a criminal by just one fiber? Learn how forensic scientists solve crimes through DNA analysis, blood-typing and splatter analysis, hair and fiber analysis, and facial reconstruction. Examine bones and tooth impressions and perform your own autopsy through a class dissections. Students will also work in a team to investigate and solve a mock crime scene.
Week 3 | July 17-23 | Wild World of Chemistry, Stop the Hackers, or Mechanical Engineering: Engineering the Human Body

#51467, Wild World of Chemistry: Students will prepare slime and other polymer materials to discover the weird-and-wild properties that set them apart from “normal” materials. They will synthesize aspirin, visit the Seaman Mineral Museum to learn more about minerals/ores, and explore a historical site to sample stamp sand. Other topics will include DNA, light emission, light absorption and, other unique characteristics to affect the structure and behavior of matter.

#51468, Stop the Hackers: In this course, students will delve into the world of computer security. They will see how computer hackers infiltrate a system and steal private information and how to keep their own systems safe. In addition, the course will touch on the types of attacks that hackers launch, such as key loggers, viruses, Trojan horses, and phishing.

#52340, Mechanical Engineering: Engineering the Human Body: Learn to look at the body from a mechanical engineering perspective. Characterize the mechanical properties of the body and natural tissues. Topics can include design for safety, biomimetic design, and the human-technology interface of biomechanics.

Week 4 | July 24-30 | Mining Engineering, Materials Science & Engineering, or Rocketry & Space Science

#51868, Mining Engineering: The Upper Peninsula of Michigan, known for its iron and copper industries, has hosted many underground and surface mines. Students will delve beneath the Earth’s surface to study an underground mining operation and learn about its challenges. They will observe the importance of mine ventilation and take measurements to understand the basic air-flow mechanism, as well as witness a blasting demonstration to understand rock breakage and the excavation process. They will visit large-scale mining machines, design a basic pit layout, and a set up a truck-shovel operation that meets production and field requirements.

#51866, Materials Science & Engineering: Materials are everywhere, and understanding their basic science allows us to engineer new and improved materials. How do we create materials? And how do we measure their behaviors so that we can compare them? Explore these questions using a balanced mixture of science and hands-on engineering. Create your own materials, process them by bending and heating, and peer into their structures, which control how they behave.

#51953, Rocketry and Space Science: Get involved in the excitement of rocketry! You’ll learn about aerodynamics and propulsion while designing and building your own rocket. During the week, you will refine your plan, use software to improve your design, and launch your rocket up to 1,500 feet. Exploring rocketry will teach you all about physics, engineering, and career opportunities in science.

College access programming (offered select evenings during the final 3 weeks)
In addition to the academic curriculum, we plan to incorporate pre-college success workshops for the students in order to prepare them for their post-secondary education, on several evenings during the students’ time at SYP. Topics include: Collegiate Reality (a budgeting exercise in which students must make decisions to afford an assigned college); Campus Reality (a room-sized Monopoly-like board game about campus resources); a Khan Academy SAT prep workshop; an introduction to the college search through the BigFuture college search; and meetings with representatives on campus from careers of interest to them.