Current MS, MEng, and PhD Opportunities at Michigan Technological University

Transportation Materials research opportunities exploring the most efficient use of naturally occurring industrial by-products, or recycled materials to increase sustainability of transportation infrastructure. Efforts promoting sustainability will address the economic, environmental, and societal considerations. Focus materials include soils, unbound aggregates, hot-mix asphalt, and portland cement concrete.

Position(s): Four funded research assistant positions are available to explore materials in sustainable transportation infrastructure. PhD and MS students are welcome to apply. These assistantships will be funded by sponsored research from the USDOT and other partners through the University Transportation Center.

Contact: Dr. Van Dam at tvandam@mtu.edu or Dr. Sutter at llsutter@mtu.edu

Sustainable Asphalt Pavement focusing on advances in the use of fly ash, waste tire rubber and wires, polymer modified asphalt, recycled asphalt materials, and warm mix asphalt techniques. Research will explore advances of material characterization such as performance testing of Superpave asphalt mixtures, field and laboratory compaction mechanisms, discrete and finite element modeling of pavement materials, and instrumentation and testing methods.

Position(s): Two funded research assistant positions are available beginning in the spring of 2007. PhD and MS students are welcome to apply. These assistantships will be funded by sponsored research from the USDOT and MDOT.

Contact: Dr. You at zyou@mtu.edu

Modeling Processes at the interface between civil design and construction, using simulations and information visualization. Develop frameworks that address uncertainty and the impact of human decisions. This research will require knowledge of mathematical modeling, computer programming, and an undergraduate degree in Civil Engineering or Information Sciences.

Position(s): One funded research assistant position is available through funding from the National Science Foundation (NSF). PhD and MS students are welcome to apply.

Contact: Dr. Mukherjee at amukherj@mtu.edu

Civil Engineering projects focusing on bridge engineering and durable transportation structures with research topics including ultra high-performance concrete (UHPC). Currently, Michigan Tech has one of the only state-of-the-art university research laboratories capable of mixing, curing, and testing UHPC. Projects may also involve rapid construction techniques for prestressed concrete bridges and improvements in systems, including construction, design, and maintenance of transportation infrastructure.

Position(s): Two to three funded research assistant positions are available. PhD and MS students are welcome to apply.

Contact: Dr. Ahlborn at tess@mtu.edu

continued
Geotechnical Design, evaluation, and aggregate research specifically related to transportation infrastructure and pavement friction and noise with funding from the Federal Highway Administration (FHWA). Research may include improved methods for evaluation, characterization, and improved performance.

**Position(s):** One to two funded research assistant positions are available. PhD and MS students are welcome to apply.

**Contact:** Dr. Vitton at vitton@mtu.edu

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**Finite Element Analysis,** structural monitoring and condition assessment, structural reliability analysis, probabilistic design, natural and man-made hazard mitigation, structural load modeling and combinations of loads, performance-based engineering, earthquake engineering, wind engineering, and wood engineering.

**Position(s):** One to two funded research assistantship opportunities are available. PhD and MS students are welcome to apply.

**Contact:** Dr. Li at yueli@mtu.edu

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**Soil Mechanics,** foundational engineering, and soil behavior concentrating on the behavior of natural silts and mine tailings during deposition, consolidation, and aging. Current projects involve the use of Cement Kiln Dust (CKD) for soil stabilization and a fundamental study of the resilient modulus of granular materials.

**Position(s):** One funded research assistantship opportunity is currently available. PhD and MS students are welcome to apply.

**Contact:** Dr. Ralph Hodek at rjhodek@mtu.edu

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**About Michigan Tech**
Michigan Tech is located in Houghton, MI on the south shore of Lake Superior. This rural area is known for natural beauty, pleasant summers, abundant snow fall, and numerous all-season outdoor activities. In addition, the University maintains its own downhill and cross-country ski facilities and golf course. There are also numerous cultural activities and opportunities available on campus and in the community. Michigan Tech is rated as one of the safest college campuses in the United States, and the local community provides excellent resources conducive to quality family life.

**About the Department of Civil and Environmental Engineering**
The Civil and Environmental Engineering Department at Michigan Tech includes 26 faculty, who play an active role in graduate education and research, 30 professional staff, over 100 full-time graduate students, and more than 500 undergraduate students. Research funding exceeds $4.5 million per year and several undergraduate and graduate degree programs are nationally ranked by U.S. News & World Report.