The Department of Civil, Architectural and Environmental Engineering at Missouri S&T has a rich tradition of preparing the best “street-ready” engineers to address global challenges. With our world-class facilities, renowned researchers and dedicated faculty, we are proud to be the only civil engineering program in Missouri to have been ranked as a top 25 undergraduate program by U.S. News & World Report. Educated in specialized areas such as materials, geotechnical and water resources engineering, and pollution control, our graduates recognize the importance of improving our national security, safeguarding human health and maintaining our country’s aging infrastructure.

By integrating research and teaching, our graduates will be equipped to excel in an ever-changing world. Whether they are designing an infrastructure with a zero energy footprint, bringing clean water to a remote village, leading a multinational team of social entrepreneurs, or building a suspension bridge with advanced engineering materials, they will have the flexibility, fluency and foresight to lead.

You are invited to browse the following pages and to discover the many accomplishments of our outstanding faculty and students.
Dan Abbott
Lecturer, Mechanics

Education: M.S., Mechanical Engineering, Missouri University of Science and Technology

Bate Bate, Ph.D.
Assistant Professor, Geotechnical Engineering

Education: Ph.D. Civil Engineering, Georgia Institute of Technology
Research Interests: Contaminant containment and site remediation, In situ soil improvement, Beneficial reuse of industrial waste materials, Modeling of fundamental soil behavior using discrete element method, Unsaturated soil mechanics

Stuart Baur, Ph.D., A.I.A.
Assistant Chair, Architectural Engineering, Associate Professor, Architectural Engineering
Education: Ph.D. Civil Engineering, Missouri University of Science and Technology
Research Interests: Design cost effective clean alternative energy, Develop new building technologies and practices through the use of materials and methodology, Generate intelligent responsive building systems

Jerry Bayless, P.E., F.ASCE
Associate Professor, Civil Engineering

Education: M.S. Civil Engineering, Missouri University of Science and Technology
Courses Taught: Structural Analysis, Reinforced Concrete Design, Elementary Fluid Mechanics

Joel Burken, Ph.D., P.E., BCEE, AAEE
Associate Department Chair, Civil, Architectural and Environmental Engineering, Professor, Environmental and Civil Engineering
Education: Ph.D. Civil and Environmental Engineering, University of Iowa
Research Interests: Phytoforensics, Phytoremediation and natural treatment systems, Biological wastewater treatment, Constructed wetlands, Green remediation

Chien-Chung Chen, Ph.D.
Assistant Teaching Professor, Structural Engineering

Education: Ph.D. Civil Engineering, Pennsylvania State University
Research Interests: Composite members, Force protection, Bridge engineering

Genda Chen, Ph.D., P.E., F.ASCE
Professor, Structural Engineering

Education: Ph.D. Civil Engineering, State University of New York at Buffalo
Research Interests: Structural health monitoring, Interface mechanics and deterioration of composite structures, Adaptive passive dampers and systems, Multi-hazards assessment and mitigation, Forensic study, Seismic analysis and retrofit, Soil-structure interaction, Bridge engineering

Mohamed ElGawady, Ph.D.
Associate Professor, Structural Engineering

Education: Ph.D., Structural Engineering, Swiss Federal Institute of Technology (EPFL) Lausanne, Switzerland
Research Interests: Seismic behavior of unreinforced masonry (URM) structures, Application of Fiber Reinforced Polymers (FRP) in strengthening and repair of masonry/reinforced concrete structures, Seismic behavior of reinforced concrete bridges, Damage-free bridge columns, Segmental construction, Rocking mechanics and the use of sustainable materials in seismic prone regions

Dimitri Feys, Ph.D.
Assistant Professor, Materials Engineering

Education: Ph.D., Civil Engineering, Ghent University, Ghent, Belgium
Research Interests: Behavior of highly workable concrete in the fresh state, Rheology of complex materials and suspensions, Suspension flow and sedimentation, Fluid mechanics and flow modeling, Concrete made with recycled materials and advanced sustainability
Mark Fitch, Ph.D.
Assistant Chair, Environmental Engineering
Associate Professor, Environmental Engineering

Education: Ph.D. Chemical Engineering, University of Texas at Austin
Research Interests: Constructed wetlands/ biochemical reactors for metals removal, Biofiltration/Membrane biofiltration, Nutrient uptake in streams

Kamal Khayat, Ph.D., P.E., F.ACI
Vernon and Maralee Jones Professor, Materials Engineering
Director, Center for Infrastructure Engineering Studies
Director, Center for Transportation Infrastructure and Safety

Education: Ph.D. Civil Engineering, University of California, Berkeley
Research Interests: Design and performance of advanced structural materials, including high-performance concrete with adapted rheology, self-consolidating concrete and specialty grouts, Repair and rehabilitation of civil engineering infrastructure, Rheology and workability of cement grout, mortar and concrete, Physico-chemical interaction of chemical admixtures and modern hydraulic binders, Microstructure and properties of cement-based materials, Mechanical properties, visco-elastic properties and structural performance of specialty concrete, Durability and deterioration of cement-based materials in aggressive environments, Use of chemical admixtures, supplementary cementitious materials and fibers in concrete

Ronaldo Luna, Ph.D., P.E., F.ASCE
Assistant Chair, Civil Engineering
Professor, Geotechnical Engineering

Education: Ph.D. Civil Engineering, Georgia Institute of Technology
Research Interests: Soil mechanics and foundation engineering, Geotechnical earthquake engineering, Liquefaction of soils, Geographic information systems and remote sensing

Undergraduate Students
100+
Graduate Students

25 Full-time Faculty
Cesar Mendoza, Ph.D.
Associate Professor, Water Resources Engineering

Education: Ph.D. Civil Engineering, Colorado State University
Research Interests: Hydraulics, Hydrology, Fluid mechanics, Sediment transport, Stream mechanics, Environmental hydraulics, Mathematical modeling

Glenn Morrison, Ph.D., F.ISIAQ
Associate Professor, Environmental Engineering

Education: Ph.D. Civil Engineering, University of California, Berkeley
Research Interests: Indoor air pollution, Indoor surface chemistry, Pollutant transport, Exposure analysis, Building science

John Myers, Ph.D., P.E., F.ACI, F.ASCE
Associate Professor, Structural Engineering
Director, Structural Engineering High-Bay Laboratory
Associate Director, Center for Transportation Infrastructure and Safety

Education: Ph.D. Civil Engineering, University of Texas at Austin
Research Interests: Structures/high performance concrete (HPC) behavior and durability performance, Fiber-reinforced polymers (FRP) in structural repair and strengthening applications with an emphasis related to concrete and masonry structures, and their durability performance, Development of environmentally sensitive construction materials, Hybrid materials and enhanced systems for blast resistant structures

Daniel Oerther, Ph.D., P.E., BCCE, AAEE, F.ASCE
John & Susan Mathes Professor, Environmental Engineering

Education: Doctor of Philosophy, University of Illinois, Urbana
Research Interests: Environmental biotechnology, Urban sustainability, Global development

Timothy Philpot, Ph.D., P.E.
Associate Professor, Structural Engineering

Education: Ph.D. Civil Engineering, Purdue University
Research Interests: Development of interactive educational software for the introductory engineering mechanics courses

David Richardson, Ph.D., P.E.
Associate Professor, Materials Engineering

Education: Ph.D. Civil Engineering, Missouri University of Science and Technology
Research Interests: Properties of pavement materials (asphalt, concrete, granular base, stabilized soil, subgrades), Properties of building materials (concrete, masonry, aggregate), Pavement design and analysis, Materials testing (methods and evaluation)

William Schonberg, Ph.D., P.E., F.ASCE, F.ASME, Assoc F.AIAA
Department Chair, Civil, Architectural and Environmental Engineering
Professor, Aerospace Engineering

Education: Ph.D. Civil Engineering, Northwestern University
Research Interests: Armor/anti-armor and penetration mechanics, Spacecraft vulnerability/survivability, Spacecraft shielding against meteoroid and orbital debris impacts, Hypervelocity impact phenomena, Building collapse/rubble modeling

Eric Showalter, Ph.D., P.E.
Associate Teaching Professor, Construction Engineering

Education: Ph.D. Civil Engineering, Purdue University
Research Interests: Information technology applications in construction, Environmental remediation, Productivity simulation, Cost effectiveness of technology
Lesley Sneed, Ph.D., P.E.
Assistant Professor, Structural Engineering

Education: Ph.D. Civil Engineering, Purdue University
Research Interests: Reinforced and prestressed concrete structural members and systems, Structural models and experimental methods, Innovative methods of repair and strengthening of structures subjected to seismic loading or other extreme hazards, Structural hazard mitigation, Design codes and construction specifications for structural concrete

Richard Stephenson, Ph.D., P.E.
Chancellor’s Professor, Geotechnical Engineering

Education: Ph.D. Civil Engineering, Oklahoma State University
Research Interests: Foundation design, Engineering behavior of soils, Embankment dams, Foundation engineering, Geotechnical engineering

Jeffery Thomas, Ph.D., P.E.
Assistant Teaching Professor, Mechanics

Education: Ph.D. Engineering Mechanics, Missouri University of Science and Technology
Research Interests: Engineering education, Mechanics of biological materials, Design of percussion instruments, Residential construction

Jeffery Volz, Ph.D., P.E., S.E.
Assistant Professor, Architectural Engineering

Education: Ph.D. Civil Engineering, The Pennsylvania State University
Research Interests: Improvements of cement-based materials, Durability and fatigue performance of prestressed and reinforced concrete, Corrosion of metals in cementitious systems, particularly prestressed and reinforced concrete, Fatigue and fracture of metals, particularly involving the combination of corrosion and fatigue, Evolutionary algorithms to predict critical elements in progressive collapse of multistory structures, Building facades under extreme loading events, such as hurricanes, earthquakes and thermal loadings, Sustainability applied to building systems, particularly involving new materials and improving the performance of existing materials

Jianmin Wang, Ph.D., P.E.
Associate Professor, Environmental Engineering

Education: Ph.D. Civil Engineering, University of Delaware
Research Interests: Sustainable technologies for advanced wastewater treatment, Synergistic toxic effect of nanoparticles and heavy metals, Fate and transport of heavy metals in natural and engineered systems

Laboratories & Research Centers
Journal Publications


Mayer, U. Gosewinkel, “Time

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**Conference Papers & Presentations**


Khayat, K.H., Omran, A.F., Al Magdi, W., “Evaluation of Thixotropy of Self-Consolidating Concrete and Influence on Concrete Performance,” 1st Latin American Symposium on SCC, October, Maceio, Brazil, October, 2012 (invited).


Richardson, D.N., “High Volume Flyash Concrete in Missouri,” Missouri Concrete Conference, Rolla, MO, April, 2012.

Richardson, D.N., “Strength Testing Controversy: 4x8 vs 6x12 Cylinders,” Missouri Concrete Conference, Rolla, MO, April, 2012.


Myers, J.J., Carey, N.I., Discrete Fiber-Reinforced Polyurea Systems for Infrastructures Strengthening and Blast Mitigation, CIES Report for Department of Defense — Awareness and Localization of Explosives-Related Threats Center of Excellence, Missouri University of Science and Technology, Rolla, Missouri, June, 2012.


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Civil Engineering
Among the best jobs in fast-growth fields on money.cnn.com

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31%
Predicted job growth for Environmental Engineering on money.cnn.com

200+
Number of Applications submitted for the M.S. and Ph.D. degree programs

26%
Ph.D. Female students

Website
Scan this QR code with your smart phone and visit our department website.
Contracts, Grants & Fellowships Awarded


Chen, G., (PI) and Cheng, M., (Co-PI), “NUTC/Adding Faculty in Transportation Areas—Engineering Management,” Department of Transportation, November 2012 to December 2013; $433,920.


Khayat, K.H. (PI), “NUTC/Ultra High Strength Concrete Wearing Surface for Asphalt and Concrete Road as well as Bridge Deck,” Department of Transportation, September 2012 to December 2013; $120,000.


LaBoube, R.A. (PI) and Yu, W.W. (Co-PI), “Wei-Wen Yu Center for Cold-Formed Steel Structures,” Metal Building Manufacturers Association, January 2012 to December 2012; $5,000.

LaBoube, R.A. (PI) and Yu, W.W. (Co-PI), “Center for Cold-Formed Steel Structures,” American Iron and Steel Institute, January 2012 to December 2012; $52,500.

LaBoube, R.A. (PI) and Yu, W.W. (Co-PI), “CFSEI Sponsorship of CCFSS,” Steel Framing Alliance, January 2012 to December 2012; $5,000.

LaBoube, R.A. (PI) and Yu, W.W. (Co-PI), “Wei-Wen Yu Center for Cold-Formed Steel Structures,” Steel Framing Industry Association, January 2012 to December 2012; $5,000.


Luna, R. (PI), “NUTC/Effects of Road Construction Intensity and Operations on Rural Freeway Work Zone Capacity,” Department of Transportation, August 2012 to July 2013; $24,983.


Luna, R. (PI), “Effects of Road Construction Intensity and Operations on Rural Freeway Work Zone Capacity,” Iowa State University, August 2012 to July 2013; $49,966.

Myers, J.J. (PI), “Awareness and Localization of Explosive-related Threats (ALERT),” Northeastern University, January 2012 to June 2012; $60,000.

Myers, J.J. (PI) and Volz, J.S. (Co-PI), “NUTC/High-Strength Self-Consolidating Concrete (SCC) and High-Volume Fly Ash Concrete (HVFAC) for Infrastructure Elements: Implementation,” Department of Transportation, October 2012 to December 2015; $129,809.


Volz, J.S. (PI), Myers, J.J. (Co-PI) and Chandrashekhara, K. (Co-PI), “NUTC/ The NASP Bond Test as Predictor of Strand Bond, Transfer Length and Development Length-Addendum,” Department of Transportation, September 2011 to May 2013; $10,000.


Volz, J.S. (PI) and Khayat, K. (Co-PI), “Recycled Concrete Aggregate (RCA) for Infrastructure Elements,” Missouri Department of Transportation, October 2012 to May 2014; $130,000.

Volz, J.S. (PI) and Khayat, K. (Co-PI), “NUTC/Recycled Concrete Aggregate (RCA) for Infrastructure Elements,” Department of Transportation, October 2012 to December 2013; $130,000.


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**Scholarships**

200k

Average annual amount of scholarships awarded
Graduate Students Completed

**Master of Science (with thesis)**


Farrow, E., “Controlling Metal Uptake by Rice Plants,” Advisor: J. Wang


Porterfield, K., “Bond, Transfer Length and Development Length of Prestressing Strand in Self-Consolidating Concrete,” Advisor: J.S. Volz

Rathe, L., “Behavior of Staged Externally Bonded Carbon Fiber Reinforced Polymer Sheets for Improved Ductility,” Advisor: G. Chen

Sells, E., “Self-Consolidating Concrete for Infrastructure Elements: Shear Characteristics,” Advisor: J.J. Myers


Stringer, R., “Profiling of PAHS Treated with Activated Carbon Using In-Situ sPME,” Advisor: J.G. Burken

Tucker, B., “Investigation of the Effects of Shrinkage, Creep and Abrasion on Self Consolidated Concrete and High Volume Fly Ash Concrete for Use in Transportation Related Infrastructure,” Advisor: J.J. Myers


Zhang, D., “Effect of Side Edge Distance and Concrete Materials on Corrosion in Precast Prestressed Concrete Panels,” Advisor: L.H. Sneed

**Doctor of Philosophy**


Carey, N., “Discrete Fiber-Reinforced Polyurea Systems for Infrastructure Strengthening and Blast Mitigation,” Advisor: J.J. Myers

Liu, G., “Nitrification Performance of Activated Sludge Under Low Dissolved Oxygen Conditions,” Advisor: J.J. Myers


Zheng, W., “Behavior of Advanced Innovative Materials for Improved Long-Term Bridge Performance,” Advisor: J.J. Myers
Honors, Awards and Other Recognition

Burken, J.G., (Co-PI) and Balouet, J.C., (PI), 1st Place, 2012 NICOLE (Network for Industrially Contaminated Land in Europe) Technology Award; for the project “Pollution Identification in Trees.”


Burken, J.G., Distinguished Service Award, Association of Environmental Engineering and Science Professors (AEESP) for Service as President 2011-12.

Burken, J.G., 1st place — Best Presentation Award, 9th International Phytotechnologies Conference, Hasselt Belgium, September 2012; for the paper “Phytorecovery: Transient Uptake of Chlorinated Solvents by Trees” (Limmer, M.A.; Holmes, A.J.; Burken, J.G.)

Burken, J.G., Faculty Service Award, Missouri S&T, 2012.


Khayat, K.H., ACI Quebec and Eastern Ontario Award in Recognition of Outstanding Contributions to Concrete Science and Technology, 2012.

Myers, J.J., Faculty Research Award, Missouri S&T, 2012.


Richardson, D.N., Outstanding Teaching Award, Missouri S&T, 2012.

Volz, J.S., Faculty Excellence Award, Missouri S&T, 2012.

Volz, J.S., Outstanding Teaching Award, Missouri S&T, 2012.