

CIVIL ENGINEERING AT UB

DEPARTMENT OF CIVIL, STRUCTURAL AND ENVIRONMENTAL ENGINEERING

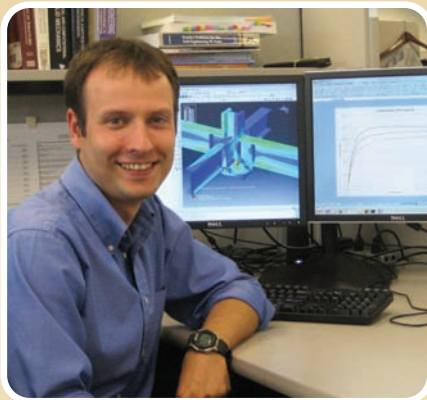
Civil Engineers Shape the World

From the beauty and function of the Golden Gate Bridge in San Francisco and the Burj Khalifa in Dubai to the largely hidden but life-sustaining urban water systems, civil engineers enrich our daily lives.

We are the innovators, designers, builders, and operators of the built environment, the infrastructure that serves much of our basic needs and contributes to a high standard of living as well as society's economic and social engine for change. We are the stewards of the natural environment and its resources.

With an ever-increasing global population that continues to shift to urban areas, the need for civil engineers as leaders and protectors of the built and natural world has never been greater.

World Class People Making A Difference



Alumni Profile

Graeme Ballantyne

P.E., LEED AP

M.S. Structural Engineering, 2007

Graeme is a structural engineer with Thornton Tomasetti, Inc. based in their San Francisco office. He has been involved with projects ranging from the city's new \$4 billion Transbay Transit Center to investigating earthquake damage in Japan. "The experience and technical knowledge gained while at UB has been invaluable to my contribution to projects, and the ability to learn on the job. I am grateful to the faculty and program at UB for helping develop the essential skills to embrace that kind of environment."

"My experience with Thornton Tomasetti has been great; seeing and implementing how engineers contribute to society is hugely rewarding. I recently visited Tokyo after the March 2011 Tohoku Earthquake to perform building inspections for various clients; being able to put the minds of the occupants at ease regarding the safety of their buildings was a unique opportunity to see how as engineers we can impact people's lives in a positive manner."



Student Profile

Jonathan Rivera

Senior in Civil Engineering

Jonathan has been interested in the built environment since he was a young child. He originally majored in architecture at UB, but decided that he was more interested in how structures were actually built and designed. After attending several classes in engineering, he realized it was what he was looking for all along. As a Research Assistant in the Structural Engineering and Earthquake Simulation Laboratory, Jonathan is responsible for assisting in the testing of large scale reinforced concrete shear walls. Some objectives of the research are to develop a new predictive equation and criteria to determine if the walls can be repaired after major earthquakes.

Jonathan received his Bachelors of Science in Civil Engineering with Distinction and Cum Laude in May 2011 and was accepted into UB's Ph. D. program in Structural and Earthquake Engineering. He received a fellowship through the Louis Stokes Alliance for Minority Participation and Bridge to the Doctorate program to continue his research and graduate career.



Faculty Profile

Adel W. Sadek

Dr. Sadek is an Associate Professor in the Department of Civil, Structural and Environmental Engineering (CSEE). He also serves as Director of the Transportation Systems Engineering Lab and Acting Chair of UB 2020's Strategic Strength in Extreme Events. He came to UB in 2008 from the University of Vermont to lead the development of CSEE's interdisciplinary program in transportation systems engineering.

Dr. Sadek's research interests span a wide range of topics including transportation modeling and simulation, intelligent transportation systems, artificial intelligence applications in transportation, traffic engineering, transportation planning, and infrastructure management. He coauthored two transportation textbooks, along with over 70 papers in peer-reviewed journals and conference proceedings. He is a member of the TRB committees on Artificial Intelligence and Advanced Computing Applications, and Surface Transportation Weather. He is also a member of the Advanced Technologies committee of the Transportation and Development Institute of the American Society of Civil Engineers.



CIVIL ENGINEERING AT UB - A PERFECT FIT

Transportation Engineers

are responsible for the planning, design, construction, operation and maintenance of transportation systems, including highways, airports, runways, rail, bus and transit systems. Transportation systems serve as a foundation of our nation's economy and fulfill indispensable functions critical to our quality of life. The transportation area at UB is expanding rapidly to meet high employer demand.

Environmental Engineers

work at the interface of society and the environment, striving to balance society's needs with the integrity and sustainability of our ecosystems. An incredibly diverse field, environmental engineering is a blend of engineering principles, the natural sciences, and natural resource management.

At UB, you can major in Environmental Engineering or you can fill your technical electives with environmental engineering classes.

Construction Engineering and Management Engineers

are responsible for constructing and maintaining the facilities that provide fundamental support for our modern societies. UB Civil Engineering students have a unique opportunity to specialize in this high demand field that provides 15 out of every 100 employment opportunities in the United States.

Geotechnical Engineers

work on the design, analysis, and construction of a variety of civil engineering structures, including foundations, offshore structures, power/water/communication/transportation networks, earth slopes, retaining walls, tunnels, levies, embankments, dams, rail/roadways, and landfills, all subjected to diverse loading conditions. UB's program is well known for its contributions to numerical analysis and earthquake protection of ground structures.

Structural Engineers

focus on the analysis and design of critical components of the built environment ranging from underground structures to tall buildings, long-span bridges, power-generation facilities, aircraft and spacecraft. These structures are designed to resist natural forces and hazards (wind, earthquake, flood and fire) and man-made forces and hazards (impacts and blast). Our program in structural engineering is known internationally for its contributions in earthquake and blast engineering and its world-class laboratory facilities.



Student Clubs

Want to get to know students and faculty outside the classroom? Consider joining one of the more than 30 student clubs in engineering. Some of the more popular clubs for civil engineering students include the student chapter of ASCE, featuring the yearly Steel Bridge and Concrete Canoe teams, Engineers without Borders, and Engineers for a Sustainable World. Involvement in these clubs helps enrich your academic experiences and provides you with strong leadership opportunities, along with some great memories!

Why UB?

- ▶ High quality education
- ▶ Small school environment
- ▶ Large school opportunities
- ▶ Cost for NYS resident, 2011-2012
 - ▶ \$7,482 Tuition/Fees
 - ▶ \$11,162 Room/Board (average)

Why Civil Engineering?

- ▶ Faculty at the leading edge of their disciplines
- ▶ Undergraduate research opportunities
- ▶ Highly successful intern and placement programs
- ▶ Over 3,500 alumni around the world
- ▶ 35,000 square feet of teaching and research labs
- ▶ \$9.8 million in annual research expenditures
- ▶ No classes taught by teaching assistants
- ▶ National average starting salary in June 2011: \$52,069

Chair's Message

As Chair of the Department of Civil, Structural and Environmental Engineering at the University at Buffalo, I invite you to discover our world-class students, faculty, facilities, and programs. As generations of our graduates can attest, a degree in Civil Engineering from UB is the foundation from which you will build a career infused with purpose, pride and accomplishment. To learn more about the department, we encourage you to visit us soon. **Andrew Whittaker, Chair**

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