

**WAHEED UDDIN, Ph.D., P.E.**

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<http://www.olemiss.edu/~cvuddin/>

**University of Mississippi Experience, 1992-Present**

I am a tenured faculty and professor in the Department of Civil Engineering, University of Mississippi. I have served as the civil engineering graduate coordinator (2004-09) and Acting Department Chair in 2007. I continue to serve as the Director of Center for Advanced Infrastructure Technology (CAIT) since its establishment in December 1999. Additionally, since January 2012 I have been serving as Associate Director - Research of the National Center for Intermodal Transportation for Economic Competitiveness (NCITEC), funded by the U.S. DOT-[Research and Innovative Technology Administration \(RITA\)](http://www.olemiss.edu/projects/cait/ncitec/). <http://www.olemiss.edu/projects/cait/ncitec/>

I have extensive teaching, training, mentoring, and research record in transportation modeling and traffic management, computer modeling, simulation, and remote sensing and geospatial technologies. I developed and teach transportation, infrastructure, geospatial, and construction management courses. My detailed academic CV provides specific examples of my extensive research, mentoring, and organizational experience in teaching, course development and self-assessment, mentoring and attracting students to the department, enhancing classroom and laboratory facilities, securing external research grants including laboratory equipment grants, fundraising, industry collaboration, chairing or co-chairing international conferences, professional service, and community involvement. <http://www.olemiss.edu/~cvuddin/DrUddin-CV.pdf>

The national and global priorities of sustainable infrastructure, safe and efficient transportation and sustainable landuse development, protection from natural disasters, and preservation of the environment require us to educate our students for meeting the challenges of “green” thinking and sustainability in our world of shrinking natural resources and increasing hazards of global warming and natural disasters. I have proven leadership and management skills and record of teaching and research experience related to geospatial and remote sensing technologies, sustainable infrastructure engineering, materials and green design for infrastructure, urban environment issues of air quality and greenhouse gas emissions, water resource management, and disaster hazard mitigation. My key experience areas and accomplishments are summarized in the following sections:

- Being a P.E. myself since 1986, I have guided students at my current university for EIT goals and mentored former students for professional licensure process including the current City Engineer of Oxford, MS.
- I emphasize on industry collaboration with industry leaders for invited lectures and for training students in my courses and soliciting gift opportunities.
- I was awarded major asphalt laboratory equipment grants from the FHWA and Mississippi DOT, 1999-2001. I secured several sponsored research projects and industry software gifts totaling over 7 million dollars.
- I have valuable demonstrated experience in organizing international conference and workshops in the USA and 10 other countries. I have been the founder president of an international society on transportation infrastructure which was established in 2003 at the University of Minho in Portugal.
- Most recently I contributed a chapter on “Mobile Sources of Greenhouse Gases and Abatement Strategies” in Springer’s *Handbook of Climate Change Mitigation* (2011). I authored a chapter on “Pavement Management Systems” in the 2006 CRC *Handbook of Highway Engineering*. A complete record of my over 220 publications is available from: <http://home.olemiss.edu/~cvuddin/DrUddin-publications.pdf>
- I presented a seminar on flood disaster protection in Bangkok in December 2011 where I was invited by the President of Asian Institute of Technology (AIT) to advise on flood disaster mitigation efforts. <http://infrastructureglobal.com/thailands-post-flood-seminar-lessons-learned-from-2011-great-flood-disaster-and-future-directions-for-flood-prevention/> I lectured at a workshop on disaster risk reduction and infrastructure protection at the August 2011 CONINFRA conference in São Paulo, Brazil. In June I visited Greece as an international co-organizer of a pavement conference. Following that I visited Turkey and

presented an invited lecture at Istanbul Technical University on application of geospatial technologies for sustainable transportation infrastructure and disaster risk reduction.

- In June 2010, I was an invited member of the NSF delegation for a joint workshop on Sustainable Asphalt Pavements with China NSF in Xian. I was an invited lecturer at the Airport Pavement Design and Management Summit in Singapore, January 2010. I was an invited lecture and workshop speaker in 27 countries worldwide. See all presentations: <http://home.olemiss.edu/~cvuddin/DrUddin-presentations.pdf>
- I initiated and led a major alumni effort in 2003 that resulted in the establishment of a Professorial Excellence Fund for the department of civil engineering at the University of Texas at Austin. Recently, I established a family scholarship fund in 2010-2011 to benefit financially deserving students at NED University in Karachi.
- My specific goals of expanding research environment and mentoring in the department have been based on strong faculty interaction, mutual respect and mentoring to accomplish critical milestones, and involvement of all faculty and staff in decision making process as guided by the department and school of engineering missions. Specific highlights of my demonstrated teaching, research, service and administrative expertise are:
  - Courses taught: Civil Engineering Undergraduate (UG) degree requires 3 credit hour courses of CE481 Transportation Engineering I, CE417 Construction Management, CE315 Construction Materials (I have been teaching these UG courses and one senior/ graduate elective course every academic year.) Also, I have been teaching ENGR597-25 Geospatial Analysis course every year since 2008 May Intersession. This course is now a formal CE495 new course for engineering applications).
    - Developed new courses (CE417 Civil Engineering Lab, CE570 Infrastructure Management, CE590 Airport Planning and Design, ENGR597-25, ENGR693-2 Advanced Statistical Analysis and Sampling Design)
    - Updated several courses (CE207 Surveying, CE315, CE417, CE581 Transportation Engineering II, CE585 Highway Pavements, ENGR207 Computer Graphics, ENGR647 Pavement Management System)
    - Used new online instruction materials for web-based BlackBoard since 2003
    - Prepared course lecture notebooks in print for CE315, CE417, CE481, CE570, ENGR597-25All courses are 3 credit hours except three 1-credit hour courses (CE207, CE407, and ENGR207).
  - I teach concepts of total quality management (TQM) and system engineering in Construction Management and Infrastructure Management courses, developed and taught by me, and used this tool for improving teaching of undergraduate courses and enhancing curriculum for new courses such as Geospatial Analysis. The TQM approach has been implemented in every industry to enhance quality and productivity. During the last few years I used the TQM approach successfully to improve student participation in class, attain better grades, and discourage absences through annual anonymous student feedback and assessment survey in every course. Both ABET and SACS accreditations require effective course assessment tools which can greatly benefit by implementing TQM approach.
  - I have successfully collaborated outside school of engineering, as well as with industry, recognizing multidisciplinary emphasis to sponsored research grants that helped increase undergraduate and graduate research opportunities. I have demonstrated diversity in mentoring graduate students (from the U.S. and 11 other countries) and employed more than 50 undergraduate student workers and supported 30 graduate students to work in research projects during my tenure at the university. Some of these senior students continued and completed their graduate degrees under my direction. Three PhD and 20 MS degrees were completed under my guidance at the University of Mississippi. Three of my former students earned their doctoral degrees at other universities. I was external reviewer of dissertations of 5 Ph.D. degrees from Finland, India, Australia, and Thailand.
- Total 17 Major external research grants received including 10 CAIT projects, totaling over 5 million dollars from: National Academies/Federal Aviation Administration (FAA), National Academies/U.S. Agency for International Development (USAID), U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), Mississippi DOT/FHWA, NASA-MSCI/MDOT, USDOT –ITS grant appropriated

by Congress, 5-year CAIT transportation related air quality project as a part of USDOT (RSPA, now RITA) funded and Mississippi State University led consortium, RITA funded UTC grant to university consortium, and bridge cathodic protection project of IBSi, 2001-2002.

- I serve as Associate Director of Research of the National Center for Intermodal Transportation for Economic Competitiveness (NCITEC). CAIT partnered with Mississippi State University led university consortium to win this national university transportation center grant of \$3.5m from the U.S. DOT. More info at the web link. <http://www.olemiss.edu/projects/cait/ncitec/> <http://www.ncitec.msstate.edu/home/executive-committee/>
- I was awarded a grant of \$71,500 from the Mississippi DOT on top-down cracking in asphalt pavements, 2012-2013. The most recently completed project for the Mississippi DOT was "Performance evaluation of roundabouts for traffic delay and crash reduction in Oxford, MS," 2008-2011.
- As a part of \$ 94,000 CAIT's National Academy of Sciences/USAID Intelligent Transportation System (ITS) project (2007-2010), I employed four graduate students (one PhD, three MS), and ten undergraduate students from diversified backgrounds on this project. Two senior students continued as graduate students and one of them (Katherine Osborne) completed her MS thesis in December 2009 and the other (Jessica Headrick) completed her MS in May 2010. I produced 3 MS and one PhD degrees on USAID funding support. I developed a complete road network and landuse database and annual traffic volume demand spatial maps for the megacity of Karachi through intensive guidance to student workers and graduate students. During my annual visits to the host country, I trained 1,566 Pakistani professors, students and professionals including 13% women, as well as 44 Americans in the U.S. (57% women). The major roads with congestion and safety problems were identified and vehicle emissions were calculated. One of the major outputs of this project was a white paper on "Urban transportation policy for Karachi and other cities", It is available through the National Academies web site. [http://sites.nationalacademies.org/PGA/dsc/pakistan/PGA\\_052872](http://sites.nationalacademies.org/PGA/dsc/pakistan/PGA_052872)
- As a part of \$ 350,000 CAIT's National Academy of Sciences/FAA project for laser based airport obstruction surveys (2007-2009), I employed one full-time Research Associate (a CE graduate of May 2008), four graduate students (one PhD, three MS), and five undergraduate student workers from diversified backgrounds on this project. I led a team of experts including scientists from the NOAA National Geodetic Survey to develop airborne laser technology specifications for conducting airport obstruction surveys. The results are published in ACRP Results Digest 10. <http://www.trb.org/Aviation1/Blurbs/163789.aspx>
- Accuracy and cost effectiveness of airborne laser terrain mapping for highway alignment was evaluated in another CAIT study "Transportation Industry Applications Utilizing Laser Terrain Mapping Technology," for the NASA Stennis Space Center and Mississippi DOT, 1999-2002. LIDAR is now an accepted technology for highway planning and design projects. Dr. Uddin also assisted the City of Oxford for citywide airborne laser terrain mapping including Oxford-University Airport, 1999-2000.
- A recently completed geospatial project was "New Orleans DELTA Project- New Orleans InSAR Study for Assessment of Katrina Impacts," sponsored by the Canadian Space Agency-NASA-USGS (for data support, 2007-2009). A new geospatial methodology was developed as a part of a PhD dissertation for rapid assessment of damages from hurricane disasters and floods.
- I conducted a 5-year study on transportation related air quality and environmental assessment using remote sensing tunable laser technology in a subcontract for the Mississippi State University led university consortium project, "Applications of Remote Sensing and Related Spatial Technologies to Environmental Assessments in Transportation," funded by the USDOT (RSPA; now called RITA), 2000-2005.
- I was co-PI on the FHWA project "Finite Element Models of Roadside Safety Structures," 1994-1998. We were one of only seven universities nationwide selected for this award of excellence. This project enhanced my research capabilities to use finite element (FE) modeling and simulation programs for evaluating crashworthiness of roadside safety structures and car/pickup and for later applications in pavement analysis.

- I secured major asphalt laboratory equipment grants from the FHWA and Mississippi DOT and established the first Superpave Asphalt Laboratory among universities in Mississippi, 1999-2001.
- I conducted several highway nondestructive evaluation projects for the Mississippi DOT. These include:
  - A study on “Ground Penetrating Radar (GPR) Applications,” 2005-2006.
  - “Subgrade Characterization For Highway Pavement Design,” 1999-2000. I developed a new software to analyze dynamic cone penetrometer data for direct use in pavement design.
  - "Improved Asphalt Thickness Design Procedures for New and Reconstructed Highway Pavements," 1996-1999. I evaluated performance of several modified asphalt sections of I-55 test site to evaluate performance of Superpave mix design and modifiers. I also developed a new asphalt pavement design program considering material degradation due to environmental and seasonal variability.
  - “Diagnostic Evaluation and Performance Study of Portland Cement Concrete Pavements in Mississippi,” 1993- 1995. In this study, I used GPR, thermal infrared imaging, nondestructive FWD deflection tests, laboratory tests on cores, and 3D-FE simulations to establish causes of early failure of the concrete highway pavement on US Highway-78 and made rehabilitation recommendations.
- I am currently implementing “3D Visualization Modeling” applications in graduate research projects using stereo pairs of satellite/aerial imageries and digital terrain elevation models. These visualization models are expected to be useful for improving flood modeling in urban environment, virtual training of emergency management workforce, and enhancing communications with administrators and the public.
- Other examples of my mentoring and management approaches are:
  - As acting chair of civil engineering department at the University of Mississippi in Fall 2007, I interacted with faculty and staff through weekly meetings, involved faculty in meeting with alumni and advisory committee, processed an associate professor’s tenure application dossier, conducted a PhD qualifying exam, compiled both UG and graduate course assessment reports with faculty participation and inputs for SACS evaluation, secured end of the year donation from a consulting company to the department, and supervised department staff with compassion and respect culminating at Christmas party with all faculty and graduate/senior students.
  - As graduate program coordinator for the department (2002-2009), I compiled the first departmental graduate student manual with periodic updates in consultation with the department chair, established protocols of full faculty participation in graduate admission process, and coordinated faculty review of new applicants and admission recommendations.
  - I secured many external research project grants totaling over several million dollars with successful industry collaborations and gifts. The most notable gifts and donations included:
    - Geospatial industry’s 4.6 million dollars gift of GeoGenesis 3D geospatial analysis software in August 2009. This university wide gift is being implemented in civil engineering labs (remote sensing, visualization, and computer graphics labs).
    - No-cost Intergraph’s GeoMedia Pro GIS software (license cost over 100,000 dollars annually) starting in 2004. This software is used in the “Geospatial Analysis” course for seniors/graduate students that I developed and teach using a lecture notebook based on CAIT research studies.
    - Spaceborne and airborne remote sensing industry’s donations of remote sensing data for graduate research (LIDAR data and satellite imagery data).
    - First major upgrade of Computer Graphics Laboratory in 2000, involving upgrade of operating software from DOS to Windows, upgrading AutoCAD software, and increasing the number of computers and furniture to house 25 students at a total cost of \$120,000 donated by alumni.
    - Established the following new CE laboratories:
      - Asphalt Testing Laboratory equipment for civil engineering materials course (*Superpave*

*Asphalt Binder Lab, Asphalt Mixture Lab, and Asphalt Testing Lab*), established by using \$125,000 Grant from the Mississippi DOT and \$110,000 Grant from the FHWA, 2000

- CAIT Remote Sensing and Geospatial Data Analysis Lab, 2003
- CAIT Transportation Modeling and Visualization Lab, 2008; being upgraded to ITS lab

- I served as a legal expert advisor to attorneys in several road safety related cases in the southeast and conducted several consulting projects in the U.S. and Mexico.
- My transportation research work was mentioned in the TEA-21 congressional transportation bill of 1998-99. Detail description of my university of Mississippi (UM) experience is provided in my long academic CV. <http://www.olemiss.edu/~cvuddin/DrUddin-CV.pdf>
- I have received extensive news media and TV/video coverage of road safety, ITS and NCRST-E air quality projects, pavements, Hurricane Katrina disaster and New Orleans levees repair work and other noteworthy accomplishments on local, state and regional, national, and international levels. Several news releases are available through the UM web news desk and CAIT web page. <http://www.olemiss.edu/projects/cait/home/> Some examples of news coverage and students' evaluations follow.

## **MENTORING AND STUDENT EVALUATION**

*A.J. (Jim) Ferguson, Jr., P.E., MBA, CFM: Chief Engineer, City of Baton Rouge, Louisiana. (BS, 1995 civil engineering) e-mailed in March 2012..... I am glad you are still in the game – you are one of the best, a true asset to the program (civil engineering at University of Mississippi)...*

*Bailey Hewes (BS, May 2011) wrote in March 2011... Thank you Dr. Uddin that really means a lot to me. You've been a great teacher and mentor ....*

*Jessica Ellen Headrick (BS, December 2008; MS, May 2010) who worked as CAIT research Assistant through May 2010 e-mailed on February 23, 2011..... Hi Dr. Uddin!!! Yes I did get a job at MDOT! Thank you for all your advice and help. I currently work under Jeff Pierce in planning. I really enjoy my job. I get to do a large variety of traffic planning and traffic management. My background from working with you really helps me on a day-to-day basis, and I work with a lot of familiar programs (including GeoMedia). You established a great educational and work background for me and I thank you for that!.....*

*Catherine Colby Willis Wesley (BS, May 2008) who worked as CAIT research assistant from August 2007-May 2008 and again as CAIT Research Associate through December 2008 e-mailed on February 8, 2011..... Hi Dr. Uddin, Colby here! I just wanted to update you. I am working at MDOT in Roadway Design. I am loving it so far! How are things in Oxford? I want to come say hello next time I am that way. Any advice? I got certified in Microstation and working on GeoPak now. Anyway, just wanted to say hello and see how you were doing..... My experience with you helped me get the job here so I just wanted to say thank you for all you did for me during and after college!*

*Edmond Woods (BS, May 2008) wrote in January 2009.... Thanks for being a good teacher and helping me. You are the reason for my success today. Please call me when you get this card.*

*Katherine K. Osborne (BS, May 2008; MS 2009, ITE Chapter).... Thank you so much for all the support, guidance, and encouragement you have provided Katherine..... The Osborne Family, November 2008.*

*Brandon J. Rut (BS, May 2003) wrote in May 2005.... I appreciate your help with the grad. Program. Ole Miss Engineering seems to be in a growing stage and it is a great thing. I am proud to be a graduate of Ole Miss Engineering and I believe that professors like you have prepared me to take on any assignment..... Thanks a lot for everything.*

*Chad D. West (BS, December 1993), Area Manager, B & B Concrete Co., Inc., Tupelo wrote on February 13, 2003... I just wanted to drop you a note and express my appreciation to you for your contributions to the*

Civil Engineering department. I appreciate your leadership and desire to allow the "industry", such as B & B Concrete, to be a part of your classroom curriculum... I am also grateful to you for your influence on me while I was a student. Your encouragement and instruction helped to maintain my motivation during my last semesters at the university.

*Van Gilbert (BS, May 2002; MS, Georgia Tech; JD, University of Mississippi, May 2005; now a practicing patents attorney) wrote in June 2002,..Dear Dr. Uddin, I want to thank you for the opportunity to work for you this past semester. I always thought most of one's education was in the field, and working for you helped me solidify my education. Thank you again for everything.*

*Johnny Kelly (BS, May 1999, construction engineer/manager) wrote on May 20, 2002...Hello, how are you and your family doing? I am still with Bechtel, and we are up in Ashland, MS building a gas powered power plant.... Again thanks for teaching me, believing in me, and being a friend when I needed one.*

*Kim Franks (BS, May 1999), President ASCE Student Chapter and Engineering Student Body.....Dear Dr. Uddin, I would like to thank you for your support....Thank you for making Engineering week a success.*

*Ben Sale, Lieutenant J.G., U.S. Navy (BS, May 1998) wrote on Feb 9, 2002 from the post 9/11/2001 Afghanistan war theatre ...Hey Dr. Uddin, How is the professor life treating you? All is as good as it could get here. I am aboard the U.S.S. Roosevelt in the North Arabian Sea. We have been at sea for 140 days without making a port call....We have been doing the same missions over Afghanistan since the second week the war started.....I have enclosed a check for \$50 made out to you. Hopefully it can be used for the Canoe team's bills this year.....Once again, I thank you for all that you have done for me in college, you were a fantastic professor. I wish you and your family all of the best.*

*Planet Forward (George Washington University) – video blog by UM Journalism student on Dr. Uddin's innovative transit research, January 6, 2012 <http://planetforward.org/idea/personal-rapid-transit-system-a-solution-for-cities/>*

The current City Engineer of the City of Oxford completed his professional experience under my guidance and used this experience for his PE license. I guide students in ITE student chapter and other graduate students participate and win chapter and paper awards each year. Several of my UG student trainees have risen to the highest student leadership roles.

The 2007 Epps/Dart inaugural award by Deep South ITE section recognized my teaching and mentoring of students.

# THE MANTLE

*Center for Excellence in Teaching and Learning*

## Real Applications Inspire Students

Dr. Waheed Uddin, Professor of Civil Engineering, approaches students as he approached construction jobs. The raw materials are there; the specifications for success are there; knowledge of the content needed is there; and



Dr. Waheed Uddin

Dr. Uddin is the maestro to make students successful. And making them successful earned him the honor of being the first recipient of the Epps/Dart Award for Teaching Excellence of the Deep South Section of the Institute of Transportation Engineers.

Dr. Uddin reveals an abiding love for teaching and working with students as evidenced by comments from former and current students Colby Willis, Lt. Hely Saul Gonzalez, and Marni Kendricks. Willis says, "He is a mentor more than just a teacher; he wants us to do well, he guides us and makes us think about what we are doing and what we will be doing." Kendricks writes, "He has influenced many practicing civil engineers in this state and beyond. We are very appreciative of what we learned and took with us into the real world." Lt. Gonzalez, an active naval officer, writes, "He was a mentor to me when I was in engineering school and continues to be a mentor to me today! It's nice to know that I have reach-back capabilities to Dr. Uddin and the School of Engineering at the University of Mississippi."

The feeling that one gets from Dr. Uddin and his students is that just as he was influenced by

work outside academia, he lets students know that they are influenced by work in the field. From Dr. Uddin's early studies in Pakistan, to work in Saudi Arabia, to work with Gulf Canada and other companies, his research is field-based and his excitement is evident. Dr. Uddin works on materials used in construction of airports, and he has his students involved on site to see results of and issues with the construction. The November, 2006, photo was taken when one runway was closed at the Memphis International Airport to give students a chance to study materials up close.

Dr. Uddin, with co-authors, wrote *Infrastructure: Design, Construction, Maintenance, Rehabilitation, Renovation*, one of the very first books to use "infrastructure" in civil engineering and construction processes. His personal and research experiences have made all the difference in his life and teaching.

continued on Page 4



<b>INSIDE</b>	Calibrated Peer Review.....	<b>2</b>	Book Review.....	<b>3</b>
	Teaching Tips, Resources.....	<b>3</b>	Award, Advisory Board.....	<b>4</b>

THE UNIVERSITY OF MISSISSIPPI

## Real Applications Inspire Students continued from Front Cover

Always ready to use science, physics, chemistry, and economics to solve problems, he wants students to be able to do the same type of work. For example, he takes a group of students in a materials course to the B&B Concrete Plant in Tupelo where they can get their hands dirty, learn about industry technology use on site, and relate the classroom theory to the field.

Professor Uddin describes his UM students as being very disciplined, truthful and trustworthy resulting in him allowing them to help with his research. He describes one student as being given an assignment, setting up the lab to do the work, training others to help do the work, and then asking Dr. Uddin not to micromanage the work itself. This example shows a level of Professor Uddin's trust in the students.

As advice to other faculty, Dr. Uddin, after being strongly influenced both by teachers and people in the field, says:

- Understand the students
- Get to know them
- Keep an open door
- Read your student evaluations and act on what you can change
- Expect class attendance; find ways to discourage absences
- Develop evaluation instruments for more frequent use than the end of the semester only

- Assess early
- Get to know staff as well as other faculty members
- Excite students; let them see theory used
- Continually emphasize good content

Dr. Uddin is a faculty member who deserves a teaching award.

## Grants and Awards

### Graduate Instructor/Teaching Assistant Award

A \$1000 graduate instructor/teaching assistant award for exemplary instruction will honor a student currently teaching at the University of Mississippi. The award, established by the Center for Excellence in Teaching and Learning with monetary support from the University of Mississippi Foundation, recognizes that these students fill a needed teaching role in an outstanding way. For information about the award and the nomination process, see [http://www.olemiss.edu/depts/cetl/GITA\\_award.html](http://www.olemiss.edu/depts/cetl/GITA_award.html). **The deadline for the 2008 award is March 1, 2008.**

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## The University of Mississippi



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# THE Oxford Enterprise

Sunday, November 29, 2009

## News



**HITTING THE ROAD:** Waheed Uddin has always been fascinated by projects involving water and highways. PHOTO CREDIT: Elli Williams/The Oxford Enterprise

### **Waheed Uddin paves the way to better road management** Civil engineer leads UM program to improve infrastructure technology

By Lynn Lofton  
The Oxford Enterprise

An Ole Miss civil engineering professor is giving students hands-on experience and bringing international attention to the university through worldwide consulting.

Dr. Waheed Uddin, professional engineer, has more than 30 years experience in working and teaching. The native of Pakistan earned a bachelor of engineering degree at the University of Karachi and a master's at the Asian Institute of Technology in Bangkok, Thailand. He came to America in 1981 to study at the University of Texas where he did research in pavement nondestructive evaluation for his Ph.D. in transportation engineering.

"It was my dream to become a teacher and Ole Miss gave me that opportunity," he said. "I did a lot of years in construction engineering, research and consulting. By the grace of God I have a lot of experience, and I am able to transfer my knowledge to students."

He came to the university in 1993 and a few years later founded the Center for Advanced Infrastructure Technology and serves as its director. The center was created to conduct advanced computer modeling and simulation, and to apply modern remote sensing and spatial technologies for enhancing infrastructure asset management and sustainable development with emphasis on surface transportation, aviation, energy and community.

"Practical experience is so important for students. We do research with a lot of field work to stay in touch with the real world," Uddin said. "I also invite practicing engineers to speak to classes."

Several years ago, Uddin's students were involved in a national project that studied materials used to construct airport runways. Other projects have included traffic count studies and remote sensing functions. The students are currently putting sensors on a road in Oxford for a Mississippi Department of Transportation study.

Chamar McDonald, a junior year student from Madison, was one of the 18 students involved in conducting the initial traffic counts for the Oxford study.

"I enjoyed it. I volunteered to do it because I think it will be useful later on," he said. "We love Dr. Uddin. He's a very funny guy, but we can tell he knows his field. He tells us exactly how he wants things, and he's always available."

[http://www.theoxfordenterprise.com/news\\_insert.htm](http://www.theoxfordenterprise.com/news_insert.htm)

11/29/2009

Graduate student Katherine Osborne has worked with Uddin three years. Under his direction she has been involved with a project for Karachi, Pakistan through the U.S. Agency for International Development. She has not traveled to Pakistan but is using high resolution satellite imagery equipment.

"Karachi is behind on infrastructure management. Their road systems are congested and over loaded," she said. "They have no traffic maps or data. We're providing GIS maps and extracting traffic data using geo spatial analysis." Hailing from Lexington, Ken., Osborne will complete her Master's degree in December and says Uddin has been a wonderful mentor.

"He encouraged me to get a Master's. He's very into research and is the faculty member that's gotten students involved in the most hands-on work," she said.

The professor is recognized as an international expert in pavement non-destructive evaluation technologies, material characterization, maintenance management, pavement performance modeling, life-cycle economic analysis, geographical information system (GIS) applications and technology transfer.

He has made numerous presentations at national and international meetings and worked and lectured on these topics in 25 countries. He has also written more than 200 professional papers and technical reports and co-authored the book, Infrastructure Management.


He's always been fascinated by big construction projects dealing with water and highways.

"They excite me and most of what I got involved with was transportation related so I wrote my thesis on that," he said. "I see it as a way to serve society. With civil engineering we're changing the terrain into something useful. I go overseas as a consultant to bring information and expertise back to Mississippi."

For the past 20 years he has been especially concerned about the environment. "I have a passion for that and teach students to have as little impact as possible on the environment," he said. "I want students to be passionate about engineering and the environment and relate it to real life."

The 60-year-old full professor says the students keep him young at heart. "They energize me," he added. "My motto is to push myself to excellence, and I try to do that with students. After they graduate, many of them let me know they are using what I taught them. That is my reward."

Enrollment is up in the School of Engineering and Uddin's class this semester has 36 students, the largest he's had in his 16 years at Ole Miss. Named to various Who's Who lists in the engineering field, he was the first recipient of Ole Miss' School of Engineering Faculty Service Excellence Award in 2001. He also was honored with the inaugural Epps/Dart award for Excellence in Teaching in 2007 from the Deep South Section of the Institute of Engineers.



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[http://www.theoxfordenterprise.com/news\\_insert.htm](http://www.theoxfordenterprise.com/news_insert.htm)

11/29/2009

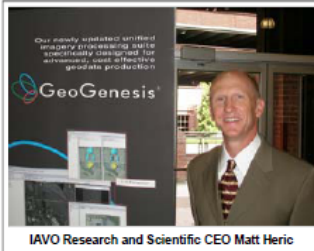
## Research Company Donates \$4.6 Million in Software for Teaching, Research, Outreach

Written by Tina Hahn  
06/26/2009

### Cutting-edge technology enhances real-world experiences

OXFORD, Miss. — **Professor Waheed Uddin's** civil engineering students at the University of Mississippi have participated in national and international research projects with hands-on work such as placing sensors on emergency vehicles to study traffic flow and walking major airport runways to examine construction materials.

And thanks to a \$4.6 million software donation, the students can enhance such real-world experiences right on their computers.



Recognizing Uddin's commitment to innovative teaching, IAVO Research and Scientific of Durham, N.C., has contributed 150 licenses of its GeoGenesis image-processing software, with 20 of the licenses designated for the UM School of Medicine.

The gift will help prepare not only engineering students but also students in an array of disciplines with cutting-edge technology through 3-D visualization and remote sensing — technologies the U.S. Department of Labor has identified as high-growth industries in the 21st century.

"Mastering these tools provides great marketability for all students," said Matt Heric, CEO of IAVO. "In fact, understanding GIS — or geographic information systems — has become a target to what it means to be literate."

"The software applications of GeoGenesis are endless, and we have been impressed with Waheed Uddin's ideas for involving disciplines across the Oxford and Medical Center campuses in what we consider to be a universitywide gift."

The software will allow students, as well as the university's research community, to fully realize the value and impact of 3-D visualization and remote sensing on earth sciences, environmental concerns, engineering, architecture, societal issues, business, education, archaeology, history, geo-politics and more. Professors at the School of Medicine will explore the software's applications with medical imaging analysis.



**M**att Heric thrives on innovation. As CEO of a successful multidiscipline software-development company, he is acutely aware of the scope of forward-looking preparation and technological resources needed to ready college students for 21st-century careers.

His company—IAVO Research and Scientific of Durham, N.C.—provided a \$4.6 million gift of GeoGenesis software to The University of Mississippi. The gift is helping advance students in an array of disciplines through the cutting-edge tech-

Waheed Uddin—professor of civil engineering, director of the School of Engineering's Center for Advanced Infrastructure Technology Transportation Modeling and Visualization Laboratory, and manager of the IAVO gift—is known for strengthening students' real-world experiences. His Ole Miss engineering students have placed sensors on emergency



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— **Matt Heric**  
CEO of IAVO  
Research and Scientific

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"Mastering these tools provides great marketability for all students," says Heric. "In fact, understanding GIS—or geographic information systems—has become tantamount to what it means to be literate. The software applications of GeoGenesis are endless, and we have been impressed with Waheed Uddin's ideas for involving disciplines across the Oxford and Medical Center campuses in what we consider to be a universitywide gift."

vehicles to study traffic flow and have walked major airport runways to examine construction materials as part of national and international research projects.

"The University of Mississippi in general and its School of Engineering in particular seem to be such positive forces of energy and innovation," Heric says. "If we are asking students to study, grow and succeed, they must have adequate resources. IAVO is pleased to provide opportunities for students through this gift."

In addition to benefiting students and researchers, the IAVO gift will be utilized in UM's outreach to the state in effective emergency preparedness and responses. Three-dimensional visuals of buildings, critical lifeline infrastructure assets, terrain, highways and vehicles provide those studying potential and actual disasters a more in-depth look at the impact of such crises.

Heric and IAVO have given leading technological tools to students and researchers, who now can push the technology forward.

<http://infrastructureglobal.com/thailands-post-flood-seminar-lessons-learned-from-2011-great-flood-disaster-and-future-directions-for-flood-prevention/>

<http://203.159.12.32:8082/AIT/news-and-events/2011/news/ait-seminar-presents-lessons-from-the-thailand-flood/view>



you are here: [home](#) → [news-and-events](#) → [2011](#) → [news](#) → ait seminar presents lessons from the thailand flood

## **AIT seminar presents lessons from the Thailand flood**

**Experts from various streams suggested remedial measures and emphasized the need to learn lessons from the Thailand flood. At a seminar on "Lessons learned from the 2011 Thailand Flood Disaster and Future Directions for Flood Prevention and Mitigation," organized by the Asian Institute of Technology (AIT) and ASEAN Affairs in association with the Center for Advanced Infrastructure Technology (CAIT), University of Mississippi, panelists stressed the need for knowledge sharing, capacity building, and preparedness.**

Prof. Said Irandoust, President, AIT, remarked that the lessons are relevant not only for Thailand, but also for other countries in Asia and beyond. Narrating the developments leading to the flood at AIT, the President remarked that the Institute tried to utilize its own knowledge base, besides its internal and external expertise, to thwart the threat of the flood "However the forces of nature proved to be too strong," he added.

Prof. Irandoust added that AIT never stopped working despite the flood, and the Institute was one of the first institutions of higher learning to restart academic activities. "We plan to rebuild AIT as a sustainable environmentally friendly campus that will act as a showcase for the rest of the world," he added.

The AIT President added that the Institute will organise more seminars to help facilitate knowledge sharing and exchange of views. AIT will continue to help in capacity building for flood protection, and plans to be a knowledge hub for sharing data pertaining to water management.

Mr. Swarup Roy, founder and CEO of ASEAN Affairs remarked that it is people who will have to act to "Save Our Planet". Stating that we need an Arab Spring to save the planet, he stated that the issue has to be resolved by the power of the people. He quoted the prominent scientist Dr Art-ong Jumsai Na Ayudhya who had predicted that Bangkok would be underwater in his lifetime. We have poisoned the air, water and earth, and we are doing awful things to the three awesome elements that sustain life, he added.

Dr. Pornsak Suppataratarn, Technical Advisor (Flood Control Expert) TEAM Group of Company presented a simulation on the flow of flood waters in Thailand. He remarked that though the rainy season in Thailand is from May to October, 80 per cent of rainfall occurs between August to October.

He presented flood mitigation concepts, along with both short-term plans and long-term measures to thwart any further flood disaster in Thailand. Repairing of damage, flood control facility, and strengthening of dykes were listed as important short-term plans by Dr. Pornsak. He suggested that a Ring Road project created with an investment of 300,000 million Baht could emerge as a major flood protection measure in Thailand.



Dr. Masahiko Nagai, Associate Director, Geoinformatic Center (GIC), AIT elaborated on the work done during the flood in Thailand. He remarked that immediately after the declaration of the International Disaster Charter, AIT's GIC produced satellite images and shared them with various agencies in Thailand as well as globally. AIT's students, including doctoral students were involved in producing these images, he added. Dr. Nagai, who was also project manager during the International Disaster Charter activated during the tsunami in Japan earlier in March 2011, is now producing maps based on satellite imagery following the flash flood in the Philippines.

**Dr. Waheed Uddin**, Professor of Civil Engineering and Director, CAIT, University of Mississippi, USA. and AIT alumnus (1975) remarked that the Early Warning System (EWS) in US had helped create a system where the number of fatalities following natural disasters like flood had reduced dramatically. Dr. Waheed added that communities have to be prepared for natural disasters, and there is a need to rely on social media to help communicate with each other. He stressed the need to investigate the cost of human trauma following a disaster. He also made a detailed presentation on the use of LIDAR as a technology for flood disaster prevention and infrastructure planning.

The presentations delivered by the delegates can be downloaded from these links.

[Save Our Planet by Mr. Swarup Roy](#)

[2011 Flood of the Century by Dr. Pornsak Supparatarn](#)

[Sentinel Asia and International Disaster Charter for flood in Thailand by Dr. Masahiko Nagai](#)

[Airborne LIDAR Remote Sensing and Geospatial Technologies for Flood Disaster Prevention and Infrastructure Planning by Dr. Waheed Uddin](#)



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<http://infrastructureglobal.com/bangkok-post-flood-recovery-inspection-of-ait-campus-buildings-and-other-infrastructure-assets-for-post-flood-restoration/>

**Laura Giannini** February 2, 2012 at 5:18 pm #

This is a wonderfully written article that helps very much understanding the level of need in Thailand. It is sometimes difficult to find information on the current status of damage and support required, but this article covers all subjects in a superb way. I belong to a non-profit foundation that rebuilds schools after natural disasters and Dr Uddin revealed to be a great resource and supporter. Thank you very much!

**Laura Giannini**, Program Developer, Happy Hearts Fund, New York

<http://happyheartfund.org/>