CEE 423 CLASS FIELD TRIP
Hoosic Tunnel
Dear Students, Alumni, and Friends,

We are happy to introduce the 2nd of this year’s newsletters. Although many of you follow the department through electronic media (the departmental webpage - https://cee.umass.edu/ and student organization webpages), we felt it was important to also provide a traditional newsletter of the department’s events.

This past year has been an outstanding one for the department. You will read in the pages that follow about some of the exceptional accomplishments of our faculty, students, and student organizations. You will also read about some of the outstanding special speakers that have come to campus to share their research results and insights with our students. In addition, you can read about the induction of new members into our Academy of Distinguished Alumni. You will also meet our newest faculty, Dr. Chengbo Ai, as well as reading about the teaching and research of Drs. Eleni Christofa, Don DeGroot, Kara Peterman, and Guoping Zhang. In addition, you can read summaries of our student organizations and awards won by our students last year.

Our faculty now includes 27 tenure-track faculty members. We have hired 12 new faculty since 2008. Our department has maintained its four programmatic areas: Environmental and Water Resources Engineering, Geotechnical Engineering, Structures and Mechanics Engineering, and Transportation Engineering. New hires have occurred in all of these areas. There continues to be a great deal of interactions between faculty in different programs, as well as faculty working with other departments, on this campus and across the country.

Our undergraduate program remains very strong, with more undergraduates enrolled this year than any time since the 1990s. Similarly, the number of graduate students in our department is larger than any other time in the past, with more than 69 Doctoral students and 53 Master’s students. The department’s research expenditures also recorded an all-time high, with more than $13.0 million in expenditures during the last fiscal year. This was more than any other department within the College of Engineering.

Our undergraduate students are preparing themselves for extremely exciting careers. Sustainable infrastructures and sustainable cities are of particular interests to our students. Recent extreme events, such as hurricanes Harvey, Irma, and Maria, and droughts and forest fires in the Southwest, Northwest, and Southeast, have encouraged our students to consider what role civil and environmental engineers will play in maintaining our current cities, designing resilient infrastructure, and planning for more sustainable cities in the future. Climate change and its impacts, a reality confirmed by the vast majority of climate scientists world-wide, increases the responsibilities placed upon our civil engineering students to learn how to effectively plan for the infrastructure of the future.

We hope that as you read this newsletter you will get a flavor of all of the exciting things that are happening on campus. We hope that you will remain in touch with us through whatever media you prefer. Feel free to share this newsletter with others interested in our department.

Sincerely,

Dr. Richard N. Palmer
Department Head
Civil and Environmental Engineering
29TH ANNUAL
TSUAN HUA FENG
DISTINGUISHED LECTURE SERIES

COLLABORATIVE RESEARCH WITH DRINKING WATER UTILITIES TO ADDRESS THE EMERGING ISSUES OF HARMFUL ALGAL BLOOMS

Presented by Dr. Michèle Prévost, Ph.D.
Polytechnique Montréal

October 5, 2017, Dr. Prevost presented a model of collaborative industrial research that has been a great success across Canada. Industrial research chairs were created by NSERC (Natural Science and Engineering Council of Canada) to foster durable partnerships and produce research outcomes that support the needs of the industrial partners, while ensuring the production of high quality scientific results. Harmful algal blooms (HABs) are a rising concern across the world as climate change is increasing the risks of toxic cyanobacterial blooms at water intakes of drinking water plants. As an example of collaborative research, Dr Prevost provided an overview of the research activities on the detection of toxic cyanobacteria in source water, the management of cyanobacteria and toxins within drinking water treatment plants, and the development of innovative treatment solutions for water and sludge to prevent the accumulation and breakthrough of toxins in drinking water. Regulatory and operational implications of research outcomes were also discussed.

Dr. Prévost has more than 25 years of experience in research and technology in the areas of drinking water treatment and distribution. Since 1992, she holds an Industrial Chair on Drinking Water of the Natural Sciences and Engineering Council of Canada (NSERC) Polytechnique Montréal and founded the CREDEAU laboratory, a unique multi institution water technology platform. Dr. Prévost has completed applied R&D on source protection (fecal contamination, CSO discharges, micropollutants), water treatment (removal of disinfection, pharmaceuticals and cyanotoxins) and various aspects of distribution systems (biostability, pathogen regrowth, integrity & intrusion, Legionella control, hydraulic and quality modeling). She led several multi university Canadian Water Network initiatives (lead in drinking water, distribution system integrity).

Dr. Prévost has authored over 155 refereed publications, is the editor of a reference book on Biodegradable Organic Matter and has given over 350 talks in regional, national and international conferences. She was a member of the Walkerton Commission, an advisor to the Hong Kong Inquiry on Excess Lead and is the co-Chair of the NSERC Industry University CUG committee of NSERC. She was the 2016 recipient of the A. P. BLACK award of the American Water Works Association (AWWA) for outstanding research contributions to water science and water supply rendered over an appreciable period of time.

Tsuan Hua Feng, Ph.D.
Feb. 17, 1918 - Sept. 4, 1986
The Tsuan Hua Feng Distinguished Lecture Series was established to honor the memory of “Tom” Feng, who served on the faculty at the University of Massachusetts for 31 years. Professor Feng joined the faculty in 1951 after receiving his B.S. in Civil Engineering in 1940 M.S. and Ph.D. degrees from the University of Wisconsin in 1946 and 1950. Dr. Feng was appointed as the first Sanitary Engineering professor at the University. In 1965 he established the Sanitary Engineering Program, which was later renamed the Environmental Engineering Program, and served as Director until 1974. Upon his retirement in 1982, Tom was appointed Emeritus Professor.
Seven of the eight 2017 recipients of the CEE Academy of Distinguished Alumni (left to right): James Malley, David Gaboury, Robert Ratay, Gillian Gregory, Anatoly Darov, Michael Hornbrook, and Thomas Baillie. Not included in the photograph: James Chaney.

**Annual Banquet**

The 2nd Annual Banquet recognizing the 2017 inductees to the UMass Amherst Department of Civil and Environmental Engineering Academy of Distinguished Alumni was held the evening of September 29th, 2017 at the Marriott Center in the Campus Center.

These awards recognize the outstanding contribution of the inductees to the engineering profession, as judged by the Civil and Environmental Engineering Advisory Board and reviewed by current Civil and Environmental Engineering faculty. The inductees were joined by family, friends, retired faculty, and active faculty in the department, as well as the Dean of Engineering and undergraduate and graduate students. Each inductee was given the opportunity to speak to their experience at UMass, their career, and their plans for the future.
2017 Inductees

Academy of Distinguished Alumni

Executive Vice President of Bond Brothers

**James Chaney**, BSCE 1979*, M.S., MBA 1987
Retired after 17 years with Mercator Asset Management LP

Attorney and management consultant at Darov & Associates US PLLC, a firm he founded in August 2017

**David R. Gaboury**, BSCE 1976*, M.S. 1978
President and Chief Executive Officer of Terracon since 2002 and serves as Chairman of the Board of Directors

Senior Project Manager at GEI Consultants, Inc., specializing in dam safety

**Michael J. Hornbrook**, BSCE 1979*
Chief Operating Officer of the Massachusetts Water Resources Authority

Professor of Civil and Environmental Engineering at the University of New Hampshire and Environmental Engineering Program administrator

Consulting structural engineer in private practice and adjunct professor at Columbia University in New York

*Year of graduation from UMass Amherst*
Managing Risks to Infrastructure with Real-Time Monitoring of Performance

Presented by Dr. W. Allen Marr
Founder and CEO of Geocomp

Dr. W. Allen Marr’s presentation on April 6th, 2017, addressed the nature of risk to typical infrastructure facilities and how those risks can be mitigated. Construction of new infrastructure and operation of existing infrastructure facilities can create major risks to society and the environment. These risks can include loss of life, major property loss, significant environmental damage, and disruption of societal interactions and commerce. One effective way to help reduce these risks is to monitor performance with sensors so that emerging risks can be detected early enough for mitigation measures to be taken to stop a risk from fully developing or to mitigate its impacts.

Dr. Marr’s presentation focused on the nature of risk to typical infrastructure facilities and how those risks can be mitigated by using sensors, computers and the Internet to provide real-time data on the performance of these facilities. Concepts of risk identification and risk management, as well as approaches to monitor risks with modern technological tools were explored. Key points were reinforced by case studies that highlighted historical failures and emphasized by challenges in recent global projects. Challenges in using performance monitoring technology to mitigate risks was especially valuable for students.

Dr. Marr founded and leads Geocomp, one of the US foremost providers of real-time, web-based performance monitoring of civil engineering structures, including dams, levees, deep excavations, tunnels, bridges, buildings and utilities. Dr. Marr and his Geocomp colleagues developed and use the concept of Active Risk Management to help clients identify and proactively manage risks associated with construction and operation of infrastructure. He was a member of the US Army Corps of Engineers Interagency Performance Evaluation Task Force to determine the causes of failures of the New Orleans flood protection system and served as an expert for the US Department of Justice in claims exceeding more than $60 billion related to the breaching of the levees protecting the Lower Ninth Ward.

Dr. Marr earned his M.S. and Ph.D. degrees in Civil Engineering from MIT where he taught and led research for 10 years. He received his B.S. in Civil Engineering from the University of California, Davis. He was elected to the National Academy of Engineers in 2008 for “innovative applications of numerical methods, risk analysis, advanced laboratory techniques and field instrumentation to geotechnical engineering and construction.” In 2015, he was elected to the Moles, the US organization of preeminent tunnelers.

SAVE THE DATE
March 22, 2018
History & Heritage 2018 Lecture
To Be Presented by
Chris Hendrickson
Hamerschlag University
Professor Emeritus,
Civil and Environmental Engineering,
Carnegie Mellon University
2-4PM
Great Hall in the Old Chapel
Alumnus Dr. Shawn P. Kelley Named Vermont's 2017 Engineer of the Year

A civil engineer specializing in geotechnical engineering, Dr. Kelley is a shareholder and member of the Board of Directors of GeoDesign based in Middlebury, CT. He works in the Windsor and South Burlington, VT offices. Dr. Kelley received his bachelor’s, master’s, and Ph.D. degrees from the University of Massachusetts Amherst, where he was inducted into Chi Epsilon, the civil engineering honor society and has received the College of Engineering Outstanding Junior Alumni Award. He is the author of over 25 technical publications, reports, and presentations. Dr. Kelley is a registered Professional Engineer in the State of Vermont.

Dr. Kelley serves as a senior associate-in-charge for engineering projects throughout the state of Vermont for GeoDesign. He also manages the Vermont’s office geotechnical laboratory. Dr. Kelley’s professional experience has included the Cross Street Bridge project in Middlebury, complex rail bridge replacements in Chester and Cavendish following Tropical Storm Irene, and novel geotechnical solutions in road repair in Weybridge.

He is active in the Vermont section of the American Society of Civil Engineers (ASCE), having served as the section’s president, among other offices; he is a member of the American Council of Engineering Companies (ACEC), and he is a member of the Vermont Society of Engineers. On a regional level, Dr. Kelley served as ASCE Region 1 Governor representing Civil Engineers from New England, New York, New Jersey, and Puerto Rico. Currently he is serving as a member on the ASCE national Leadership Training Committee, a group that develops training programs for leaders within the organization across the U.S.

Dr. Kelley is a board member of the Conservation Commission for the Town of Hartford and has served as vice chair of the Hartford Solid Waste Committee. He as also volunteered his time with COVER, a home repair service for local folks in need. Dr. Kelley lives in Quechee, VT with his wife and son. He was recognized for his accomplishments at the annual Engineers Week banquet held at the Doubletree Inn in South Burlington on February 24, 2017.

Upper left: Shawn is making construction observation notes at a site in Vermont. Lower left: Shawn with his wife Beth and son Graham in Truckee, CA. Above: Shawn is installing geotechnical instrumentation for a large construction project in Valhalla, NY for NYCDEP.
Dr. Chengbo Ai joined the department in September of 2017. He received a B.S. in Electrical and Computing Engineering from Peking University in China and a Ph.D. in Civil and Environmental Engineering from Georgia Institute of Technology. For the past three years before joining UMass, he was a research engineer at Georgia Institute of Technology where he conducted research on improving the efficiency and cost-effectiveness of transportation asset management practices in state and local transportation agencies.

With a background in both electrical engineering and civil engineering, Dr. Ai’s interdisciplinary research focuses on developing computational models, automated algorithms and hardware systems as they are applied in the fields of transportation asset management, geometry design and roadway safety, pavement preservation and maintenance, and many other critical transportation applications. He aims his continuous effort towards establishing a comprehensive, spatially-enabled transportation infrastructure and asset data platform through employing the emerging sensing technologies (e.g., light detection and ranging (LiDAR), computer vision, continuous scanning laser, etc.), and developing computational data analysis techniques (e.g., image processing algorithm, geographic information system (GIS) spatial analysis, etc.).
Dr. Eleni Christofa, Assistant Professor, Transportation

CEE Transportation Assistant Professor Eleni Christofa’s research on person-based signal control is already widely cited and recognized worldwide, even though her career in transportation engineering is little more than a decade old. She has published more than 40 refereed journal articles and conference publications, and she has put together a vibrant research group consisting of three Ph.D. and two M.S. students who have received multiple awards for their research. Her research group has already been supported by three key funding sources: the U.S. Department of Energy; the U.S. Department of Transportation through the New England University Transportation Center; and the Massachusetts Department of Transportation. Meanwhile, during the past 10 years, Dr. Christofa has received more than 11 significant honors.

Christofa has been a member of the CEE faculty at UMass Amherst since 2012. Her research focuses on the development of sustainable management strategies for urban multimodal transportation systems with the use of innovative technologies. In addition to developing real-time signal control systems that improve person mobility and air quality, she is working on assessing the impact of alternative geometric designs (including roundabouts and continuous flow intersections) on emissions and safety. She also studies bicycle infrastructure treatments on driver behavior and bicycle safety.

Among other awards and honors, she has received the 2017 Outstanding Young Member Award from the Transportation Research Board (TRB) of the National Academies of Sciences, Engineering, and Medicine; a 2017 Student-Centered Teaching & Learning Fellowship, a 2016 Innovate@ Symposium Grant, a 2014 Open Education Initiative Grant, and a 2014 Sustainability Curriculum Initiative Grant, all from UMass Amherst; a 2014 ASCEExCEEd Fellowship from the American Society of Civil Engineers; a 2011 University of California Transportation Center Award; a 2009–2011 Dwight David Eisenhower Transportation Fellowship; and a 2007 Gordon F. Newell Memorial Fellowship from U.C. Berkeley.

Christofa recently received her 2017 Outstanding Young Member Award for her exceptional service to TRB and achievements in transportation research, policy, or practice. The award consists of a plaque and a $2,500 cash award. The award committee particularly noted Dr. Christofa’s clear passion and commitment to the Transportation Research Board and its mission, including her contributions to multiple standing committees and subcommittees. The TRB committee also applauded her work ethic, professionalism, and mentorship of students and young professionals.

In addition to teaching undergraduate and graduate course in Transportation, Public Transportation, and Traffic Flow Theory and Simulation, Christofa has also developed and introduced a senior/graduate course on Transportation Sustainability to the curriculum. Her commitment to exceptional teaching is evident through the four UMass awards she has received to improve her courses and teaching.

In addition, Christofa has participated in multiple outreach efforts, including co-organizing the 2016 UMass Amherst Summer Transportation Institute, a four-week program funded by the Federal Highway Administration to encourage high-school students to pursue careers in transportation. She has also lectured in the Summer Engineering Institute at UMass Amherst (2013 and 2014) and participated in mentoring activities with the UMass Women in Transportation Seminar student group and the Graduate Women in STEM (GWIS) UMass student group.

Christofa received her Ph.D. and M.S. in Transportation Engineering from U. C. Berkeley and, before that, attended the National Technical University of Athens in Civil Engineering with a specialization in Transportation Engineering.

Dr. Christofa Awarded 2017 Transportation Research Board Outstanding Young Member

Map of Bicycle-Vehicle Collisions, Cambridge MA
The College of Engineering has chosen Professor Don DeGroot of the Civil and Environmental Engineering (CEE) Department as the 2017 Outstanding Senior Faculty Award winner. He was recognized at the Senior Recognition Celebration held on Saturday, May 13, 2017.

Regarding Dr. DeGroot, the selection committee noted the depth and breadth of his record in teaching, research, and service during his 28 years at UMass and the international recognition within geotechnical engineering of his expertise in the assessment of soil behavior. DeGroot’s research has focused on soil characterization, including drilling and sampling of soils, in situ testing, laboratory measurement of soil behavior, and selection of soil design parameters.

According to CEE Department Head Richard Palmer, DeGroot has published his research in many of the major geotechnical engineering journals, including those published by the American Society of Civil Engineers, American Society for Testing and Materials, Institute of Civil Engineers, and the Canadian Geotechnical Society. He has delivered invited national and international keynote, State-of-the-Art, and State-of-the-Practice papers and presentations on site characterization and soil behavior.

Since 2007, Dr. DeGroot has been the PI or co-PI on approximately $21.5 million in research and has maintained funding from three important sources: the Massachusetts Department of Transportation, the National Science Foundation (NSF), and the MA Clean Energy Center. “These prestigious research awards have allowed him to support a continuous flow of M.S. and Ph.D. students,” said Palmer. “Since 2007, he has graduated four Ph.D. students, 10 M.S. students, and has six current Ph.D. students.”

DeGroot is a member of a wide range of professional organizations and served on the editorial boards of the Journal of Geotechnical and Geoenvironmental Engineering and the Geotechnical Testing Journal.

DeGroot was also the program coordinator of CEE’s Geotechnical Program for many years and has served on CEE’s Department Personnel Committee. Professor Guoping (Gregg) Zhang noted that, “As a mentor and colleague, Dr. DeGroot has been a role model of faculty to me, as well as many other junior faculty in and beyond our department. Without his continuous effort, leadership, and passion, the program would not have evolved to achieve a high reputation in New England and the nation for the graduate education and research.”

Professor David Ostendorf has worked with DeGroot for many years. He noted that, “Dr. DeGroot has become a geotechnical engineer of international stature, an interdisciplinary mentor to tenured and tenure track researchers in other UMass colleges and COE departments, a coauthor and co-PI with his CEE colleagues, and a leader and PI within his program.”

DeGroot has received several UMass Amherst outstanding teaching and research awards. Other awards include the American Society of Civil Engineers NY Section GZA Lecture Award (2013); Sowers State-of-the-Art Lecture Award, Georgia Tech (2006); Gledden Visiting Senior Fellowship, University of Western Australia (2005); and the Research Council of Norway Guest Researcher Fellowship (1997). DeGroot received his Sc.D. from MIT in 1989, his M.S. from MIT in 1985, and a B.S. from Concordia University in 1983.
In her very short time as an academic engineer, CEE Structural and Mechanics Assistant Professor Kara Peterman has added considerable experience, research expertise, and accomplishments to the department since she joined it in 2016. In the past few years, she has published at least 16 journal and conference papers, made presentations to various key organizations in her research area, and earned several prestigious awards. Peterman was awarded the 2017-2018 Fellow by the Frank Aydelotte Foundation for the Advancement of Liberal Arts.

Dr. Peterman – whose research expertise is in experimental and analytical behavior of cold-formed and hot-rolled steel structures, seismic behavior of cold-formed steel structures, creating and implementing sustainable design methods, and multi-hazard design – has published six papers in two key journals, the Journal of Structural Engineering and the Journal of Constructional Steel Research.

Peterman has also published conference papers on such subjects as “Thermal and structural response of thermal break strategies in steel building systems,” “Experimental seismic behavior of the CFS-NEES building: system-level performance of a full-scale two-story light steel framed building,” and “Stability of sheathed cold-formed steel studs under axial load and bending.” These and other papers were submitted to the American Composites Manufacturers Association, American Institute of Steel Construction, International Specialty Conference on Cold-Formed Steel Structures, National Conference on Earthquake Engineering, Structural Stability Research Council Annual Stability Conference, and the Structural Stability Research Council Annual Stability Conference, where she was the winner of the Vinnakota Award for best student paper.

In addition, Peterman has made such presentations as: “The Enlightened Structure: reducing material-based carbon emissions” at the Northeast Sustainable Energy Association in Boston in 2016; “Experimental performance of full-scale cold formed steel buildings under seismic excitations” at the Quake Summit at Reno, Nevada, in 2013; “Predicting seismic behavior in cold-formed steel shear walls” at the Quake Summit in Boston in 2012.

As a postdoctoral research associate at Northeastern University working under her advisor Professor Jerome Hajjar, Dr. Peterman did experimental research in thermal break strategies for cladding systems in steel buildings; interacted across industries, working to formal recommendations; developed 3D thermal models of mitigated cladding systems, and was responsible for material procurement, sensor plan design and implementation, specimen and test rig fabrication, and data analysis leading to design recommendations.

Peterman was also a teaching assistant at the Johns Hopkins University, teaching Statics and Strength of Materials and Perspectives on the Evolution of Structures. At Johns Hopkins, she won several awards and honors, including twice receiving the Departmental Service Award for outstanding service to the Civil Engineering Department, and she also garnered a Creel Family Fellowship and a Robert S. Pond Sr. Fellowship. Before that, Peterman had been a teaching assistant at Swarthmore College, covering courses in Statics and Dynamics and Mechanics of Materials.

Peterman received her B.S. from Swarthmore College and her M.S. and Ph.D. from Johns Hopkins. Her Ph.D. dissertation was on the “Behavior of full-scale cold-formed steel (CFS) buildings under seismic excitations.” The goal of this research was to generate the knowledge needed to increase the seismic safety of buildings that use lightweight CFS for the primary beams and columns and enable engineers to account for complete building performance in predicting the response of these buildings to earthquakes.

Peterman has also served as a reviewer for the ASCE Journal of Structural Engineering, Thin-Walled Structures, the Journal of Constructional Steel Research, and the Journal of Earthquake Engineering Structures.
Dr. Guoping Zhang, Professor, Geotechnical

CEE Geotechnical Professor Dr. Guoping (Gregg) Zhang has accumulated a broad and deep record of international academic accomplishments, including some 40 journal articles, two book chapters, two U.S. patents, and more than 14 prestigious honors and awards. Zhang, who came to UMass Amherst in 2013 after nine years as an assistant professor and associate professor at Louisiana State University (LSU), is a distinguished expert in geotechnical engineering.

Professor Zhang’s research specialties deal with: nano/micro mechanics of low-dimensional geomaterials (including clays and shales, clay-exopolymer micro flocs, and “marine snow”) for energy and marine ecosystem sustainability; bioinspired/bioengineered soil stabilization for coastal and wetland sustainability; novel geopolymers for infrastructure, environment, and energy sustainability; and the behavior of soft marine and/or wetland clays and residual soil.

Zhang’s two U.S. patents deal, first, with a system and method for testing of micro-sized materials and, second, a pending patent on preparation and synthesis of a cementitious geopolymeric product using industrial wastes, red mud, and fly ash.


Among many other honors, Zhang was a Special Visiting Professor at Shanghai Jiao Tong University (China) in 2013. While at LSU, he was awarded the Overseas Collaborative Research Award from the National Natural Science Foundation of China in 2012. Zhang also earned the 2011 Chevron Innovative Research Support Award, a 2010 Research Achievement Award, and a 2008 Faculty Achievement Award, all presented to Zhang by the LSU College of Engineering. In addition, he received a Summer Faculty Research Fellowship from the Office of Naval Research in 2010.

Besides serving on the faculties at UMass Amherst and LSU, Zhang was a Visiting Scholar at Massachusetts Institute of Technology in Cambridge for the summer of 2004. He was also a lecturer at the University of Nottingham in the United Kingdom from 2002 through 2005, and he was a research engineer at the Chinese Academy of Building Research in China from 1994 to 1996.

Zhang earned his Ph.D. in Geotechnical & Geoenvironmental Engineering at M.I.T. in 2002. Earlier he received his M.S. in Geotechnical Engineering (1994), his B.Eng. in Hydraulic Engineering (1991), and his B.Eng. in Mechanical Engineering (1991) from Tsinghua University in China.

The CEE department is fortunate to have a respected academic with Professor Zhang’s credentials teaching, researching, and mentoring on its faculty and bringing his widespread geotechnical expertise to the College of Engineering.
ASCE Northeast Regional Steel Bridge Competition, Fourth Place!

Congratulations to the UMass Amherst American Society of Civil Engineering (ASCE) Steel Bridge Team, who placed fourth overall at the ASCE Northeast Regional Competition hosted by the University of Connecticut on April 8th, 2017! Their design was one of only five of 15 competitors to successfully hold the competition load of 2500 lbs. The team designed a 249 lb, 20 ½ ft. truss bridge with a cantilever and was awarded first place in Stiffness, second place in Aesthetics, and was the lightest truss design before infractions were added to their score. The team built the bridge in 22 minutes and 38 seconds using launched construction to span the “river,” receiving creativity and safety thumbs-up from the judges.

The team would like to thank Scott Civjan, Faculty Advisor, and UMass CEE alumnus, Peter Quigley, for their advice and support. The team would also like to recognize Fastenal for donating nuts and bolts, and Gary Visconti and Republic Iron Works for donating welding services.

EWB, Student Chapter

In January, the Engineers Without Borders (EWB) Kenya team traveled to the village of Nguluni to set up a rain water catchment system at the Primary School and installed an electric pump into the previously drilled borehole. They established a water distribution system from the borehole to service both the Primary and Secondary schools in addition to the general community with a controlled pump house. This Fall, the team hopes to continue working with the community to expand upon the distribution system and investigate other potential projects, such as hand washing stations at the schools to aid with proper sanitation.

The EWB Ghana team traveled to the Saviefe-Demei in August to build a rain water catchment system at the Junior High School and Kindergarten. The team taught the community how to maintain and operate the rainwater catchment system. To plan for future trips, the team performed a survey to understand the ideal type of water treatment system for the community. The team also met with a borehole driller who specializes in hydrofracking. In the upcoming year, the plans are to implement household based water filters and hydrofrack two existing boreholes.
Student Awards

MAHYAR AMIRGHOLY
Milton Pekarsky Award for Outstanding Dissertation in Science and Technology

CYNTHIA CASTRO
Perrell Research Scholarship
UMass Department of Civil & Environmental Engineering

LEIGHANN D’ANDREA
Senior Leadership Award

AIKATERINI DELIALI
UMass Graduate School Fellowship (2016)

NICHOLAS FOURNIER
Dwight D. Eisenhower Graduate Fellowship (2016); Safety Research using Simulation (SAFER-Sim)
University Transportation Center Outstanding Student of the Year (2017);
Institute of Transportation Engineers (ITE)
Daniel B. Fambro Student Paper Award & Best Student Research Paper,
Institute of Transportation Engineers Northeastern District

FARNOUSH KHALIGHI
WTS Boston Chapter Claire Barrett Memorial Graduate Scholarship (2016)

MAHOUR RAHIMI
Dissertation Scholarship
UMass Amherst Graduate School

JOSHUA WOLFGRAM
Dwight D. Eisenhower Graduate Fellowship (2016)

AGC, Student Chapter

During spring semester, the Associated General Contractors (AGC) student chapter hosted several events. Prior to the Civil & Environmental Engineering Career Fair in February, AGC hosted a resume and career fair preparation session with Kyle Murphy, Project Manager at Baltazar Contractors, Inc. and a former UMass AGC member. In addition, they held their annual OSHA 10-HR Training Course with the Associated General Contractors of Massachusetts, which was completely full, 30 students received their OSHA Safety Certifications.

ITE, Student Chapter

This spring, the UMass Institute of Transportation Engineers (ITE) student chapter attended and hosted a variety of events, allowing students to present their research, network with professionals, and gain insight into the field of transportation. From the Student Symposium and Traffic Bowl at NYU, to hosting their own Annual Technical Day, UMass ITE had another successful semester.

Chi Epsilon Honor Society

Chi Epsilon welcomed 11 new members in the spring of 2017; these students were recognized for their academic achievements, assisting in ongoing research in the department, and volunteering for many organizations around campus. Reviews for the Fundamentals of Engineering Exam were organized by Chi Epsilon in cooperation with many professors from the department. This exam is the first step towards becoming a professional licensed engineer, thus the reviews help to prepare students interested in achieving this title.
ElectroPure Wins First Place $26,000 Prize in Innovation Challenge

ElectroPure, a venture created by Ph.D. candidate Julie Bliss Mullen of the Civil and Environmental Engineering Department, won the $26,000 first prize in the finals of the University of Massachusetts Innovation Challenge on April 6, 2017. Mullen has developed a water treatment device at a competitive price and aimed at homes and small community systems such as schools to combat diverse water quality issues.

In fact, two of the seven finalists in the Innovation Challenge were from the College of Engineering. This year-long series of entrepreneurial competitions climaxed in the Campus Center Amherst Room, where the seven teams competed for $65,000 in funding to support their ventures.

The other College of Engineering finalist was ARBioDesign, created by Rune Percy and Alex Smith of the Mechanical and Industrial Engineering Department. ARBioDesign is developing a device that can quickly, easily, and inexpensively analyze a drop of blood to improve current, outdated dialysis treatment.

Ph.D. candidates Felipe Navarrete, Pablo Visconti, Ana Maria Salicioni, and David Martin won the $20,000 second prize with StarSperm, a product that addresses male fertility issues.

Ag Rowe Intelligence, proposed by Paul O’Connor and Levi Lilly, won $19,000. Ag Rowe Intelligence makes automated data collection and analysis systems for agricultural research, production greenhouses, and golf courses.

The Innovation Challenge is a series of competitions designed to help and reward UMass students and young alumni who want to pursue novel business ideas and develop them into marketable products. The Berthiaume Center, which sponsors the Innovation Challenge, received 25 competitive applications for the recent semi-final held on March 1, out of which the top seven teams of entrepreneurs on campus were selected to compete in the final.

According to the Berthiaume Center, the audience at the Innovation Challenge Final heard pitches “from the greatest variety of ventures we have seen thus far that take their roots in departments all over campus. The finalists include six Ph.D. candidates, one Master’s student, and 10 undergraduate students in Plant, Soil and Insect Sciences, Management, Mechanical and Industrial Engineering, Civil & Environmental Engineering, Computer Science, Veterinary and Animal Sciences, and Chemistry.”

Student Spotlight, Brian Vizaretti

What UMass Amherst student organizations are you involved in?

As a new member of the ASCE student chapter, it has been great to see my classmates participate in nationwide competitions as well as hold informative panels for other students. Also, last semester has been an experiment with joining a computer programming club on campus where students can collaborate to make ideas come to life.

What are your plans after graduation?

After my summer internship in Virtual Design and Construction at Suffolk, I genuinely love developing information models that can be implemented to “build smart.” Experimenting with Revit’s new plug in’s such as Dynamo and new software that has been changing the way people design complex structures makes every day interesting.

Are you involved in research or experiential learning?

This fall semester I am conducting an independent study to explore the use of innovative technology to disrupt the construction industry. I’ve worked with developers to produce holograms of building mockups that contain scheduling and cost information. Clash detection between MEP, Architects, and Civil Engineer plans have been critical in saving money in the preconstruction phase.

What CEE elective did you enjoy the most?

Even though my primary focus is towards the structural development route, Public Transportation Systems was interesting because the subject involved something we use daily. Learning about public transportation will be extremely important in the future as cities progress away from personal cars, and more dependent on train or bus.

How has your experience at UMass CEE been?

My experience has been memorable to say the least. Merging with engineers in other fields, the sky is the limit to what can be built.

What do you value the most from your UMass experience?

Meeting creative and motivated individuals that try to change the way things are looked at. Amongst the civil engineers, there are so many individuals who are interested in building differently. A student’s interest can be to build with strictly renewable resources or a student’s interest can be to conquer the feat of building taller than the Burj Khalifa. The department is full of challenge seekers.
The College of Engineering relies upon the philanthropic support of alumni, friends, and corporate partners to maintain the excellence of our educational and research programs.

Your contribution to the Department of Civil and Environmental Engineering will be put to work immediately providing the tools our students and faculty need to change the Commonwealth, the nation, and the world.

For more information on ways to give, please visit www.umass.edu/giving/.