



CEE

UPDATE
SPRING 2021





LINDA NOZICK

Dear Alumni and Friends,

As I reflect on this past year, I am struck with the feeling of pride in what CEE has been able to accomplish in the midst of an extremely trying time. Although our daily lives look quite a bit different these days, our students, faculty and staff have maintained energy, humor and positive 'can do' attitudes. Through it all we have gladly celebrated CEE's resilient graduates of 2020, accomplished faculty retirees, talented new assistant professors, and dedicated staff members.

In the spring of 2020, faculty and staff worked swiftly to pull together virtual recognition events for CEE's graduates. The Class of 2020 did a superb job of remaining on target for graduation through a sizable shift in plans and we were so pleased to be able to commend their achievements virtually.

The School also has the honor of recognizing the many years of service in research and teaching that recently retired faculty members, Professors Harry Stewart, Tom O'Rourke and Jerry Stedinger have provided. Their careers helped shape the School into what it is today and we are grateful for their many contributions, of which you can read about in this edition.

CEE has been fortunate to welcome new assistant professors to the School and are delighted to share more about them with you. Our feature story provides a glimpse into the future of CEE and how our assistant professors are integrating their research in new and innovative ways.

The School is also fortunate to have an outstanding professional staff team who are knowledgeable and readily available to meet the needs of our students, alumni and faculty. While 2020 brought the retirement of CEE's dedicated Shop Manager and Equipment Technician, Tim Brock, we have also hired a number of new staff members who have brought a great deal of valuable experience to the School. You will get to read more about Brock as well as our newest staff members on pages 17 and 21 respectively.

As we begin this new year, we know there will be even more successes and celebrations ahead. We look forward to seeing you on Saturday, June 12, 2021 at 9:45 a.m. for CEE's annual reunion gathering. Please be sure to check our website and your email for more details as the date draws nearer.

I hope you enjoy seeing some familiar names and faces throughout the newsletter and reading about CEE's many achievements and triumphs this past year. Best wishes to all of you and please be well.

A handwritten signature in blue ink that reads "Linda Nozick". The signature is written in a cursive, flowing style.

Linda Nozick
Professor and CEE Director

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Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans and Individuals with Disabilities. Cornell University is an innovative Ivy League university and a great place to work. Our inclusive community of scholars, students, and staff impart an uncommon sense of larger purpose, and contribute creative ideas to further the university's mission of teaching, discovery, and engagement.



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THE FACES OF CEE'S FUTURE

By Syl Kacapyr

Young, talented and diverse in their research, eight assistant professors—all hired within the last four years—represent the future of Cornell's School of Civil and Environmental Engineering (CEE). As a cohort, they are upholding the School's tradition of excellence in civil infrastructure, environmental engineering, and engineering systems and management. As individuals, they are bringing new perspectives to conventional courses and blending lines between research areas.

"We are more and more integrated as a School than we've ever been," said Linda Nozick, CEE director. "The frontiers brought by our assistant professors span multiple areas of study and a lot of exciting research is happening at the interfaces. That's a very exciting thing for the School moving forward."

Meet the faces of CEE's future.

GREESHMA GADIKOTA **SUSTAINABLE ENERGY AND** **RESOURCE RECOVERY**

Fossil fuels such as petroleum, natural gas and coal satisfy over 80% of U.S. energy needs, but are the source of over 90% of the country's carbon dioxide emissions from human activity, according to the U.S. Energy Information Administration. Many argue that the only way to meet the growing demand for energy while mitigating the effects of fossil fuels on the climate is by developing a portfolio of technologies to capture, convert and store carbon dioxide.

Assistant Professor Greeshma Gadikota is researching novel ways to develop those technologies with a focus on capturing CO₂ directly from the air and flue gasses. She is also investigating how to remove carbon from plastic products in order to produce clean fuels and useful materials for the construction industry.

Carbon mineralization—converting carbon dioxide into inorganic carbonates—is one approach being explored to address both research challenges. In

January 2020, Gadikota published a paper in *Nature Reviews Chemistry* that investigated the feasibility of carbon mineralization and determined existing knowledge gaps in the science.

"The paper also identifies approaches to scientifically de-risk our understanding of these challenges, with the aim of scaling up technologies for hydrogen production with CO₂ removal and CO₂ capture and conversion to produce inorganic carbonates," said Gadikota. "Both pathways are designed with the intent of integrating accelerated carbon mineralization approaches. This is a considerable shift from prior approaches of



Assistant Professor Greeshma Gadikota

developing capture, conversion and storage technologies independently of each other.”

Using emerging synchrotron methods such as cross-scale X-ray scattering measurements and leveraging laboratory-scale techniques such as infrared spectroscopy, Gadikota aims to advance fundamental insights into advanced carbonate and clay chemistry, natural and engineered colloidal systems, valorization of industrial residues, and elemental recovery from natural and engineered substrates. Her research in these areas will ultimately inform the development of next generation resource recovery technologies for applications such as low-cost battery materials.

Gadikota is exploring ways to bring her technologies to market through the National Science Foundation I-Corps program and Cornell Engineering’s Commercialization Fellowship. Her graduate student, Meishen Liu, spent a fully-funded summer and semester as a Commercialization Fellow, studying market opportunities for an integrated carbon capture and production method to produce value-added inorganic carbonates from industrial waste streams.

“Applying knowledge to create transformative technologies is something that we teach our students to do really well. It is a pleasure to advise students as they move towards higher order learning,” said Gadikota, who this past fall taught Cornell’s Intro to Geotechnical Engineering course, which focuses on how to harness geological environments for emerging energy, environmental and civil infrastructure applications.

“That can include, for example, getting a better understanding of how we can harness soils or geomaterials to build resilient structures and engineer fluid-particle interactions for emerging energy and environmental applications,” said Gadikota. “Often, the scientifically interesting phenomena occur far from equilibrium dynamic conditions, so how can we quantify them?”

Gadikota’s work probing fluid-particle interactions to inform the development of new technologies in energy and environment was recently recognized with a Sabic Young Professional Award from the American Institute of Chemical Engineers. And she was recently named a Scialog Fellow in Negative Emissions Science by the Research Corporation for Science Advancement. The fellowship aims to tackle challenging multidisciplinary problems through the pursuit of innovative research—a goal that aligns well with those of the School of Civil and Environmental Engineering.

“Fundamentally, it’s about breaking some of these existing thought processes that are barriers to innovation and coming up with new ways of how we can collaborate to make the planet a better place.”



Assistant Professor Sriramya Nair

SRIRAMYA NAIR **SUSTAINABLE CEMENTITIOUS** **MATERIALS**

Concrete is the most widely used human-made product in the world, so it is no surprise that improving its cementitious ingredients is an effort as old as concrete itself. Most modern-day concrete uses manufactured Portland cement, but Assistant Professor Sriramya Nair is researching novel ways to change how cement is engineered through the use of high-energy X-rays and magnetorheology.

Rather than focusing solely on the chemical additives that can change the properties of concrete, Nair’s research incorporates magnetic particles into cement paste so that a magnetic field can be applied to control its rheological properties in real time.

Rheology—the study of the flow of matter—is a concept borrowed from physics, in which the flow and deformation of liquids, such as oils, can be controlled using stress applied by a magnetic field.

“By varying the intensity and the direction of the magnetic field, as well as the dosage of magnetic particles in the cement, you can go from a softer material to a peanut butter-like material, and you can keep going back and forth,” said Nair. “There are different applications where you want to be able to change your rheology and so it’s about real-time control.”

One of the applications Nair is researching is for well casings and plugs used in deep boreholes, such as those used for fossil fuel exploration or deep geothermal systems.

“Within the well, you’re trying to place cement slurry behind the casing where you don’t have much control,” said Nair. “But using an electromagnetic field and incorporating magnetic particles in the slurry, you can make sure you are cementing the entire cross section of the well, and not just one part.”

Nair is working with WellSet, a Norwegian startup that will soon be testing a prototype electromagnet to create cement slurries that could help adequately plug abandoned oil and gas wells. She is also researching how the magnetic approach can be used to create a better bond between

THE FACES OF CEE'S FUTURE

3D-printed layers of concrete.

Nair is also researching another physics concept: far-field high-energy diffraction microscopy, in which high-intensity X-rays produce extraordinary views of concrete at the microscale.

Stress tests are a common way structural engineers can gauge the strength of construction materials, but they do not offer a detailed analysis of how a product may deform, fracture or perform in any given environment. The microscopy performed by Nair can yield valuable data for optimizing the composition of traditional cement or other alternate cementitious materials, and for predicting their mechanical behavior.

"There are a lot of models out there trying to predict how a material would deform, and they all start on the micron scale because that's where they are meshing their material, but they don't have input data," said Nair. "We can provide important information to feed into those models."

The unique microscopy Nair is employing is enabled by the Cornell High Energy Synchrotron Source, where she was a postdoctoral researcher. CHESS is a half-mile ring buried beneath the south campus athletic fields, where electrons traveling at nearly the speed of light are directed toward materials in order to emit extraordinarily strong X-rays.

"The work we're doing at the synchrotron is going to be very powerful in improving prediction models of alternate materials," said Nair.

JACOB MAYS STOCHASTIC OPTIMIZATION OF ELECTRICITY MARKETS

Behind every residential electricity bill is a complex, wholesale energy market—a system of tens-of-thousands of nodes and ancillary service products that, among other factors, determine the cost of electricity.

Electricity markets have evolved through the decades to foster competition and ultimately bring down prices. However, the evolution of those markets has centered around traditional energy sources such as coal and natural gas, and implicit assumptions based on those fossil fuels are embedded into market functions. This has made it difficult to integrate renewable sources of energy, such as wind and solar, into the grid.

Assistant Professor Jacob Mays is using stochastic optimization—mathematical modeling for decision making under uncertainty—to consider adaptations to market design that are needed to efficiently plan, manage, and operate an energy system that has a high degree of low-carbon resources.

"A lot of the challenge is how you manage the variability and uncertainty that accompanies that quantity of wind and solar generation in an efficient way," said Mays. "So, you make sure that you manage the system reliably and make the best use of those resources that you can."

One example of Mays' work is published in a 2019 *Nature Energy* paper "Asymmetric Risk and Fuel Neutrality in Electricity Capacity Markets." In it, Mays and colleagues detail an energy model that helps to structure tradeoffs between pricing and reliability in markets where renewable energy competes with carbon-generated power. They use stochastic

optimization to develop new risk trading mechanisms that help overcome some of the characteristics of renewable energy that markets were not designed to favor. Examples include the

higher fixed costs and near-zero operating costs of wind and solar, as well as the inherent intermittency of those energy sources.

"A big part of that is price signals," said Mays. "If we're trying to manage variability and uncertainty then signaling the value of the flexibility to respond to that variability and uncertainty is really crucial in order to get complimentary resources onto the system that can support wind and solar."

Mays notes that it will take an interdisciplinary coalition of engineers, economists, legal scholars, and policy makers to play a role in the design and operation of an electrical system reliant on renewable sources.

His *Nature Energy* paper was recently cited in a report by the U.S. House Select Committee on the Climate Crisis titled "Solving the Climate Crisis: The Congressional Action Plan for a Clean Energy Economy and a Healthy, Resilient, and Just America," and Mays said he is looking forward to working with policy makers and experts across campus on future research.

"As engineers, we know the mathematical and technological cores, but we have to be aware of the economics, the policy, and the legal aspects of energy to really do effective work," said Mays.



Assistant Professor Jacob Mays

ANDREA GIOMETTO ECO-EVOLUTIONARY DYNAMICS OF POPULATIONS

Microorganisms such as bacteria, algae and viruses are omnipresent in our lives. These microbes play a key role in the biological dynamics of just about everything on Earth, from human health and medicine to the environment to food and agriculture.



Assistant Professor Andrea Giometto

Assistant Professor Andrea Giometto studies the spatial eco-evolutionary dynamics of microbial communities—the way in which physical surroundings influence evolutionary changes in microbes. The foundational knowledge gained by Giometto on this small scale can be used to study much larger processes. For example, using gene drives to modify mosquitoes so they will not carry malaria, or predicting how an invasive species may spread in any given environment.

“What I’m doing is figuring out what are the conditions under which a population can successfully expand,” said Giometto, “or figuring out what are the dynamics that ensure that it won’t spread in an uncontrolled way. It’s a bit like when civil engineers make models of buildings at scale, except this is a living system.”

Giometto combines genetic engineering with theoretical modeling to understand how different microbes grow and interact with each other. At Cornell, he plans to continue a project he began as a postdoctoral researcher in which he developed two strains of yeast that were genetically modified to exchange toxins, controlling how much of these toxins they independently produce.

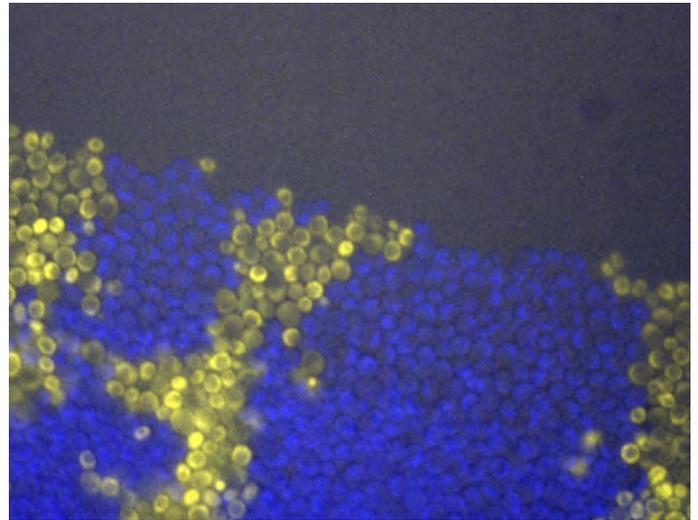
“In a way, I can look at a version of microbial warfare. Controlling the strength of the two opponents and looking into the spatial dynamics of this is something that people haven’t looked at,” said Giometto.

He is also evolving populations of yeast, selecting for cells that expand faster and looking at what kind of phenotypes emerge in these expansion experiments.

“I’m trying to figure out the parameters that matter between simulations of these cells that grow and push each other in these dense populations,” said Giometto, “and how the mechanical forces that they exert on each other

affect the expansion.”

Giometto, who has degrees in physics and in environmental engineering, said that while there are many academic departments that could house a microbial researcher—ecology, evolutionary biology, microbiology—he feels civil and environmental engineering is the right fit for him. “People in environmental engineering have been dealing with microbial populations for a very long time and they need to have a quantitative understanding of how these things work in order to apply,” said Giometto, who hopes to collaborate with a variety of researchers from within the



An image from Assistant Professor Andrea Giometto's research.

school, college and university.

“For any researchers wanting to manipulate the microbiome, you need to know what are the conditions under which you can successfully introduce or control a new microbial strain,” said Giometto. “One of the first things is doing these kinds of experiments.”

QI LI FLUID DYNAMICS AND HEAT TRANSFER IN THE BUILT ENVIRONMENT

How can cities be engineered to be more sustainable and resilient in the face of climate change? That question is at the heart of research conducted by Assistant Professor Qi Li who applies numerical models to study how the built environment impacts land-atmosphere interactions.

“Urbanization is concentrating the world’s population, economy and resources in cities,” said Li. “Within the interconnected Earth system, we need to better understand the complex interactions between climate and the urban

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Assistant Professor Qi Li

metabolism,' such that mitigation and adaptation can be implemented for the most vulnerable communities."

In one project, Li is using large eddy simulations—mathematical models for turbulence—and satellite observation data to better

understand the transport

of momentum, energy, and mass in the lower atmosphere. The resulting data can help improve weather models for urban areas. In other research, urban environmental fluid mechanics modeling is used to study how microplastics produced in cities end up in the atmosphere, potentially being transported around the globe.

GREGORY MCLASKEY EARTHQUAKE MECHANICS AND SEISMIC WAVES

Deep below the subsurface is a medley of rock faulting, friction and fractures all leading to seismic activity that provides clues to the complex physics and mechanics within the Earth.

Assistant Professor Gregory McLaskey studies this activity through the recording, measurement, and reproduction of propagating waves. "I basically make earthquakes in a lab," says McLaskey. "I create conditions that are sort of similar to what happens a couple kilometers down in the earth by squeezing rocks. And I'm trying to do this at the biggest scale possible in a lab."

Last year, McLaskey received a National Science Foundation Early Career Development Award to study the role of fluids in earthquakes, with the goal of better interpreting seismic observations such as tremors. He conducts this research using custom-engineered, biaxial rock-squeezing machines that can exert thousands of tons



Assistant Professor Gregory McLaskey



Chun-Yu Ke, Ph.D. student, working with Assistant Professor Greg McLaskey.

of force on a sample of rock, simulating deep subsurface physics.

MATTHEW REID CONTAMINANT TRANSPORT AND ENVIRONMENTAL TRANSFORMATION

Bacteria and other microorganisms living in soil are drivers of biogeochemical processes that, if harnessed properly, could lead to new ways of protecting environmental quality.

Assistant Professor Matthew Reid combines his

expertise in environmental chemical and microbiological processes to better understand the soil microbiome and how it affects contaminant transport and toxicity in the environment. A major focus of his research group is understanding the controls on the

chemical form of arsenic in the environment. For example, microorganisms in soil and water use enzymes to drive arsenic transformations, but for these changes to occur, arsenic must first be transported inside microbial cells.

"We've recently adapted a fluorescent biosensor method to quantify arsenic uptake into microbial cells, and that's allowed us to learn how solutes in the extracellular



Assistant Professor Matthew Reid



Hyun Yoon, Ph.D. student, working in Reid's Ecological Engineering Research Lab.

environment—things like dissolved organic matter and other metalloids—affect the bioavailability and subsequent biotransformation of arsenic,” said Reid.

This research has applications to the transformation of the fate of arsenic in rice paddy soils, where uptake of arsenic into rice and contamination of the food chain is a growing concern. Through a new grant, Reid is also working with the City of Ithaca Water Treatment Plant to better understand how microbial processes in the reservoir sediments release manganese into the water column, which can lead to high manganese concentrations in the plant’s intake water. The goal is to predict periods of elevated manganese concentrations based on easily-measured environmental conditions so that plant operators can better treat the elevated manganese.

SAMITHA SAMARANAYAKE **MODELING, ANALYSIS AND CONTROL OF TRANSPORTATION NETWORKS**

Technological advances in computing, communications and sensing have led to new opportunities to improve urban infrastructure systems, in particular the ubiquity of smart phones and GPS-enabled devices has led to many innovations in transportation networks.

Assistant Professor Samitha Samaranyake uses specialized algorithms and optimization techniques to develop new models for supporting the global need for affordable, equitable and sustainable personal mobility. For example, through exploring the possibilities for a new generation of hybrid transit systems that integrate traditional fixed-line public transit, such as buses, with demand-responsive transit, such as on-demand shuttle services. He addresses these problems through the lens of

algorithm engineering—informing new practical algorithms through theoretical insights and vice versa—by exploiting domain specific characteristics that appear in transportation-related variants of classical optimization problems.

“While there has been a lot of activity in emerging mobility systems, they have generally not benefited public transit and have had a very limited positive impact on communities that rely on public transit,” said Samaranyake. “There is a huge potential for improving personal mobility for all by focusing on transit-centric mobility technologies. This can also help reduce the negative externalities associated with the transportation system.”

In another recent line of research, Samaranyake is modeling the impact of localized travel patterns and heterogeneous interventions on the spread of COVID-19 with collaborators from Weill Cornell Medicine, Vanderbilt University and Rutgers University-Camden. The hope is to understand how targeted controls of local mobility and other interventions can be used to mitigate the spread of infection while minimizing the economic cost of doing so.



Assistant Professor Samitha Samaranyake

PROFESSOR OF PRACTICE —AN AWESOME TERM



Rolband talking with students at the Cornell Lab of Ornithology.

Mike Rolband '80, M.Eng. '81, MBA '82, Founder and Chief Technical Officer of Wetland Studies and Solutions, Inc., was CEE's first ever professor of practice. From the fall of 2017 to the spring of 2020, Rolband taught CEE 5021 / 5022 / 6025—Wetlands and Stream Restoration. This course consisted of a combination of in-person and virtual lectures, hands-on practicums, dynamic projects, as well as field trips in Ithaca and Virginia. With five to nine students in the class each semester, Rolband was able to create a team environment that was suited for work on real-world projects.

The various projects for Rolband's course ranged from a stream restoration in Reston, Virginia, to a wetlands restoration project near Ithaca and the "Sapsucker Woods Outfall Replacement and Beaver Retrofit Project"—which Cornell's Lab of Ornithology is planning to construct in phases. On-site visits were arranged to provide students with hands-on experiences that ranged from surveying (topographic and bathymetric), groundwater well installations and data collection, permeability testing, water budgets development, hydrology and hydraulic modeling, and wetlands delineation. Rolband's students were able to observe the construction and completion of similar projects, which helped them to find ideas for their project designs.

Additionally, the students had the opportunity to use Computer Aided Design to create construction plans for the projects they worked on. By working as a team, this class gave students the opportunity to apply and expand their academic knowledge into real-world restoration of streams, ponds, and wetlands in order to complete projects that were bigger than any individual could have ever tackled on their own.

Eirini Sarri, a student who was part of the Wetlands and Stream Restoration class for a total of four semesters, remarked, "This course was exactly what I was hoping to get out of my college education. It combined scientific knowledge, field and computer work, as well as creative thinking and problem solving. The class also allowed us to enhance our communication skills. We talked to many people in the field, shared ideas, and asked questions. For me, the best part of the class was working with a wonderful team, where we all stepped up to help each other and there was always a feeling of camaraderie. Everyone in the class put in 100% and we all felt passionate about the work we were doing. I feel excited and optimistic about the future in knowing that such great engineers will be out there making the world a better place!" Ariana Wetzel, a CEE master's student who also took the course, noted that Rolband's class was unique in providing her with real-world experience, similar to that of a practicing engineer. "We learned more than just technical engineering principals, we functioned as a small company by filling out timesheets, communicating directly with clients, and working together to meet deadlines for deliverables. Professor Rolband's passion for teaching and dedication to help us become successful engineers was very clear. His belief in our class made us all work together and problem-solve beyond what most professors expect from their students, making it the most rewarding class I took during my time at Cornell. More than



Rolband's virtual class in Spring, 2020.



Rolband working in the field with students Eirini Sarri and Jessie Powell.

anything, I enjoyed watching everyone on our team push each other and grow into leadership roles,” Wetzels adds. Rolband, reflecting on his own college days, recalls the Master of Engineering Project being his best educational experience at Cornell, and is grateful to have been able to provide a similar experience to a new generation of Cornellians. Rolband contributed his firsthand knowledge, professional skills and Cornell education to this dynamic course, bringing his time as professor of practice full circle.

PROTECTING A WATERSHED

When Danielle Wain came to Cornell in 1995 to receive a bachelor’s degree, she knew she wanted to apply her math and science skills to help the environment. Choosing a major in Civil Engineering and a minor in Geological Sciences, taking a course in fluid mechanics and holding an undergraduate research position in Geology, helped to determine her future career. After graduation, Wain spent two years in the Peace Corps as a Water Engineer building aqueducts in rural communities in the Dominican Republic with local partners. After working in environmental consulting, she returned to school and received an M.S. from the University of Illinois and a Ph.D. from Iowa State University, both in Civil Engineering with a focus on hydrodynamics of lakes and reservoirs. She then held two postdoctoral positions in physical oceanography at the University of Washington and the National University of

Ireland Galway. The latter led to a faculty position in water quality engineering at the University of Bath in the U.K. Looking to move back home to the U.S., Wain now lives and works in Belgrade Lakes, Maine, where she is a Lake Science Director for 7 Lake Alliance, a non-profit watershed organization. Wain reaches out to local stakeholders to develop research that supports science-driven management of the water quality within the watershed. “In my current position, I get the opportunity to apply academic research to real world lake and reservoir management.”

Professor Todd Cowen’s course, CEE 655—Transport, Mixing, and Transformation in the Environment, has played a major role throughout Wain’s career. Wain recalls, “putting fluorescent dye in Cascadilla Creek during one of Professor Cowen’s classes of CEE 655, was one of those most memorable moments, and my career has revolved around environmental flows since!” 7 Lake Alliance partners with Colby College to “collect and maintain an extensive water quality monitoring dataset,” Wain said. “We use this data to understand the threat of blue-green algae blooms and the toxins they produce, and to determine mitigation strategies to prevent future blooms as climate change leads to warmer summers and more nutrient runoff from precipitation.”

Wain is grateful for her CEE education and the path her career has taken. “My time at Cornell introduced me to a whole side of engineering that I didn’t know existed when I first enrolled and gave me the skillset to move across a variety of environmental fields.”



Danielle Wain

FINISHING TOUCHES



When Samantha Gonzalez '15 began working for a construction management company and putting her civil engineering degree skillset to work, it was a dream come true.

Her idea of such a career began when she recognized a passion for building for the future. In her junior year, Gonzalez entered the Cornell-Cantabria Exchange Program where she went to Spain in 2014 and took classes alongside her Spanish counterparts at the Universidad de Cantabria and did an internship at APIA XXI. "Studying, and then interning in Spain was extremely valuable to my educational and personal development," Gonzalez said.

"The Cornell-Cantabria Exchange program opened my eyes to different ways of life, different values, and the commonalities that cross cultures. Looking back, this was my first real push into young adulthood as my fellow Cornellians and I navigated a new country, new language, new university, and new way of life. By gaining new skills in and out of the classroom, we were able to set ourselves up for both academic and personal success."

Now, five years later, Gonzalez is putting her knowledge to work as an Assistant Project Manager with Skanska USA Building, where she is involved in the marble and granite finishes at the Moynihan Train Hall Project at the James A. Farley Post Office in New York City, which is in Phase 2 of the multi-billion dollar overhaul and expansion of Penn Station.

"In the office, I manage submittals and review drawings, tracking cost and schedule impacts along the way, particularly due to COVID-19. On site, I track field progress, facilitate solutions to field issues, and even travel to various factories/quarries to observe the material before it is installed."

Gonzalez says her education at Cornell helped her to realize her potential. She was challenged through the coursework to understand the engineering concepts that would be applied in construction. On a daily basis, Gonzalez utilizes the problem solving and communication skills that she was taught. "Cornell prepared me well for my career and I am very grateful for my CEE education and where I am today in my career."

Editor's Note: Before going to press, Samantha wrote to us with the following news: "Moynihan Train Hall was actually able to open on time and on budget on 12/31/2020, with a ribbon-cutting ceremony by Governor Cuomo and his team on 12/30/2020."



Moynihan Train Hall Project at the James A. Farley Post Office in New York City. Photo provided.

A POST-DOCTORAL PATH TO A PROFESSORIAL ROLE



While in high school Prateek Bansal, Ph.D. '19, realized that a career as a researcher just might suit him well. He observed in himself a sense of pleasure in solving complex mathematical problems, noting an inherent ability and resilience to stick with a problem.

Bansal grew up in Sawai Madhopur, India, with non-existent exposure to computers and English until secondary schooling. "Despite these challenges, being able to enroll in one of India's premier engineering undergraduate programs, admission to which was based on a nationwide entrance exam, completely transformed my trajectory," Bansal said. He received his Bachelor's degree in Civil Engineering at IIT Delhi and his Masters at UT Austin, majoring in Transportation Engineering.

For his bachelor's degree, Bansal had the opportunity to visit transportation research groups at top universities in Taiwan, Canada, and Sweden. "These international research experiences further convinced me that I am curious and passionate about learning and solving problems. Thus, research was an obvious career path for me." With this exposure, Bansal was further convinced to pursue research in transportation engineering due to its interdisciplinary appeal and practice-ready research implications, all of which require a rigorous and thoughtful approach to make new methods valuable for different stakeholders.

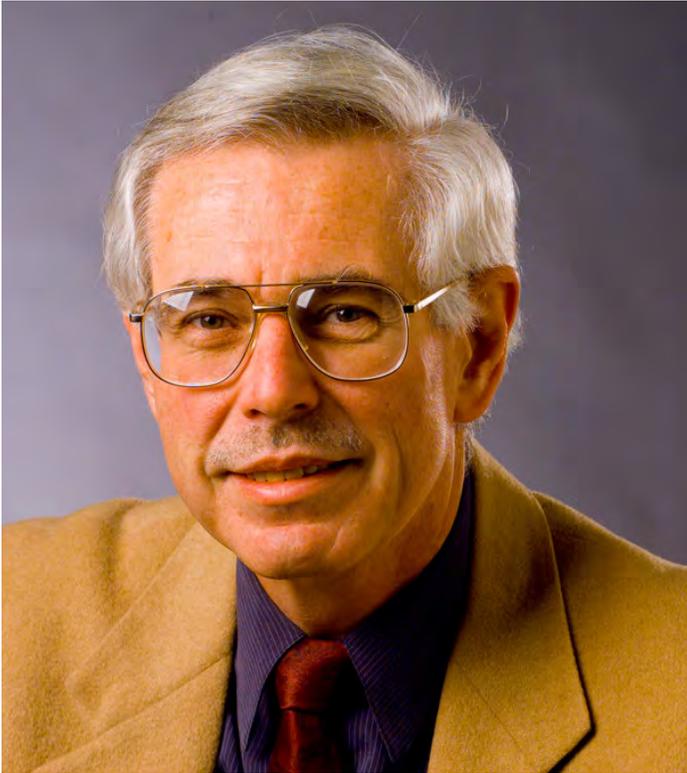
After obtaining his master's, Bansal started to look for the right mix of curriculum and an advisor to work with in order to pursue a Ph.D. in his chosen interest area of transportation

engineering. He explored Cornell's CEE program and was interested in Associate Professor Ricardo Daziano's research on understanding human behavior. With that knowledge, he then found that Cornell offered a multi-disciplinary curriculum. "The flexibility to explore disciplines beyond engineering, was a decisive factor in joining Cornell's doctoral program," Bansal said. "During my Ph.D., I did graduate course sequence in econometrics and also took courses in mathematics and operations research." Bansal went to UC Berkeley and Universidad de Chile as an exchange student while obtaining his Ph.D., still completing his degree exceptionally fast, in 3.5 years.

After graduating, Bansal took a postdoctoral position at Imperial College London, in August 2019, where he worked on developing methods at the intersection of Bayesian machine learning, econometrics, and causal inference to improve the understanding of travel behavior and safety. "The research work allows me to collaborate with over 100 transit operators worldwide, who provide us with access to large-scale datasets and offer opportunities to disseminate research in practice. My experience at Imperial has been nothing less than the best."

In September 2020, Bansal won the prestigious Leverhulme Trust Early Fellowship. Through the support of this fellowship, he is working on an exciting research project to improve the resilience of transit networks. "I am developing new methods for causal inference which, for the first time, will allow us to understand the impact of events on decision-makers' behavior in large-scale complex systems. These methods will be used to understand how shocks (e.g., large crowds or station closures) effect the performance of the London Underground and the behavior of passengers. The new methods will also enhance theoretical understanding of causal inference across many social networks and systems," Bansal explained.

In June 2021, Bansal will join the National University of Singapore as a full-time tenure-track assistant professor, supported by the prestigious Presidential Young Professorship award. His postdoctoral experience has prepared him well and taught him how to juggle multiple tasks—from supervising Ph.D. students, writing grants, and teaching—while still focusing on research. All of this will benefit him immensely in his new academic role.



THOMAS O'ROURKE

Professor Thomas D. O'Rourke retired on September 15, 2020 after 42 years of teaching and research. O'Rourke received his B.S.C.E. from Cornell in 1970, an M.S.C.E. in 1973 and a Ph.D. in 1975 from the University of Illinois at Urbana-Champaign. While at Illinois, his research focused on the Washington, D.C. Metro, culminating in a Ph.D. dissertation focused on the deep, braced excavations for the Metro station at the National Portrait Gallery. This was the start of a life-long interest and career path in geotechnical engineering.

During his education, there were three professors who were influential to O'Rourke: David Henkel, Ralph Peck and Ed Cording. Dr. Henkel was a well-known geotechnical engineer and a professor at Cornell for many years. Dr. Peck was a mentor, and a member of O'Rourke's Ph.D. committee at Illinois, and Dr. Cording was his advisor and friend. O'Rourke learned a great deal from their classes, but mostly he learned from the way they conducted themselves and the way they worked with people. The advice of these mentors would help shape O'Rourke's success.

Throughout his career, O'Rourke has focused his research on developing solutions to engineering problems concerning foundation performance, ground movement effects on structures, earth retaining structures, pipelines, earthquake engineering, tunneling, and infrastructure

rehabilitation. These explorations have contributed greatly to the understanding of natural extreme events, such as earthquakes and hurricanes, that disrupt underground infrastructure.

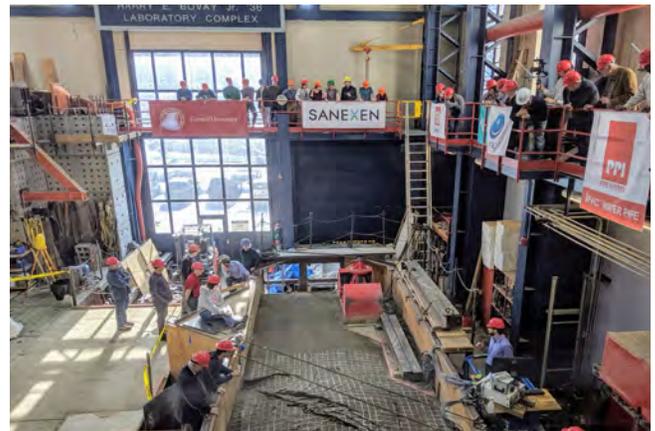
Traveling to many sites in the wake of an earthquake, O'Rourke analyzed the devastation and gleaned data to learn new ways of developing technology for underground lifeline systems. For example, he was a member of 10 different earthquake reconnaissance missions, including a historic mission to Armenia in 1988 at the invitation of the Soviet Academy of Sciences.

From 2004-2014, O'Rourke was instrumental in developing the Large-Scale Lifelines Testing Facility and participating with other universities that were a part of the George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) project. He worked closely with Associate Professor Harry Stewart and Lab Manager, Tim Bond on the project.

O'Rourke authored or co-authored over 400 papers and published reports. He supervised 24 Ph.D. and 23 Master of Science students, and taught thousands of undergraduate and graduate students during his years at Cornell. O'Rourke held distinguished, high-level positions, giving his time and knowledge to many notable organizations and committees. Additionally, he provided consulting services for more than 130 projects in 13 different countries.

O'Rourke is an Overseas Fellow at Churchill College and the University of Cambridge in the U.K. He was three times an Erskine Fellow at the University of Canterbury, Christchurch in New Zealand and a Fulbright Fellow, Senior Specialist Program with the Office of the Prime Minister and Cabinet in New Zealand in 2007. O'Rourke was also President of the Earthquake Engineering Research Institute from 2003-2004.

During his tenure at Cornell, O'Rourke has been the recipient of many outstanding awards and distinctions: U.S. National Academy of Engineering (1993); Fellow of American Association for the Advancement of Science



High-bay area within the Bovay Laboratory Complex.

(2000); Distinguished Member of the American Society of Civil Engineers [ASCE] (2014); International Fellow of the Royal Academy of Engineering (2014); Corresponding Member of the Mexican Academy of Engineering (2017) to name a few.

Even though O'Rourke has retired, he plans to continue to perform large displacement lifelines research in the Bovay Laboratory, and also serve as the Associate Director of the Cornell Program for Infrastructure Policy. This is the work he enjoys and looks forward to accomplishing.

Throughout his career, O'Rourke has maintained full travel schedules, flying to many domestic cities as well as international ones. Perhaps in retirement his travels will have fewer constraints and allow more time for family leisure. His wife, Pat, is a substitute teacher for the Ithaca School District and a member of the Board of Trustees in the Village of Lansing. Their daughter, Adele, graduated from Cornell ILR in 2016, was president of her police academy class, and is a police officer in the State of Washington. Most definitely there is one U.S. state on his travel itinerary.

HARRY STEWART

On December 31, 2019 Associate Professor Harry Stewart retired after 34 years of teaching and research in the School of Civil and Environmental Engineering.

Instrumental in research of geotechnical engineering, Stewart, focused on soil structure interaction, instrumentation of constructed facilities, soil dynamics and earthquake engineering, the cyclic behavior of soils under both laboratory and field conditions, blasting effects on structures, and railroad track performance.

Stewart was responsible for developing design recommendations for the support of shallow excavations for utility construction, the development of improved retain/replace methodologies for cast iron piping, and design approaches for thermal loadings on plastic piping for gas and water utilities.

He directed several research projects focusing on full-scale field testing of foundations and pipelines and was responsible for developing improved methods to analyze and design high pressure pipelines. Stewart had a major role in designing and constructing the full-scale testing facility for buried pipelines in the high-bay area of the Bovay Laboratory complex, which in years past was called the George Winter Lab. This new testing facility contributed greatly to CEE's partnership with other universities in the Large-Scale Lifelines Testing Facility that was part of the George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) project while it existed in the years 2004-2014.

Stewart was the Director of Civil Infrastructure Laboratories for the School for nearly 20 years and Director of the Takeo Mogami Geotechnical Laboratory for 28 years.



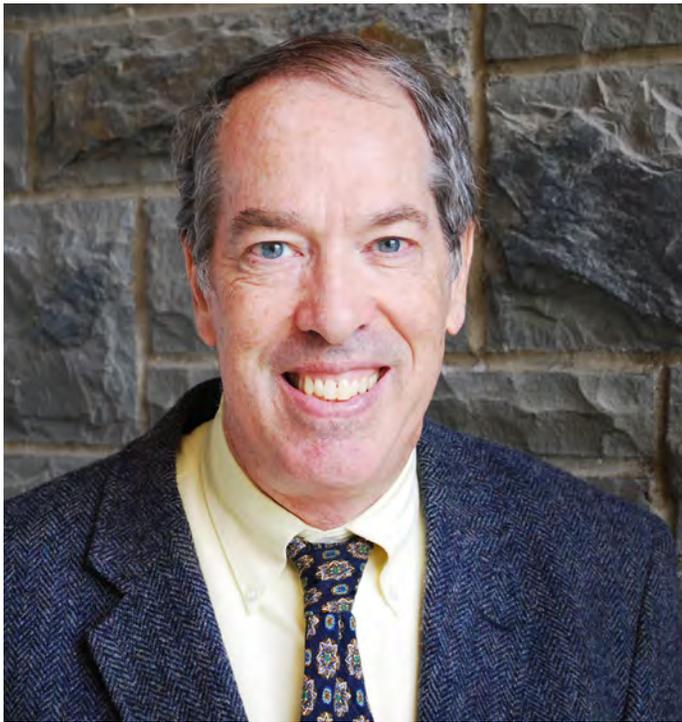
He enjoyed working with his colleague Professor Tom O'Rourke, collaborating with him on many projects and participating side by side on the NEES projects. Much of Stewart's time throughout his career was spent in the Lab providing instruction to students and working closely with lab managers Tim Bond and Jim Strait.

Stewart has been a principal investigator on a wide variety of research contracts and grants, and is the author and co-author of over 120 technical papers and reports, and a principal author of professional manuals of practice for the American Petroleum Institute and American Railway Engineering and Maintenance of Way Association.

With many memberships and recognitions bestowed upon him over his lifetime, including his receipt of the 2002 Trevithick Prize from the Institute of Civil Engineers, UK, and the NASA/JPL Rover Science Team Award, Stewart is a registered Professional Engineer in New York.

Stewart plans to stay in the Ithaca area to relax, sit back and enjoy life intertwined with a game of golf every now and then.

CEE FACULTY RETIREMENTS



JERRY STEDINGER

January 1, 2021 marks the retirement of Professor Jerry Stedinger. For 35 of his 43 years at Cornell, Stedinger taught CEE 3040 – Uncertainty Analysis and encouraged students to take courses in Statistics and Probability. Stedinger shared, “for me, a major mission was to prepare Cornell Engineering graduates for real-world success by helping them to understand and be able to address variability and uncertainty.” Stedinger never tired of teaching the course.

As a graduate student at Harvard in the mid-1970’s, Stedinger’s studies and research addressed environmental systems analysis. His advisors, Fiering and Thomas, were pioneers and leaders in the field of stochastic hydrology, the application of probability and statistics to hydrologic problems. Stedinger thoroughly enjoyed working with them and consequently he pursued probability and statistical modelling with his graduate students and colleagues throughout his career.

During his tenure at Cornell, Stedinger served selflessly in roles within the School and the University. He served five years as associate director of the CE undergraduate program, under CEE Director Arnim Meyburg. And though he moved on to other responsibilities, his regard for CEE’s undergraduate programs continued. For example, he explored Total Quality Management (TQM) as a paradigm for regularly negotiating with students about how to improve the instruction of CEE 3040.

Stedinger was an advisor for the now defunct *Cornell Engineer*, an engineering student run magazine. He then

became an advisor for Tau Beta Pi, an engineering honor society. Stedinger has served nine years as the advisor of the ASCE student chapter, during which the Chapter sponsored two ASCE Student conferences and hosted the annual pig roast until that tradition ended, around 2012. In 2019, Stedinger also took on the role of advisor for the N.Y. Water Environment Association student chapter.

For the past twelve years, Stedinger has been co-chair of the faculty committee that oversees CEE’s B.S. in Environmental Engineering program, which is offered jointly with the Department of Biological and Environmental Engineering (BEE). He worked closely with four BEE faculty co-chairs and both BEE and CEE staff. The program has been a great joy for Stedinger as he has watched many students obtain their B.S. EnvE degree through the program. Additionally, Stedinger has served as a manager of the Master of Engineering program in Environmental Engineering.

In keeping with his research, Stedinger’s sabbatical leaves were spent with teams that dealt with hydrologic risk and statistical issues at the U.S. Geological Survey’s (USGS) National Center in Virginia, the U.S. Army Corps of Engineering (USACE) at the Institute of Water Resources in Virginia and Hydrologic Engineering Center in Davis, California, and the Centre for Water Resource Systems (CWRS), Vienna University of Technology in Vienna, Austria. Four of five sabbaticals were taken at U.S. federal agencies where Stedinger was able to learn first-hand about challenges those agencies faced in dealing with natural resources, and to contribute to their solutions based on research results he brought with him, developed there, or pursued later. A fun fact about Stedinger’s last two sabbaticals at the federal agencies, USGS and USACE-Davis, was that his closest colleagues at each agency were individuals who had each earned a Ph.D. with him at Cornell. This pleased Stedinger.

Stedinger himself has been fortunate to be recognized



internationally for his contribution to hydrology as American Geophysical Union Fellow (2000) and with the ASCE Julian Hinds (1997), Prince Sultan Bin Abdulaziz International Prize for Water for Surface Water Branch (2004) and ASCE Chow Award (2014). The ASCE Hinds award also reflects his contributions to optimization methods for reservoir and hydropower systems and reflecting variability in environmental inflows and forecasts.

Coupled with those honors, Stedinger became a distinguished member of ASCE in 2013 and a member of the National Academy of Engineering in 2014. Stedinger is very grateful to his colleagues Professors Christine Shoemaker and Pete Loucks for supporting such recognitions, and for the work the three of them have done together and side-by-side. From 1977 until Shoemaker retired, they comprised the Environmental and Water Resources area within the School. It is a truly remarkable accomplishment that all three earned the ASCE Julian Hinds award, became distinguished members of ASCE, and were elected to the National Academy of Engineering!

Stedinger and his wife, Robin, will continue to live in Ithaca and maintain their community involvement. Jery is currently Scoutmaster of Boy Scout Troop 2. In retirement, he plans to work on several research topics and associated papers. Stedinger sends his best to alumni who populated his courses for four decades and members of the student clubs he worked with. Jery adds, "please, do well and stay well."

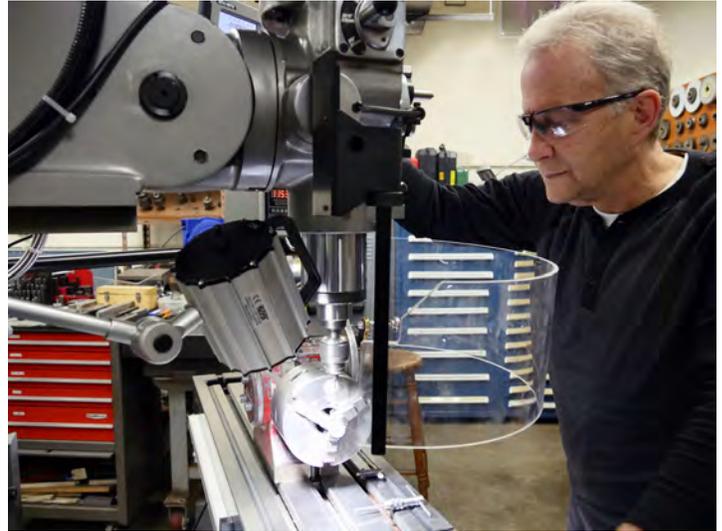
TIMOTHY BROCK

With nearly 31 years of dedicated service to Cornell and more than half of it with the School of Civil and Environmental Engineering, Tim Brock, CEE's Shop Manager and Equipment Technician, took the early retirement incentive package offered by the University and retired on September 15, 2020.

Brock started at Cornell as a casual appointment in October 1989 and it was not long after that, January 4, 1990 to be exact, that he was hired full-time. He worked in the Advanced Design & Fabrication Facility in Upson Hall for more than 14 years prior to joining CEE's Shop, where he had been for a little over 16.5 years.

Brock grew up in Spencer, NY with a strong work ethic, having begun working on his grandparent's dairy farm at a young age. After marriage and moving to Owego, he began making the 60-mile round trip commute each day to contribute to the work of Cornell University and the School of CEE; and a great contributor he has been.

Brock's long history as an excellent machinist has benefited CEE faculty, student research and student team projects. He is a man of precision and neatness in his work



Tim Brock working in the Machine Shop.

area, and he has taught many students how to use milling machines, drill presses, lathes, grinders and welding machines. He took pride in carefully training students to respect and confidently use the equipment and machinery in the shop. Watching students work with the machines and see their ideas and designs come together was rewarding for Brock. Additionally, he lent his expertise and experience to design concepts presented by faculty members and students, which helped to improve the end product. His skill level and knowledge coupled with his gentle personality and ability to think through a design, made the experience of working with him gratifying and productive.

In addition to shop projects, Brock drove the U-Haul truck that carried the concrete canoe and steel bridge components to ASCE regional competitions for several years. After all of the hard work and time students spent in the shop under his guidance and direction, watching the competitions and spending time with the students was just another part of the job that Brock so greatly enjoyed.

Since the very beginning of his time with CEE, Brock worked the School's graduation ceremonies, giving of his time on a Sunday during Memorial weekend to assist in the setup of chairs, tables and stage platforms. Two weeks following graduation, Brock was our famous pancake maker and flipper for the alumni breakfast! He enjoyed these events to meet families of students and alumni he had mentored.

Brock enjoys spending time with his wife, Cecilia, their three daughters, son and grandson. Myrtle Beach is a favorite vacation spot for his family to visit. He is also an elder in the Waverly Congregation of Jehovah's Witnesses and plans to utilize his retirement to become more active in the ministry.

The students, staff and faculty in the School of Civil and Environmental Engineering will miss Tim. He has been a valued and reliable colleague, a loyal friend and an outstanding mentor to many students during his career.



GREESHMA GADIKOTA has been selected to participate in the National Academy of Engineering (NAE)'s 2020 U.S.

Frontiers of Engineering symposium and the NAE German-American Frontiers of Engineering meeting in 2021. Gadikota was also recognized as a Scialog Fellow in Negative Emissions Science. Gadikota is the recipient of DOE CAREER Award (2019), AIChE Sabic Award for Young Professionals from the Particle Technology Forum (2020) and the Minerals 2020 Young Investigator Award.



APRIL GU has been awarded the 2019 Ralph Fuhrman Medal from the Water and Environment Federation.

Gu has also been awarded the 2020 Distinguished Service Award from the Association of Environmental Engineering and Science Professors.



DAMIAN HELBLING was awarded the 2019 College of Engineering Research Excellence award.



KEN HOVER was a recipient of the 2019 College of Engineering James and Mary Tien Excellence in Teaching award.



ANDREA IPPOLITO, CEE Lecturer, was a recipient of the 2020 College of Engineering Douglas Whitney '61 Excellence in Teaching award.



PATRICK REED A collaborative paper between Patrick Reed, the Joseph C. Ford Professor in the School of Civil and Environmental Engineering, and The Aerospace Corporation has won the

top 2020 Gold Medal prize in the global "Humies" competition hosted by the Association for Computing Machinery Special Interest Group in Genetic and Evolutionary Optimization. The paper titled, "Low cost satellite constellations for nearly continuous global coverage," was published Jan. 10, 2020, in *Nature Communications*.



DEREK WARNER was a recipient of the 2019 College of Engineering James and Mary Tien Excellence in Teaching award.

Bill McGuire Remembered on 100th Birthday

A mini-reunion of Professor McGuire's former graduate students and a few colleagues was held virtually on December 17, 2020 to commemorate what would have been McGuire's 100th birthday. Bill served on the CEE faculty for 40 years, retiring in 1989. He was widely respected as a structural engineer specializing in steel structures and was elected to the National Academy of Engineering in 1994. During the 1970s and 80s, he supervised a series of graduate students who have gone on to distinguish themselves in their academic and professional careers, and several of these alumni joined this reunion to honor Bill's memory.

McGuire was a principal structural consultant from the Cornell side in the design and maintenance of the Arecibo Observatory from the original conception in the early 1960s until



Cornell relinquished management of the facility in 2011, just two years before Bill's death. Because this spectacular innovative structure was dear to Bill's heart, the reunion was tinged with a note of sadness due to the recent deterioration and ultimate collapse of the observatory on December 1st.

ENGINEERING MANAGEMENT STUDENTS ADAPT TO VIRTUAL ENVIRONMENT

By Lisa Gerber

When Cornell migrated to virtual learning in March 2020, CEE students, faculty, and staff were faced with many questions. For the Engineering Management Program, there were a few immediate challenges. How do we support our current project teams who rely on face-to-face meetings? How do we help students in their job search as employers change hiring practices? And how do we build a strong community among students in our inaugural Online Learning cohort when they can't meet each other for the first time on campus?

For students in ENMGT 5910, the capstone project course, students and project sponsors immediately created new ways to check in on milestones and deliverables. This was no easy task, since team members were scattered across the globe and had to find meeting times that would accommodate different time zones. Project presentations, a big event for Engineering Management students in their final semester, were also online. Faculty, staff, and students attended a live ZOOM session to hear about project results and conclusions from seven project teams. Andrea Ippolito, ENMGT 5910 Lecturer and Class '06 College of Engineering alumna stated, "At the end of the semester, I had each corporate partner provide feedback on the student's performance and every single partner expressed how impressed they were with the student's ability to adapt and excel during trying circumstances. As their instructor, I was incredibly proud of them—they soared!"

To adapt to a new environment for those seeking jobs, the Engineering Management Program and M.Eng. Career Services hosted a series of webinars to help students navigate virtual interviews. The virtual series also included panel discussions with recent alumni who could speak to updates within their own company or provide advice. The extra support during this uncertain time helped students find jobs and identify new opportunities.

Online Learning students were eager to come to campus in August for their first residential session in Ithaca and connect with their cohort of fellow engineering leaders.



The Cornell Engineering Management Online Learning Cohort.

While it was initially disappointing that this week-long experience would need to occur online, staff and faculty worked to develop activities that addressed the current pandemic, were engaging, and allowed for organic connections. Andrea Ippolito developed a daily challenge focused on the development of a coronavirus vaccine from the perspective of a pharmaceutical engineering manager. Students, staff, and faculty also participated in social activities ranging from "two truths and a lie" to a scavenger hunt.

We teach problem-solving and leadership skills to develop adaptable responses and creative solutions and it was impressive to see these approaches in action. We are proud of our students who took on these challenges and demonstrated leadership and adaptability. Our on-campus program has been training technical leaders for over 30 years and our part-time and online degree program allows students to earn an M.Eng. in Engineering Management while they work.

If you are interested in learning more about the Engineering Management Program, we encourage you to attend an information session or reach out to Program Manager, Lisa Gerber at img297@cornell.edu

<https://www.engmanagement.cornell.edu>



ROHINI GUPTA

Rohini Gupta is a Ph.D. student working in the Reed Research Group.

What is your area of research and why is it important?

Currently, my dissertation research is on reconstructing weather regimes in the Western U.S. In our work, we identify regional signals that dictate weather dynamics and then reconstruct those signals back in time using tree ring chronologies. This allows us to uncover weather dynamics back to the year 1400, which is important for us to be able to extend our understanding of natural variability in the weather system. The main goal with this work is to create weather scenarios that are informed by these reconstructions and then propagate them through water systems models developed for California to improve our understanding of how different stakeholders (reservoirs, farmers, irrigation districts, groundwater banks) will be affected by various weather scenarios and climate changes.

What inspired you to choose this field of study?

I grew up in a very rural area surrounded by forests and wildlife that has completely shaped my way of life including my field of study. From a very early age, I knew that I wanted to study environmental engineering and through a variety of research experiences in undergrad, I ended up in water resources. I really love this field because everyday I am pulling ideas and expertise from various fields: computer science, environmental engineering, systems engineering, atmospheric science, and policy. I am so happy to have ended up in a field where I can have an impact in understanding and addressing climate change.

Can you tell us a little bit about yourself?

Outside of research, I really enjoy music (both playing and listening). In Ithaca, I play guitar / mandolin / sing in an all Ph.D. folk / bluegrass band called Nobody et al. with my fellow lab member Dave Gold and our friend Geoff Pleiss. While I have been working from home during the pandemic, my dad, sister and I have formed our own folk trio and usually put out a new cover every week. Lately, we've been doing a lot of Bob Dylan and the Grateful Dead. We grew up listening to a lot of this music and it has been so fun to actually play these songs and share our renditions with friends and family. In Ithaca, I also play soccer and teach a computing class at the Women's Opportunity Center.

Why did you choose Cornell to pursue your degree?

Cornell has such a great CEE program and the research opportunities offered by my advisor aligned exactly with my interests. I have really enjoyed the wide variety of classes offered here and have met some wonderful professors. I also love Ithaca and there are so many amazing opportunities to get involved in volunteer work and other fun activities outside of school.

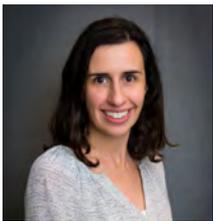
Tell us a fun fact about yourself.

During the pandemic, I started making earrings as a fun post-work activity. I started an Etsy shop where all the proceeds go to the Women's Center in my hometown. I was completely sold out and raised over \$600 in a few days. This was a great way to both pursue a new creative outlet for me and also to support an organization that has been incredibly important for providing assistance and shelter to women, men, and children. Definitely look for ways you can safely help out local organizations during this pandemic!



Photo provided.

CEE HAS WELCOMED NEW STAFF MEMBERS AND PROMOTED A VALUED MEMBER OF THE TEAM. THE SCHOOL IS PROUD TO INTRODUCE THE FOLLOWING STAFF MEMBERS:



LISA GERBER is the Program Manager for Engineering Management. Gerber joined the team in September 2019. She brings extensive work experience from her positions at Duke University and the University of Texas at Austin. In her previous roles, she promoted environmental education, coordinated a program for women in science, and was part of a team advancing equity in mathematics.



BETH KORSON is the Events and Main Office Coordinator for CEE and she joined the staff in March 2019. Korson earned her Master of Arts in communication processes from the University of Connecticut and has professional experience in office administration and cultural exchange programs. Her management and leadership skills have been instrumental in the oversight of daily operations of the CEE Main Office and in the coordination of successful events for the School.



LAURA RICCIUTI is the new Undergraduate Field Coordinator for CEE, joining the staff in November 2019. Prior to working at Cornell, Ricciuti held both administrative and student services positions. Ricciuti earned an M.S. in Student Affairs and a Master of Public Administration from Binghamton University in May 2019. Having worked in higher education for 15 years, Ricciuti brings a wealth of knowledge from both her work experience and education.



TANIA SHARPSTEEN has been with CEE for 13 years and moved into the new role of Program Coordinator supporting the engineering management program in September 2019. Sharpsteen brings forth a strong knowledge of student support and

programming resources to perspective and current students in both the online learning and on-campus programs.



MELISSA TOTMAN is the new Assistant Director of Graduate Programs and she joined the staff in August 2019. Prior to CEE, Totman worked in a similar position in the Math department in Cornell's College of Arts and Sciences for almost eight years. Her work knowledge strengthens the operation of the program and enriches the lives of CEE graduate students. Totman coordinates all aspects of the CEE graduate program, from prospective applicants to current students in residence to graduation.

PRESIDENT'S AWARD FOR EXCELLENCE



JOE ROWE, director of administration in the School of Civil and Environmental Engineering, won the Thoughtful Leader Award as part of the President's Employee Excellence Awards for mentoring, challenging and inspiring his colleagues to reach their full potential. Rowe is a dedicated employee who provides outstanding leadership, support and guidance to the staff. With his expertise and ability to think outside of the box, Rowe has worked to align the School and the team for lasting success.

REUNION 2020

Though the campus may have been all but empty on the days of Reunion 2020, the Cornell community and alumni gathered in greater numbers than usual. The pandemic may have prevented an in-person experience, but it made it possible for people who could not have traveled the miles to connect virtually with the Cornell community and fellow alumni at many Reunion events. Normally CEE would have served pancakes, bacon and eggs to approximately 60 alumni. For the School's 2020 reunion, over 100 gathered online to reconnect with classmates, faculty and staff.



L to R, starting with Top Row: (S=Staff, P=Professor)

Jeannette Little (S); Abdul-Rahim Sabouni Ph.D. '86; Marc Gerber '62; Charissa King-O'Brien (S); Linda Nozick (P); John Abel '62 (P); Ken Hover Ph.D. '84 (P).

2nd Row from Top: Jonathan Hrehor '15; John Curtis M.S. '65; Pete Loucks Ph.D. '65; Alan Garfinkel BCE '61; Cliff Argue '63; Walid Najjar Ph.D. '87; John Ngunjiri M.Eng. '04.

3rd Row: David Orr Ph.D. '05; Arnim Meyburg (P); Robert D'Onofrio M.Eng. '05; James Allen '69, Cameron Willkens (S); Tim Brock (S); Jerry Stedinger (P).

4th Row: Tom Tseng M.Eng. '94; Jerry Young M.Eng. '94; Quentin Tourancheau M.Eng. '11; Nikki Adame M.Eng. '00; Molly Morse '03; Teoman Pekoz (P); David Marks M.S. '64.

5th Row: Alexis Weaver M.Eng. '20; Annie Ding '14; Deanna Fernando '19; Monroe Weber-Shirk Ph.D. '92 (S); James Strait (S); Yuqi Yu M.Eng. '16; Melissa Fickel '14.

6th Row: Len Libenson '63; Beth Korson (S); Bob Wohlson '70; Pierre Boisrond M.Eng. '96; Minda Cutcher '78; Nicole Dufalla '10; Mike Rolband MBA '82.

Bottom Row: Bruno Fong '15; Julie Mark Cohen Ph.D. '87; Sonya Burns '11; Sam Liao M.S. '76; Ernest Thiessen Ph.D. '93; Maia Coladonato '92; Myles Clewner '90.

ALUMNI NEWS

Three CEE alumni have made it to ENR New York's Top 20 Young Professionals list for 2021: Jeremy Billig '04, M.Eng. '05, president of McLaren Engineering Group; Robert D'Onofrio '04, M.Eng. '05, vice president of Capital Project Management, Inc. and John Grillo M.Eng. '05, project executive of Keller.

Ken Arnold '63 lives in Houston with his wife, Ruth, of 43 years. He has 6 children and 13 grandchildren, one of whom is a third generation Cornellian in Operations Research and Information Engineering. In 2003, Arnold was named Houston's Engineer of the Year by the Texas Society of Professional Engineers, elected to the National Academy of Engineering in 2005 and the National Academy of Construction in 2014, in which he was recently named chair of its Safety Committee. Arnold retired in 2007 and has since been working part-time as a technical advisor and a general consultant for the petroleum industry. Arnold is also involved in undergraduate engineering education, promoting the concept of safety culture in oil and gas and construction activities.

Rich Brustman '63, is retired. Due to the pandemic, life is more mundane and reading and crossword puzzles have increased during this time more than ever before. Thus, no travels to report, not even to visit kids and grandkids who are not nearby (Virginia and China). Social life has been largely relegated to ZOOM. Rich manages to bicycle a dozen miles on days when weather permits, and does volunteer work remotely. He and his wife, Loretta, (Cornell '64) still live in the Albany, N.Y. area.

Che-wei Chang M.S. '15, Ph.D. '17 is an assistant professor at Kyoto University in the Disaster Prevention Research Institute.

Zhijie (Sasha) Dong Ph.D. '15 is an assistant professor of Industrial Engineering at Texas State University. Dr. Dong was awarded a 2020 NSF Computer and Information Science and Engineering Research Initiation Initiative (CRII) award.

Richard (Dick) Lipinski '61 migrated to Alaska in 1975 to work on the construction of the Trans-Alaska Oil pipeline and Prudhoe Bay oil and gas facilities. He has since made Anchorage his home. Lipinski and his wife, Janet, are enjoying retirement there. They spend winters in Delray Beach, Florida and enjoy the outdoors in both places. When possible, they play an occasional bridge game. The Lipinski's look forward to resuming family gatherings with their four

children and seven grandchildren.

Hong-Yueh (Peter) Lo '11, M.S. '13, Ph.D. '18 is an assistant professor at the National Taiwan University in the Department of Ocean Engineering and Engineering Science.

Peter Lovisa '48 is doing well and living in New York. He reads a lot. Peter became a public works contractor with his brother, Tully, an RPI graduate, under the name of Lovisa Construction Company, Inc. For twenty-four years they worked on projects in the Metropolitan New York area and New York State. Peter enjoyed his work.

Ignacio Sepulveda Oyarzun, M.S. '16, Ph.D. '17 is a Miles Postdoctoral Fellow at Scripps Institute of Oceanography.

Michael Ratner '63 retired a few years ago and lives in Manhattan. He spent his career running a construction and woodworking company that specialized in building stores in the U.S. as well as some internationally. He has traveled to all 50 states and seven continents. Has two sons, one in New York and one in Denver and two grandchildren that live in New York.

John Sobke '61 retired from the Army as a major general in 1995 and from Parsons Brinckerhoff in 2002. He and his wife, Marilyn, have lived at The Landings, a community near Savannah, GA for eighteen years. Both are active in their church, the local university, and community government. They enjoy golf and John plays flute in the community band. Over the years, they have enjoyed several cruises with many of their friends.

Ernest Thiessen '91 is President and Founder of iCan Systems Inc. He created Smartsettle, a collaborative negotiation system for multiple decision makers with conflicting objectives. Smartsettle is based on Thiessen's dissertation research that he published while at Cornell in 1991 plus another three decades of research and development. His Ph.D. advisor was Professor Pete Loucks.

Save the Date and Time!

CEE's Virtual Alumni Gathering
Saturday, June 12, 2021
9:45 a.m. – 11:00 a.m. ET

We look forward to seeing you!

CornellEngineering
Civil and Environmental Engineering
220 Hollister Hall, 527 College Ave.
Ithaca, NY 14853-3501

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Write to us! Share some recent news, or just let us know how you are doing! Email civil_env_eng@cornell.edu, or visit us at <http://cee.cornell.edu/cee/alumni/> to submit an alumni note.

BY MAIL:
Cornell University
School of Civil and Environmental Engineering
220 Hollister Hall
527 College Ave.
Ithaca, NY 14853-3501

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