Looking back on my first semester as the Charles E. Via, Jr. Department of Civil and Environmental Engineering Interim Department Head, I am proud of the accomplishments of our students and faculty and am excited about the potential future ahead of us.

We just welcomed a new group of undergraduate and graduate students to CEE at the start of the semester, with our highest enrollment numbers in several years. It is very rewarding to see the popularity of our program and we look forward to helping these students excel in their education and beyond.

Many of the accomplishments of our students are from our outstanding Via Scholars. I know that the Via family would be proud of the work these students are doing and their service to the profession and society. I encourage you to look through their profiles starting on page 20 to learn more about each of them. Hopefully, you will get the chance to interact with them when you visit campus, through professional activities, or as future employers. It is students such as these that help us remain ranked among the top CEE departments in the country year after year.

Our faculty also contribute to the strength of our department and this semester we added three faculty members to our team. Dr. Hosein Foroutan and Dr. Siddharth Saksena joined the Environmental and Water Resources Program and Dr. Scott Case joined the Structural Engineering and Materials Program.

One component of our CEE department mission statement is to “provide civil and environmental engineering leadership and service to the state, the profession, and society at large.” I think you will agree that our faculty are certainly doing that. You can read about the numerous accomplishments and honors of our faculty on page eight. Each and every day, our faculty and students are bringing the future into focus as they solve problems and invent solutions and techniques that will drive society forward. I hope you take the chance to read about a few of these throughout this report.

I’m looking forward to another exciting year and, once again, thank you for your support. The innovative work we do would not be possible without the support of our more than 11,000 living alumni. Your generosity and dedication to our efforts are helping to develop a new generation of engineers ready to improve the world we live in.

Please visit cee.vt.edu and join us on Facebook and Twitter to follow the latest news and research going on in the department.

With kind regards,

Mark Widdowson
Professor and Interim Department Head
# Table of Contents

**Department Head’s Message** .......................................................... 2

**Student News**

- Undergraduate Scholarships .......................................................... 4
- Graduate Scholarships ................................................................ 5
- Ph.D. degrees awarded ................................................................. 6

**Faculty**

- CEE Faculty by Program Area ....................................................... 7
- Faculty Honors and Achievements ................................................ 8
- Marc Edwards receives Hoover Humanitarian Medal ................... 9

**Program Areas**

- Vecellio Construction Engineering and Management Program .... 10
- Environmental and Water Resources Engineering Program ......... 12
- Geotechnical Engineering Program .............................................. 16
- Structural Engineering and Materials Program ......................... 17
- Transportation Infrastructures and Systems Engineering Program 19

**Research News**

- Freddy Paige is helping residents across Virginia reduce energy consumption ............................................. 11
- SWIFT is working to replenish groundwater in eastern Virginia ........................................................................ 13
- The Future of the Occoquan Watershed Monitoring Laboratory ........................................................................ 14
- Eric Jacques is working to protect people and infrastructure ............................................................................. 18

**VIA Scholars** ................................................................................. 20

**VIA Donors** .................................................................................. 36

**Interim Department Head** ............................................................... Mark Widdowson

**Editor and Designer** ................................................................... Courtney Sakry

Cover Photo: Occoquan Reservoir - Photo taken by Stanley Grant.
CE Alumni Board Scholarship
   Daniela Charles
   Victoria Easley
   Louis Hatcher
   Danielle Kassel
   Justin Wingenfield

Kenneth R. Ayers ’80 Memorial Scholarship
   Nathaniel Clark
   Analee Szuszman

Kelso Baker Scholarship
   Charles Hampton
   Kenneth Morrison
   William Roxby
   Benjamin Stipes

Michael Baker Corporation Engineering Scholarship
   Frank Mazzola

Balzer & Associates Scholarship
   Ahmed Ahmed

James L. Bland Civil Engineering Scholarship
   Andrew Manion

Charles and Patricia Brown Scholarship
   Duncan Sims

Everett Carter Memorial Scholarship
   Kase Poling

William A. Caruthers CE Scholarship
   Jack Buchanan
   Daniela Charles

Joseph and Jane Christenbury Memorial Scholarship
   Drew Ayers

Civil Engineering Class of ’58 Scholarship
   Julia Cadman
   Emily Potter
   Peter Schwartz
   Connor Smith

Warren F. Cline Scholarship
   Elliot Idio
   Jenna Woyner

Stanley and Francis Cohen Scholarship
   Henry Brown
   Michael Gee

John DeBell Civil Engineering Scholarship
   Malcolm Carter

Dewberry Scholarship
   Zabih Safi

Walter and Mary Ruth Duncan Scholarship
   Conor Doane
   Eric Radecki

Vernon and Rebecca Duncan Scholarship
   Sophia Schenk

Doug and Laurie Fahl Family CEE Excellence Scholarship
   Carly Federman
   Benjamin Roston

J. Stuart Franklin, Jr. Civil Engineering Scholarship
   Andrew Brown
   Sean Foley
   Bradley Gritz
   Kate Lord
   Victor O’Toole
   Lillie Saba
   Brandon Vellozzi

Lois Cox and Edna Goodwin Scholarship
   Daniel McKiilop

Ralph P. Hines ’59 Scholarship
   Jonathan Epperson

Charles S. Hughes Scholarship
   Ethan Obrenader
   Kandace Williams

Williams A. Joyner Scholarship
   Lauren Epps
   Erin Hrovatic

Dennis & Sherry Kamber Scholarship
   Jack Popelka
   John Zeiglar

Lingerfelt Family Scholarship
   Alexie Jean Jacques
   Jordan Staley
   Jenna Woyner

Hersie B. & Ethel G. McCauley Scholarship
   Michael Harper
   Jonathon Neeble

Andrew “Tripp” McDavid Memorial Scholarship
   Evan Jones

Kenton & Liliana Meland Scholarship
   Joshua Artz

Newport News Shipbuilding Scholarship
   Connor Smith

John E. Pruitt, Jr. Scholarship
   Kyrsten Dallanegra
   Henry Hutcheson

Richard Quarterman ’04 Memorial Scholarship
   Noah Clark

Howell & Ann Simmons Land Development Design Scholarship
   Ann Tkacik

Stantec Award for Excellence in Engineering
   Sydney Greenspan

George A. Stewart Scholarship
   Alyssa Ard
   Adam Caretti
   Genevieve Davis
   Rosa Dixon
   Carly Edwards
   William Hiatt
   Marcella Kaplan
   Jamie Timmer

L.J. Turner & W.S. Dewhirst Scholarship
   William Cole
   Wesley Yeung

Vecellio Scholarship
   Jaclyn McCarthy
   Carl Moquillaza
   Rodrigo Teran Montero

Virginia Concrete Scholarship
   Lydia Grayson

Donald and Mary Wiebke Scholarship
   Aleia Warren

Williams Industries Scholarship
   Kathryn Bruckner

Verne & Jewel Williamson Scholarship
   Simer Choudhary
### American Institute of Steel Construction (AISC) Education Foundation Scholarship
- Eric Bianchi
- Seth Caudle
- Allison McEntee
- Ryan Stevens

### American Association of University Women (AAUW) Selected Professions Fellowship
- Amanda Darling

### Ann N. and Thomas N. Hunnicutt, III Fellowship
- Seth Caudle
- Sungwoo Kim
- Ronald Slaven

### AWWA Graduate Student Scholarship
- Anmol Vishwakarma
- Ishi Keenum

### Davenport Leadership Scholarship
- Eric Bianchi
- James Boykin

### Deep Foundation Institute’s John O’Malley Civil Engineering Scholarship
- Prakash Ghimire

### Edna Bailey Sussman Fellosip
- Zhaohui An
- Kyung Sun Chung
- Sahil Dargan
- Brandon Dillon

### Edward L. Beale Civil Engineering Fellowship
- Stephanie Attallah
- Navid Mirmohamadsadeghi

### Fulbright Scholarship
- Muhammad Ali
- Julio Cesar Copana Paucara
- Mohammad Yunus Naseri
- Martin Scavone
- Marie Carmen Landivar Guaratatanga

### Gates Foundation Scholarship
- James Boykin

### GEM Associate Fellowship
- E. Wendell Grinton
- Dwayne Jefferson
- Jalen Johnson
- Daniel Keku
- Kathryn Lopez

### Grizzard Scholarship
- Yewei Sun
- Ishi Keenum

### G.V. Loganathan Memorial Fellowship
- Matthew Ferby
- Kory Wait

### ICTAS Doctoral Fellowship
- Rebecca Kris
- Krista Liguori

### John and Natalie Hawkins Memorial Fellowship
- Collin Sweeney

### Kappa Alpha Theta Scholarship
- Amanda Darling

### Multicultural Academic Opportunities Program (MAOP)
- C. Wendell Grinton
- Dwayne Jefferson
- Jalen Johnson
- Jeannie Purchase

### Myers-Lawson School of Construction Doctoral Fellowship
- Emma Coleman

### National Research Traineeship, Disaster Resilience and Risk Management
- Anmol Haque
- Steven Hoagland
- Michael Lee

### National Science Foundation Graduate Research Fellowship
- Brooke Baugher
- Abraham Cullom
- Ayella Maile-Moskowitz
- Hanniyah Majeed
- Erin Milligan

### New Horizon Graduate Scholar
- Maria Amaya
- Stefany Baron
- James Boykin
- Benjamin Davis
- Matthew Ferby
- C. Wendell Grinton
- Emily Jannace
- Joel Javier
- Dwayne Jefferson
- Jalen Johnson
- Daniel Keku
- David Kormos
- Michael Lee
- Krista Liguori
- Kathryn Lopez

### Pratt Graduate Fellowship
- Abdelrahman Alsardi
- Amin Moghadam
- Aimane Najmeddine

### Rayldon G. and Madelyn A. Curry Graduate Fellowship
- Stacey Bonderer
- Seifeldeen Eteifa
- Fubin Liu

### Terracon Fellowship
- Alie Vuper

### Torgersen Research Excellence Award
- Sogand Hasanzadeh

### Vecellio Fellowship
- Milad Afzalan
- Diana Franco Duran
- Mo Hu

### Virginia Lake and Watershed Association Leo Bourassa Scholarship
- Meredith Bullard Martinez
- Amelia Flanery

### Virginia Sea Grant Graduate Research Fellowship
- Michael Lee

### Virginia Space Grant Consortium Graduate Fellowship
- Kaleigh Yost

### Walts Fellowship
- Matthew Florence
- Samantha Hogar
The following doctoral degrees were awarded to CEE students between Summer II 2018 and Summer I 2019:

<table>
<thead>
<tr>
<th>Name</th>
<th>Dissertation Title</th>
<th>Advisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mohammed Almannaa</td>
<td>Optimizing Bike Sharing Systems: Dynamic Prediction Using Machine Learning and Statistical Techniques and Rebalancing</td>
<td>Hesham Rakha</td>
</tr>
<tr>
<td>Huthaifa Ashqar</td>
<td>Strategic Design of Smart Bike-Sharing Systems for Smart Cities</td>
<td>Hesham Rakha</td>
</tr>
<tr>
<td>Kaveh Bakhsh Kelarestaghi</td>
<td>A Risk Based Approach to Intelligent Transportation Systems Security</td>
<td>Kevin Heaslip</td>
</tr>
<tr>
<td>Ayden Baran</td>
<td>Integrated Model-Based Impact Assessment of Climate Change and Land Use Change on the Occoquan Watershed</td>
<td>Adil Godrej</td>
</tr>
<tr>
<td>Vincent Bongioanni</td>
<td>Enhancing Network-Level Pavement Macrotecture Assessment</td>
<td>Gerardo Flintsch</td>
</tr>
<tr>
<td>Sina Dabiri</td>
<td>Application of Depp Learning in Intelligent Transportation Systems</td>
<td>Kevin Heaslip</td>
</tr>
<tr>
<td>Lakshmi Narasimha</td>
<td>Bayesian Methods for Intensity Measure and Ground Motion Selection in Performance-Based Earthquake Engineering</td>
<td>Madeleine Flint</td>
</tr>
<tr>
<td>Alireza Farzampour</td>
<td>Evaluating Shear Links for Use in Seismic Structural Fuses</td>
<td>Matt Eatherton</td>
</tr>
<tr>
<td>Antonio Fuentes</td>
<td>Proactive Decision Support Tools for National Park and Non-Traditional Agencies in Solving Traffic-Related Problems</td>
<td>Kevin Heaslip</td>
</tr>
<tr>
<td>John Gray</td>
<td>Trapping Efficiencies for Four Types of Pressure-Difference Bedload Samplers</td>
<td>Adil Godrej</td>
</tr>
<tr>
<td>Miguel Andres Guerra Moscoso</td>
<td>Prototyping as a User-Centered and Risk Reduction Approach to the Planning, Design, and Construction of More Sustainable Infrastructure</td>
<td>Tripp Shealy and Denise Simmons</td>
</tr>
<tr>
<td>Lee Hixon</td>
<td>Potential and Quantification of Street Sweeping Pollutant Reductions towards addressing TMDL WLAs for MS4 Compliance</td>
<td>Randy Dymond</td>
</tr>
<tr>
<td>Syeed Md Iskander</td>
<td>Advanced Technologies for Resource Recovery and Contaminants Removal from Landfill Leachate</td>
<td>Jason He</td>
</tr>
<tr>
<td>Dlya Ismael</td>
<td>Goal Framing to Encourage More Sustainable Engineering Design Decisions for the Build Environment Across Cultures</td>
<td>Tripp Shealy</td>
</tr>
<tr>
<td>Adnan Lodhi</td>
<td>A Decision Support System for Indirect Potable Reuse Based on Integrated Modeling</td>
<td>Adil Godrej</td>
</tr>
<tr>
<td>Alfonso Rivera Rojas</td>
<td>Lateral Response of Stiff Column-Supported Shallow Foundations</td>
<td>Guney Olgun and Tom Brandon</td>
</tr>
<tr>
<td>Jonathan Walker</td>
<td>An Empirical Method of Ascertaining the Null Points from a Dedicated Short-Range Communication (DSRC) Roadside Unit (RSU) at a Highway On/Off-Ramp</td>
<td>Kevin Heaslip</td>
</tr>
<tr>
<td>Qichao Wang</td>
<td>Street Traffic Signal Optimal Control for NEMA Controllers</td>
<td>Monty Abbas</td>
</tr>
<tr>
<td>Chenxi Xing</td>
<td>An Analytical Study on the Behavior of Reinforced Concrete Interior Beam-Column Joints</td>
<td>Roberto Leon and Ioannis Koutromanos</td>
</tr>
<tr>
<td>Shiqiang Zou</td>
<td>Advancing Forward Osmosis for Energy-efficient Wastewater Treatment towards Enhanced Water Reuse and Resource Recovery</td>
<td>Jason He</td>
</tr>
</tbody>
</table>
VECELLIO CONSTRUCTION ENGINEERING AND MANAGEMENT

Michael J. Garvin, Associate Professor
Farrokh Jazizadeh Karimi, Assistant Professor
Frederick Paige, Assistant Professor
Tripp Shealy, Assistant Professor
Sunil K. Sinha, Professor

ENVIRONMENTAL & WATER RESOURCES ENGINEERING

Andrea M. Dietrich, Professor
Randel L. Dymond, Professor
Marc A. Edwards, University Distinguished Professor
Hosein Foroutan, Assistant Professor
Daniel L. Gallagher, Professor
Adil N. Godrej, Research Associate Professor (OWML)
Stan Grant, Professor (OWML)
Zhen (Jason) He, Professor
Erich T. Hester, Associate Professor
Jennifer L. Irish, Professor
Gabriel Isaacman-VanWertz, Assistant Professor
William R. Knocke, Professor
John C. Little, Charles E. Via, Jr. Professor
Linsey C. Marr, Charles P. Lunsford Professor
Amy J. Pruden, W. Thomas Rice Professor
Megan Rippy, Assistant Professor (OWML)
Robert Paolo Scardina, Assistant Professor of Practice
Siddharth Saksena, Research Assistant Professor
Kyle Strom, Associate Professor
Peter J. Vikesland, Nick Prillaman Professor / Program Coordinator
Zhiwu (Drew) Wang, Assistant Professor (OWML)
Claire White, Assistant Professor of Practice
Mark A. Widdowson, Interim Department Head and Professor
Kevin Young, Assistant Professor of Practice

GEOTECHNICAL ENGINEERING

Thomas L. Brandon, Professor
Joseph E. Dove, Associate Professor of Practice
George M. Filz, Charles E. Via, Jr. Professor
Russell A. Green, Professor
Matthew Mauldon, Associate Professor
Adrian Rodriguez-Marek, Professor/Program Coordinator
Nina Stark, Associate Professor and Anthony and Catherine Moraco Faculty Fellow
Alba Yerro Colom, Assistant Professor

STRUCTURAL ENGINEERING AND MATERIALS

Scott W. Case, Reynolds Metals Professor
Finley A. Charney, Professor
Matthew R. Eatherton, Associate Professor and Raymond G. and Madelyn Ann Curry Faculty Fellow in Structural Engineering
Madeleine M. Flint, Assistant Professor
Matthew H. Hebdon, Assistant Professor
Eric Jacques, Assistant Professor
Ioannis Koutromanos, Associate Professor
Robert T. Leon, David H. Burrows Professor/Program Coordinator
Carin L. Roberts-Wollmann, Professor
Rodrigo Sarlo, Assistant Professor
Maryam Shakiba, Assistant Professor

TRANSPORTATION INFRASTRUCTURE AND SYSTEMS ENGINEERING

Montasir Abbas, Professor
Alexander S. Brand, Assistant Professor
Gerardo W. Flintsch, Professor
Kathleen L. Hancock, Associate Professor
Kevin P. Heaslip, Associate Professor and CACI Faculty Fellow/Program Coordinator
Susan Hotle, Assistant Professor
Bryan J. Katz, Associate Professor of Practice
Hesham A. Rakha, Samuel Reynolds Pritchard Professor of Engineering
Antonio A. Trani, Professor
Linbing Wang, Professor

EMERITUS FACULTY

Gregory D. Boardman, EWR
Thomas E. Cousins, SEM
William E. Cox, SEM
Donald R. Drew, TISE
J. Michael Duncan, GEOT
W. Samuel Easterling, SEM
Antoine G. Hobeika, TISE
Robert C. Hoehn, EWR
Siegfried M. Holzer, SEM
J. Martin Hughes, EWR
Raymond H. Plaut, SEM
Clifford W. Randall, EWR
James K. Mitchell, GEOT
Thomas M. Murray, SEM
John T. Novak, EWR
Raymond H. Plaut, SEM
Clifford W. Randall, EWR
Kamal B. Rojiani, SEM
Dusan Teodorovic, TISE
Michael C. Vorster, CEM
Richard E. Weyers, SEM
<table>
<thead>
<tr>
<th>Name</th>
<th>Honors/Advancements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gregory Boardman</td>
<td>Dr. Kenneth D. Kerri Excellence in Workforce Development Award from the Association of Boards of Certification</td>
</tr>
<tr>
<td>W. Samuel Easterling</td>
<td>Beedle Award from the Structural Stability Research Council (SSRC)</td>
</tr>
<tr>
<td>Marc Edwards</td>
<td>Hoover Humanitarian Medal</td>
</tr>
<tr>
<td>Randy Dymond</td>
<td>W.S. “Pete” White Innovation in Engineering Education Award from the College of Engineering</td>
</tr>
<tr>
<td>Gerardo Flintsch</td>
<td>Appointed to the executive committee of the World Road Association</td>
</tr>
<tr>
<td>Russell Green</td>
<td>Certificate of Teaching Excellence from the College of Engineering</td>
</tr>
<tr>
<td>Kitty Hancock</td>
<td>2019 Governor’s Transportation Safety Award</td>
</tr>
<tr>
<td>Jason He</td>
<td>Dean’s Award for Excellence in Research from the College of Engineering. 2019 highly Cited Researcher by Clarivate Analytics</td>
</tr>
<tr>
<td>Kevin Heaslip</td>
<td>Named CADI Fellow  G.V. Loganathan Award</td>
</tr>
<tr>
<td>Matt Hebdon</td>
<td>2019 Robert J. Dexter Memorial Award Lecture  Early Career Award by the American Institute of Steel Construction (AISC)</td>
</tr>
<tr>
<td>Jennifer Irish</td>
<td>Elected into the Virginia Academy of Science, Engineering, and Medicine (VASEM)</td>
</tr>
<tr>
<td>Kara Lattimer</td>
<td>2018-2019 Award for Excellence in Career Advising</td>
</tr>
<tr>
<td>W. Samuel Easterling</td>
<td>Beedle Award from the Structural Stability Research Council (SSRC)</td>
</tr>
<tr>
<td>Gerardo Flintsch</td>
<td>Appointed to the executive committee of the World Road Association</td>
</tr>
<tr>
<td>Russell Green</td>
<td>Certificate of Teaching Excellence from the College of Engineering</td>
</tr>
<tr>
<td>Kitty Hancock</td>
<td>2019 Governor’s Transportation Safety Award</td>
</tr>
<tr>
<td>Paolo Scardina</td>
<td>2019 Alumni Teaching Excellence Award</td>
</tr>
</tbody>
</table>
MARC EDWARDS HONORED WITH HOOVER HUMANITARIAN MEDAL

Marc Edwards, University Distinguished Professor in the Charles E. Via Jr. Department of Civil and Environmental Engineering at Virginia Tech, will be awarded the 71st Hoover Humanitarian Medal at the American Society of Civil Engineers annual meeting Oct. 12 in Miami, Florida.

The award recognizes “great, unselfish, non-technical acts by engineers,” who have “advanced the well-being of humanity” and contributed to “development of a richer and more enduring civilization,” according to the society’s website.

Edwards, who joined the Virginia Tech community in 1997, is being honored for tenacious investigative science research that exposed environmental injustices in Washington, D.C.; Flint, Michigan; Denmark, South Carolina; and related work in dozens of other communities that helped assuage concerns about water quality.

By melding citizen science, applied ethics, investigative journalism, and activism if environmental crimes were revealed, Edwards helped instigate over a half billion dollars of relief funding, congressional hearings, criminal charges, new regulations, lawsuits, documentary films, and national conversations about antiquated water infrastructure and the role of scientists in society.

His volunteer efforts were largely self-funded and in direct collaboration with citizen scientists and parents of affected children - exposing the truth in the face of government intransigence. His decade-long battle to expose health harm from drinking water in Washington, D.C., was previously recognized by the IEEE Barus Award for “courageously defending the public interest at great personal risk” and a MacArthur genius grant in 2008.

Edwards was named amongst TIME Magazine’s 100 Most Influential people in the World, the World’s 50 Greatest Leaders by Fortune Magazine, Politico Magazine’s Top 50 Visionaries who have transformed American politics, Foreign Policy Magazines 100 World’s Greatest Thinkers, and was short-listed amongst Flint whistleblowers as Time person of the year. He was co-recipient of the inaugural 2017 MIT Disobedience Award and most recently received the AAAS Scientific Freedom and Responsibility award.

Herbert Hoover accepted the first medal in 1930, stipulated its purpose: to “mark the public service of individuals who have gone outside of their strictly professional work to interest themselves in civic and humanitarian affairs.” Previous recipients include Dwight Eisenhower, Jimmy Carter, David Packard, and Stephen Wozniak.

Edwards earned a bachelor’s degree in biophysics from the State University of New York at Buffalo in 1986 and master’s and doctoral degrees in environmental engineering at the University of Washington in 1988 and 1991, respectively.
The Vecellio Construction Engineering and Management Program said good-bye to Chema de la Garza after serving on the faculty for over 30 years. Chema became the Chair of the Glenn Department of Civil Engineering at Clemson University, and the program wishes him all the best in his new position.

Yet, the prominence and excellence of the program continues. VCEMP welcomed one of its largest graduate classes in recent years in the fall, and it now has over 50 current M.S. and Ph.D. students. In addition, the 2019 Vecellio Distinguished Lecture will be presented by Ross Myers, Chairman and CEO of Allan Myers, Inc. the Mid-Atlantic’s largest heavy civil construction and construction materials company. Four undergraduate Vecellio Scholarships and three Vecellio Fellowships were awarded to highly-qualified students who have demonstrated leadership, academic excellence and an interest in pursuing a career in the construction industry. Scholars are Catherine McClain, Carolyn Olmsted, Victor O’Toole and Jamie Timmer while Fellows are Milad Afzalan, Diana Franco Duran and Mo Hu.

VCEMP also recognized several students and alumni:
- Outstanding VCEMP Graduate students: Milad Afzalan, Sogand Hasanzadeh, Farnaz Khaghani and Armin Rahimi-Golkhandan
- Outstanding VCEMP Alumnus: Dr. Pardis Pishdad-Bozorgi (MSCE’12) who is now an Assistant Professor in the School of Building Construction at Georgia Tech

Faculty from the program remain very active in research, teaching, and outreach. Michael J. Garvin is participating in a $2.5 million research project for the Federal Highway Administration to develop a tool to support public agencies in their selection of alternative project delivery methods. Mike also co-edited a book on Public-Private Partnerships with Dr. Ray Levitt and Dr. Dick Scott of Stanford University published by Edward Elgar, and he established a new departmental center – the Center for Infrastructure Delivery Excellence. Farrokh Jazizadeh Karimi secured funding from the National Science Foundation, Virginia Tech ICTAS, and the American Association of Railroads while publishing eight journal and eight conference papers. Farrokh also organized and chaired the first workshop on Building Blocks for Smarter Cities, which brought 35 participants together including researchers from universities and national labs, as well as program managers from the National Science Foundation (NSF), the Department of Energy (DOE), and the National Institute for Standards and Technology (NIST).

Freddy Paige continued working with Housing Virginia to develop solutions for reducing energy consumption in affordable senior housing. The team monitored energy consumption behaviors and provided energy education interventions for a 39-unit community in Richmond, VA. The team found that technology solutions need to be augmented by social interventions. Freddy also worked with VCEMP graduate student Brooke Baugher to lead a successful service-learning trip to Rilima, Rwanda. Through a partnership with Fondazione Marcegaglia Onlus (FMO), Virginia Tech students successfully built a composting latrine as an alternative to existing pit latrines. Tripp Shealy continued working with researchers at Purdue to learn what engineering students believe about climate change. The team surveyed more than 4,000 senior engineering students across the country. More than 80 percent of students recognize humans are contributing to climate change but less than 5 percent fully understand how to prevent it or prepare for it. Tripp also continued working with colleagues at Princeton, Columbia, and UVA to study engineering decision making methods. Recent results that demonstrate how to encourage more sustainable engineering design were published in the journal Nature Sustainability.

Finally, Sunil Sinha is working with more than 700 water utilities across the country for water pipeline performance analysis and artificial intelligence applications. Sunil received a National Science Foundation (NSF) Engineering Research Center (ERC) planning grant for Smart One Water (SOW) Cyber-Physical-Environmental-Social Digital Platform to Operationalize Sustainability and Resilience.
Frederick Paige, assistant professor of civil and environmental engineering, is on a mission to improve the quality of life for the residents of Virginia and nationwide. He’s producing an academic contribution by improving energy education and feedback for affordable housing communities. Building upon a statewide longitudinal study by the Virginia Center for Housing Research (VCHR), Dr. Paige and his research team is developing solutions to improve the energy performance of buildings that do not meet their energy goals. The ideal solution is education. Data from previous studies showed that residents that were educated on their housing unit were consuming less energy and saving more money. A year after providing an educational intervention, energy performance goals have not been reached, but the community’s understanding of energy has changed, and their motivation to save energy improved.

“Studies like this can be difficult to make sure everything goes well,” Paige said. “It has just as much value to see that certain things don’t work so we can steer away from that and move in a different direction.”

As they aim to set up similar studies in the future for family housing situations and campus housing at Virginia Tech, they plan to experiment with a variety of energy education and feedback protocols. New energy monitors will allow Paige and his team to see data in real-time and provide customized feedback messages to the residents along the way, rather than waiting until the end of the data collection to give feedback. “With this new way, we are hoping to keep people informed and help them live the best way they can,” said Paige.

Paige is currently working in affordable housing communities because it is more systematic and community-based. “If you can make changes on a community scale, you can get closer to also implementing it in other housing situations for the greater good of all,” he said. This data also has the potential to influence policy and allow leaders in Virginia to make more informed decisions about societal, economic, and environmental impacts of infrastructure.

“This is a good example of how Virginia Tech research does impact communities, and we are truly influencing how buildings are going to be built in the future,” he said. “This is not laboratory work. It got us out into the community to meet people and make a difference in their personal lives.”

Paige’s paper titled “fiEECe, an Energy Use and Occupant Behavior Dataset for Net Zero Energy Affordable Senior Residential Buildings” on this project is going to be published in Scientific Data, the peer-reviewed open access scientific journal published by the Nature Publishing Group.

Freddy Paige is helping residents across Virginia reduce their energy consumption
The Environmental and Water Resources (EWR) Program is one of the most highly respected graduate programs in environmental engineering in the United States. This recognition strongly reflects the dedicated work of the EWR faculty, staff, and students both on the Blacksburg campus and in Northern Virginia at the Occoquan Watershed Monitoring Laboratory (OWML) in Manassas. You can read more about the work done at OWML and the upcoming expansion on page 14.

During 2019, EWR welcomed Hosein Foroutan to the faculty. Dr. Foroutan specializes in the development and application of advanced computational techniques for the study of environmental flow systems, particularly those related to atmospheric transport and air quality. He was formerly in the Department of Biomedical Engineering and Mechanics at Virginia Tech prior to its reorganization.

With the addition of Foroutan, the air group – already consisting of Linsey Marr and Gabriel Isaacman-Van Wertz – is poised to become a major center of air pollution research in the country. In addition, OWML recently welcomed Art Grocholski as the new Administrative Operations Manager to replace Barbara Angelotti who retired after 35 years at the Occoquan Watershed Monitoring Laboratory.

The high quality of the work done by students within EWR was recognized by a number of external awards and fellowships. EWR students captured three of the four 2019 Association of Environmental Engineering and Science Professors (AEESP) awards for best dissertation or thesis. Haoran Wei (advised by Peter Vikesland) and Emily Garner (advised by Amy Pruden and Marc Edwards) each received one of the two best dissertation awards and Timothy Kent (advised by Zhiwu ‘Drew’ Wang) received one of the Master’s Thesis awards. Jun-Whan Lee (advised by Jen Irish) was the recipient of a highly competitive Virginia Sea Grant Graduate Fellowship.

In addition, student teams strongly represented EWR on the podium at the 2019 WaterJAM (the joint meeting of the Virginia Section of the American Water Works Association and the Virginia Water Environment Association) awards in Virginia Beach.

EWR faculty received both internal and external recognition for their efforts this past year. As described in detail elsewhere in this Report, Marc Edwards was the 2019 recipient of the prestigious Hoover Humanitarian Medal in recognition of his extensive civic and humanitarian work. At the 2019 VT College of Engineering Dean’s awards, Randy Dymond received the Pete White Innovation in Engineering Education award. This was the first time a member of CEE had received this honor. Also in 2019, Linsey Marr received the Excellence in Teaching Award from the VT Center for Excellence in Teaching and Learning and Jen Irish was elected into the Virginia Academy of Science, Engineering, and Medicine (VASEM).

The year saw Jen Irish conclude her U.S. Fulbright Senior Fellowship in Israel, John Little return from a sabbatical in China and France, and Amy Pruden conclude her tenure on the National Academy of Sciences Committee on Legionella in Built Water Systems.

Jen Irish was recently selected as a member of the Virginia Academy of Science, Engineering, and Medicine (VASEM). VASEM provides non-partisan, objective guidance to decision-makers in the Commonwealth of Virginia. Members are selected if they have an outstanding record of scientific accomplishments, national and international recognition, and willingness to participate in the activities of the Corporation. Irish was honored at a reception at the National Academy of Sciences on October 2.
The average American uses 80-100 gallons of water a day. When that number is multiplied by the 8.47 million residents of the Commonwealth of Virginia, there is a huge amount of water being used daily. Specifically, groundwater is being used in eastern Virginia at rates faster than it is being replaced. Homes and industries in eastern Virginia remove approximately 155 million gallons of groundwater from the Potomac Aquifer every day, leading to depletion of the aquifer. In addition, groundwater withdrawals in eastern Virginia contribute to the sinking of land in parts of the region. Sinking land subjects the region to the impacts associated with rising sea levels.

The Sustainable Water Initiative for Tomorrow (SWIFT) is a major replenishment project that is working to recharge the Potomac Aquifer with up to 100 million gallons of drinking water daily. SWIFT is an innovative infrastructure project headed up by the Hampton Roads Sanitation District (HRSD) involving the addition of advanced water treatment processes to seven HRSD wastewater treatment facilities. The HRSD provides service to 18 cities and counties in southeast Virginia with a population of 1.7 million people.

The Virginia Tech Via Department of Civil and Environmental has a number of graduate students and EWR faculty working closely with engineers and affiliate faculty member Charles Bott at HRSD to protect the region’s environment and enhance the sustainability of long-term groundwater supply. To ensure SWIFT is protective of groundwater quality, the Commonwealth of Virginia established the Potomac Aquifer Recharge Monitoring Laboratory (PARML) modeled in part after the Occoquan Watershed Monitoring Laboratory. Professor Mark Widdowson is the Co-Director of PARML.

SWIFT uses a carbon-based advanced water treatment process and is carefully monitored to meet strict drinking water safety standards. The SWIFT Research Center is located at the Nansemond Treatment Plant in Suffolk where a full-scale advanced water treatment system replenishes the Potomac Aquifer with up to one million gallons of drinking water quality SWIFT Water daily.

“SWIFT will recycle highly treated water, which would otherwise be discharged into the Elizabeth, James or York rivers, by instead purifying it through advanced water treatment technologies to meet drinking water quality standards,” said Amy Pruden, W. Thomas Rice Professor.

Overall, SWIFT will provide a number of benefits by helping to protect the Potomac Aquifer, fighting sea level rise, and protecting groundwater from saltwater intrusion. These contribute to the support of Virginia’s economy by providing businesses with the water that they need to operate.
Since the Occoquan Watershed Monitoring Laboratory (OWML) was established in 1972, it has been helping to provide a drought-proof, environmentally sensitive, and high-quality source of drinking water for over one million residents in Northern Virginia. The lab was part of the nation’s first deliberate indirect potable reuse program. “That experiment has been functioning well for over forty years,” says Stanley Grant, professor and co-director of the OWML. Grant came to Virginia Tech from the University of California Irvine in 2018, and now serves as co-director for the OWML, along with Associate Research Professor Adil Godrej (CE, 1982) who was been at the lab for 30 years. Building on that long and successful history, the lab is working with stakeholders and faculty, inside and outside the Department of Civil and Environmental Engineering at Virginia Tech, to tackle the next grand challenges in urban water sustainability.

The lab is located in Manassas, Virginia, and monitors the Occoquan Watershed, encompassing portions of Fairfax County, Fauquier County, Loudoun County, Prince William County, City of Manassas, and the City of Manassas Park.

In the 1960s, urban and residential growth in the greater DC area began to negatively impact both the quality and quantity of drinking water available for the northern Virginia region. Many of the new residential developments in the Occoquan watershed had their own small sewage treatment plants, and nutrient discharges from these plants was starting to fuel algal blooms in the Occoquan Reservoir, one of the primary sources of drinking water for Fairfax County. “Something had to be done to solve the twin challenges of too many nutrients and too little water,” says Dr. Godrej. After much drama and wrangling—it took Noman M. Cole, Jr., a civic activist and nuclear engineer who led investigations into both the Three Mile Island nuclear accident in Pennsylvania and the near meltdown of Chernobyl Unit No. 4 in the Ukraine, to make it happen—the various parties came up with a radical solution still being replicated around the nation and throughout the world: “deliberate indirect potable reuse”.

In the Occoquan, this involved consolidating all sewage treatment plants discharging to the reservoir into one large and high-tech facility known as the Upper Occoquan Service Authority (UOSA). Product water from this flagship facility mixes with freshwater from the Bull Run and Occoquan Rivers, flows into the Occoquan Reservoir, and sits there for a time before being pumped to the Fairfax County drinking water treatment plant, or discharged over the dam to the Potomac River. Because this idea—of deliberately supplementing the water supply with highly treated wastewater, or “reclaimed water”—was untested,
a neutral third-party was needed to monitor the system, provide operational advice to the various stakeholders, and ensure that this grand experiment protected human and ecosystem health. From this “Occoquan Policy,” which was legislatively mandated as 9VAC25-410, Virginia Tech’s OWML was born. Under the leadership of Tom Grizzard (CE 1968), the lab was a vital part of the Occoquan experiment for 40 years.

Today, the OWML is a unique mix of academic and professional staff that monitor and study stream flow and water quality in the rivers that feed the reservoir, and in the reservoir itself. Based on measurements and models, they provide information and technical support to local jurisdictions and the water supply and reclamation entities. “It is not a normal academic enterprise,” said Grant. “Mostly what I’ve done in my career is figure out how to get the next article published, the next student graduated, or the next research grant funded. This is a much bigger scale, more exciting, focus.”

In the early years the lab focused on novel approaches for controlling nitrogen and phosphorus in the reservoir, to keep algal blooms from occurring. Then the focus was on human pathogens. More recently, there is increasing concern about rising sodium and chloride concentrations in the reservoir. If sodium levels get too high, it can affect the taste of the drinking water. Chlorides impact surface water quality and riparian habitat for sensitive species, like fish and the invertebrates they feed on.

The sources of these inorganics are still being worked out, but no doubt include the use of deicers on roads and parking lots in the watershed, and various discharges from homes and industrial facilities that eventually find their way to the sewage collection system and UOSA. “The problem with sodium and chloride,” says Dr. Godrej, “is that these ions pass right through the treatment systems we have in place, both in the sewage treatment plant and in the water treatment plant. The only way you can get rid of them is by employing reverse osmosis, which is energetically expensive. In effect, you have to desalinate the water to bring the sodium and chloride concentrations down to an acceptable level.”

In fact, in many arid areas of the US, for example in the arid Southwest, dissolved salt concentrations do dictate the unit processes selected for indirect potable reuse, including reverse osmosis where it is merited. “The issue of salt in potable reuse is not a new one,” says Bob Angelotti (CE 1985), Executive Director of Technical Services at UOSA.

While salt has been an elemental part of potable reuse planning for decades, rising salt concentrations in surface waters across the Occoquan Watershed are posing new questions about impacts to all of its major urban water systems, including sewage collection and treatment, water recycling, drinking water treatment and distribution, and protection of surface water quality and critical watershed habitat. Rising salt concentrations in the Occoquan also mirror broader trends for surface waters across the Northeastern US. The trend is so pervasive it has a name: the Freshwater Salinization Syndrome.

“On the positive side,” says Grant, “if we can make progress addressing the Freshwater Salinization Syndrome in the Occoquan, it puts the lab in a leadership position both nationally and globally.”

“It is a really exciting time for the lab. The lab has played an important historical role in urban water sustainability and is positioned well to play an important role going forward,” said Godrej.

Virginia Tech is renovating the lab, and expanding its footprint, from 10,500 square feet of laboratory and office space to 16,600 square feet. The goal is to kick-start a National interdisciplinary research and teaching program that leverages the long-term collaboration between the OWML and stakeholders in the DC area, focused around addressing increasing salt concentrations in the reservoir. To celebrate the grand opening of the new space, and with funds from the National Science Foundation, Grant and Godrej will be hosting a workshop to bring together VT faculty and DC stakeholders, with the goal of defining an urban water research agenda for the coming decades.

“While we’ll continue doing what we’ve done well for the last 40 plus years, I’m quite excited for the future of the lab,” says Grant. “I’m looking forward to working with municipalities, utilities, industry and the world-class faculty at Virginia Tech to make progress on this, and other, pressing challenges to our urban water systems.”
The Geotechnical Engineering Program enjoyed another successful year in its research, teaching, and service missions. On the research side, faculty activity is illustrated by multiple active grants, with funding from several institutions including the National Science Foundation (NSF), the Department of Defense, Électricité de France, and the United States Geological Survey (USGS), among others. Some examples include:

- Nina Stark recently conducted a survey of the Potomac River in Maryland in collaboration with the Virginia Institute of Marine Science on a project funded by SERDP.
- Russell Green and Adrian Rodriguez-Marek continue to work on projects related to liquefaction triggering using energy-based methods on projects funded by NSF and the USGS.
- With the leadership of Alba Yerro-Colom, Virginia Tech has been promoted from Associate to Board Member of the Anura3D MPM Research Community. The Material Point Method (MPM) is an advanced numerical technique, for modeling large deformations and soil-water-structure interaction problems.
- Tom Brandon, Dan VandenBerge, Bernardo Castellanos, and other VT geotechnical alums have nearly finished updating the legacy manual NAVFAC DM 7.01 Soil Mechanics. They will soon start updating the second manual in the series, NAVFAC DM7.02 Foundations and Earth Structures.
- Joe Dove is conducting research to improve the engineering properties of soils, detection of voids in the subsurface using geophysical methods, construction-induced ground vibrations, and the future of big data in geotechnical engineering.

Contributions of the Geotechnical Faculty have been acknowledged through various keynote lectures and invited lectures. Among the awards won by the faculty, George Filz received the American Council of Engineering Companies of Florida Engineering Excellence Award for his work at Kennedy Space Center in support of NASA’s Space Launch System; Nina Stark was named the Anthony and Catherine Moraco Faculty Fellow; Jim Mitchell was honored at U.C. Berkeley with a Distinguished Lecture Series celebrating his 60 Years as an engineering educator and mentor; and Russell Green received the COE Certificate of Teaching Excellence. Among the students, Kristin Ulmer, a Ph.D. student working with Russell Green and Adrian Rodriguez-Marek, won the GeoPoster competition at the 2019 GeoCongress.

Our graduate students again enhanced their professional development by attending the annual GeoCongress, which was in Philadelphia this year. The Duncan Endowment for Graduate Student Travel provides financial support to help make this possible. More information about the endowment and ways to contribute can be found at cee.vt.edu/duncan-endowment. During the conference, we hosted the annual Virginia Tech Alumni and Friends Reception, and more than 100 people attended, an attendance level that may well be a record for U.S. geotechnical programs. Please send your email address to Rachel Atwell (raesquivel@vt.edu) if you would like to be added to our alumni listserv to receive invitations to future events and for other program information.

VT’s Center for Geotechnical Practice and Research (CGPR) continues to have profound impacts on professional practice and on our program. The CGPR is our industry affiliate organization, which includes engineering consulting firms, construction companies, and government agencies. This year, 45 representatives of our member organizations attended the annual CGPR meeting, which many of our members describe as the most unique and valuable professional forum they attend each year.

The coming year will see some changes in our faculty with the retirements of Matthew Mauldon and George Filz. George will continue his engagement with the geotechnical group and the CGPR. We also welcome Dr. Sherif Abdelaziz, who will join the program in January 2020. Sherif is a graduate from Virginia Tech (Ph.D., 2013). He returns after a stellar start to his academic career at Stony Brook University in New York.
The SEM graduate program continues to thrive with over 70 graduate students, with most of them involved in experimental, analytical or design research projects. Highlights for the program this year include:

- The SEM group welcomed Professor Scott Case. Dr. Case’s expertise is in the area of composite materials, including the response of lightweight structural materials to combined fire and mechanical loading as well as accelerated test method development to support long-term durability predictions for adhesives and fiber-reinforced composites.

- Dr. Matt Hebdon was recognized with the American Institute of Steel Construction (AISC) Early Career Faculty Award and presented his research on accelerated galvanic corrosion testing of bridge steels as the 2019 Robert J. Dexter Memorial Award Lecture from the American Iron and Steel Institute (AISI), the National Steel Bridge Alliance (NSBA), and the American Association of State and Highway Transportation Officials (AASHTO) T-14.

- Dr. Matthew Eatherton was named as the Raymond G. and Madelyn Ann Curry Structural Engineering Faculty Fellow in recognition of his teaching and research excellence.

- Four of our graduate students (Eric Bianchi, Seth Caudle, Ryan Stevens and Allison McEntee) received prestigious fellowships from the American Institute of Steel Construction.

- Dr. Madeine Flint was named as the ASCE Natural Hazard Review’s Reviewer of the Year for 2018.

- Dr. Eric Jacques has installed and commissioned the Virginia Tech Shock Tube Testing Facility, a large-scale gas-detonation blast simulator designed to produce high pressure blast waves that simulate those generated by accidental explosions and terrorist bombings. The facility is capable of subjecting targets to blast pressures up to 30 psi with a duration of 25 milliseconds.

- The Bridges and Society course, which is team-taught by almost the entire SEM faculty, took 17 undergrads and 4 faculty members through the Netherlands, Germany and Switzerland looking at the bridges designed by Maillart, Menn, Schleich and other major European engineers. The trip included visits to the labs at the Technical University of Delft (NL), the Technical University of Darmstadt (GE) and a cruise on the Rhine River.

- Selected to host the 2020 American Institute of Steel Construction (AISC) Student Steel Bridge Competition (SSBC) National Finals. May 22-23, 2020. Alumni and friends of CEE are encouraged to volunteer and/or sponsor this opportunity to showcase Virginia Tech Civil Engineering on a national level (email: ssbc2020@vt.edu)

- New graduate design course offerings in wind (Dr. F. Charney) and blast design (Dr. E. Jacques) which makes our graduate SEM curriculum amongst the most comprehensive and diverse in the country.

- Addition of a course on Experimental Methods and Signal Processing (Dr. Sarlo) dealing with structural health monitoring, infrastructure instrumentatation and data processing.

- Addition of a course on advanced structural mechanics (CEE 5490), which focuses on mechanics of materials and elements, specifically as applied in civil engineering design, and provides the basic topics in continuum mechanics, mechanics of materials, and energy methods

- Addition of a non-destructive la component in CEE 3684 (Dr. A. Brand) exposing undergraduate students to techniques commonly used in the field as part of QA/QC controls.

- Addition of an undergraduate section for Forensic Structural Engineering (Dr. Leon), which will become a generic, CEE-wide Forensic Engineering course next year.

- Continuous strong participation by SEM faculty (Drs. M. Flint, R. Sarlo, M. Shakiba, C. Wollman-Roberts, M. Hebdon, M. Eatherton) on summer K12 camps for C-Tech’2, Blast summer camp, Engineering Open House, and others.

- Murray Structure Labs Highlights:
  - Testing of full-scale bridge beams removed from the Lesner Bridge, the Aden Road Bridge and the Hampton Roads Bridge Tunnel approaches to determine residual strength and evaluate repair techniques for corrosion damaged prestressed concrete bridges (Drs. C. Roberts, Wollmann, I. Koutromanos and M. Hebdon).
  - Testing of 1/3-scale three-span, two-way post-tensioned flat plates reinforced with steel fibers under gravity loads to determine the beneficial effects of the fibers on service level behavior and ultimate strength (Dr. C. Roberts-Wollmann).
  - Tested full-scale deteriorated steel bridge members, railroad bridge strength, repaired steel bridge members using CFRP, and inspection of bridges using Artificial Intelligence and drones (Dr. M. Hebdon).

- Lab operations run smoothly thanks to the efforts of B. Farmer, D. Huffman, and David Mokarem. D. Huffman retired this year after 35 years at the lab and was replaced by Garret Blankenship.

Other faculty highlights include:

- Dr. M. Eatherton helped host a workshop in San Francisco with leading west coast engineers to map out the future of seismic diaphragm design as part of the Steel Diaphragm Innovation Initiative (SDII).

- Rodrigo Sarlo’s research focuses on monitoring methods for infrastructure assessment and management. He currently is working on a VDOT-sponsored project, in collaboration with Matt Hebdon, on wireless displacement monitoring of ancillary highway structures subject to heavy winds.

- Dr. F. Charney authored an ASCE prestandard that presents a recommended alternative to the prescriptive procedures for wind design of buildings contained in the nationally adopted standard Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE 7) and in the International Building Code (IBC).

- ASCE recognized two SEM faculty members for their work as technical reviewers: Dr. Madeleine Flint was named the Natural Hazard Review’s Reviewer of the Year and Dr. Finley Charney was similarly recognized ASCE Journal of Structural Engineering Outstanding Reviewer in 2019.

- Dr. Jacques introduced a new course on Blast Analysis & Protective Design. This project-based class was supported by active industry members who shared their knowledge through in-person and telepresence guest lectures, as well as advising project groups, thus providing students the opportunity to work on real-world problems to industry and gain exposure to protective design processes commonly found in practice.
Our faculty are known for cutting-edge research analyzing how structures hold up during earthquakes, extreme loads, and other natural and man-made hazards. A new addition to CEE’s extensive research infrastructure will allow Assistant Professor Eric Jacques and his research group to test how structures will hold up to explosive blast loads. The Virginia Tech Shock Tube Testing Facility is located at the Thomas M. Murray Structures Laboratory and is equipped with a large-scale gas-detonation blast simulator and state-of-the-art high-speed data acquisition system and cameras. This unique facility, the only one of its kind at a university in the United States, The facility works by safely and economically producing high pressure blast waves that accurately simulate those generated by accidental industrial explosions and terrorist bombings. As much as 45 ft³ of oxy-acetylene gas can be detonated in the chamber which causes shock wave expansion in the transition sections, whose shape and transition are designed to ensure the shock wave planarity at the test section. The behavior of test specimens fixed to the end of the shock tube is monitored using high speed data acquisition equipment and high speed video cameras.

“The Shock Tube is intended to evaluate the resilience of structural and non-structural building components subjected to extreme blast loads,” said Jacques. “It not only supports cutting-edge research but also provides Virginia Tech graduates with hands-on experiential learning in blast protection to develop technical skills that are much needed by the protective design community.”

The overall goal is to use the data from the Shock Tube to develop structural engineering tools and technologies to better protect vulnerable infrastructures. This can have significant impacts on safeguarding the physical security and socio-economic well-being of the public against terrorist bombings and accidental industrial explosions.

Beyond his work using a Shock Tube, Jacques has also developed several blast analysis software tools. Prior to joining the Virginia Tech faculty, he was an Assistant Research Officer at that National Research Council of Canada, which is Canada’s premier research and technology organization.

Eric Jacques is working to protect people and infrastructure against explosions

Eric Jacques is working to protect people and infrastructure against explosions

Eric Jacques is working to protect people and infrastructure against explosions
This year was an active one for the Transportation Infrastructure and Systems Engineering (TISE) group.

- Dr. Montasir Abbas was promoted to full professor.
- Antonio Trani celebrated his thirtieth year of service on the faculty at Virginia Tech.
- Alex Brand joined the group as an assistant professor and had several achievements in his first year including being the keynote speaker for the 17th Euroseminar on Microscopy Applied to Building Materials and winning first place in the Microscopy Photo Contest at that conference.
- Susan Hotle’s student Stephanie Attallah received the Airport Cooperative Research Program Graduate Research Award on Public-Sector Aviation Issues.
- Kitty Hancock and the Center for Geospatial Information Technology received the 2019 Governor’s Transportation Safety Award for Innovation in Highway Safety.
- Gerardo Flintsch and his group had a very active year. Ross McCarthy (PhD student) and Esther Lizasoain Arteaga (visiting scholar, pursuing her PhD at University of Cantabria) received 2019 Executive Fellowships from the International Road Federation. Dr. Flintsch was appointed chair of the Committee TC 3.4 Asset Management of the World Road Association (PIARC) (Cycle 2020-23, representing AASHTO). He also delivered a Transportation Research Board Webinar, Comprehensive Pavement Assessments Using Continuous Deflection on May 30, 2019. Flintsch’s Center for Sustainable transportation Infrastructure (CSTI) partnered with VDOT to initiate and lead a 3 million dollar pooled fund that is supporting the implementation of traffic speed deflectometers (TSDDs) across the US. To facilitate the effective implementation of TSDDs and the incorporation of the TSDD data in pavement management decision-making, the research team is developing guidance on (1) data collection protocols, (2) data interpretation guidelines for network and project level applications, and (3) developing a framework to implement continuous deflection measurements as part of the agency’s pavement management system (PMS). Dr. Flintsch also partnered with VTRC to instrument and monitor a section on I-64 to quantify the response of recycled pavement sections subjected to known loadings and monitor the performance for one year. This will help to understand the behavior of the recycled materials and facilitate their use throughout the state. Hesham Rakha’s student Mohammed Almannaa won a scholarship to attend the 37th annual Lifesavers National Conference on Highway Safety Priorities in Louisville, KY.
- Dr. Rakha was also an active member of the National Science Foundation funded Research Trainee Program titled UrbComp, a program dedicated to enhancing urban computing.
- Linbing Wang served as the president of the Engineering Faculty Association for the 2018-2019 academic year.
- Bryan Katz continued to teach the Introduction to Civil Engineering course providing a great gateway for students entering CEE.
- Kevin Heaslip was awarded the G.V. Loganathan Award for Excellence in Civil Engineering Education and was named a CACI Faculty Fellow by the College of Engineering. Dr. Heaslip was also a Co-Principal Investigator on a $3,000,000 United States Department of Energy grant researching the cybersecurity of eXtremely Fast Charging (XFC) for electric vehicles.
The Via Scholarships are made possible through the generosity of the late Mrs. Marion Bradley Via of Roanoke, Virginia, and her family. In 1987, Mrs. Via contributed $5 million each to the Departments of Electrical and Computer Engineering and Civil and Environmental Engineering. Virginia Tech’s Board of Visitors subsequently named the ECE department in honor of Mrs. Via’s deceased father, Harry Lynde Bradley, and the CEE department in honor of her late husband, Charles E. Via, Jr. Mrs. Via died in 1993.

Both departments use a portion of the endowment to award scholarships to qualifying students. These scholarships are among the most competitive in the country. Since the Via endowment was created in 1987, the department has received more than $20 million in support.

We are proud to acknowledge that this is the 32nd year of the Via endowment and the Via Report. We want to take this opportunity to recognize the current Via scholars as well as alumni that have come through the program for the last 32 years and continue to fulfill the mission set by the Via family.
Steven Hall

_Hometown:_ St. Paul, Virginia  
**Career Goals:** I hope to pursue a Ph.D. relating to environmental modeling and simulation or work as an engineer for the Environmental Protection Agency. I believe I can make a meaningful difference with either choice.

Derek Lawrence

_Hometown:_ Annandale, Virginia  
**Career Goals:** After I graduate, I plan to pursue an M.S. in Structural Engineering at a German technical university. Eventually, I would love to work on large projects with an international civil engineering company, such as the next Burj Khalife or Shanghai Tower.

Carolyn Olmstead

_Hometown:_ Onancock, Virginia  
**Career Goals:** My civil focus is in structural engineering and construction. I plan on going into industry work after graduation and am interested in careers in mass transit or structural forensics.
Liz Smith

**Hometown:** Auburn, Alabama  
**Career Goals:** I am currently planning on pursuing an M.S. degree in geotechnical engineering.

---

Delaney Snead

**Hometown:** Forest, Virginia  
**Career Goals:** I want to get my PE license and pursue a career at either an engineering consulting firm or in research with the intention of maximizing water treatment techniques so they are more economically feasible to implement and more effective at filtering out and eliminating harmful bacteria.

---

Lucy Travers

**Hometown:** Roanoke, Virginia  
**Career Goals:** I want to acquire my PE and combine my passion for construction and design in a unique career path.
MASTERS

Stefany Baron

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Seven Fields, Pennsylvania
Location of Undergraduate Studies: Penn State University
Career Goals: I would like to work on the design and implementation of stormwater management systems to ensure that towns and cities are able to mitigate the pollutants that enter streams and rivers while also ensuring that there is sufficient flood protection.

Kayla Bauhs

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Middleton, Wisconsin
Location of Undergraduate Studies: University of Wisconsin-Madison
Career Goals: After completing my Master’s degree, I would like to work for a consulting engineering firm with a focus on water and wastewater projects. I also hope to obtain my PE license along the way.

Rachel Brodsky

STRUCTURAL ENGINEERING AND MATERIALS
Hometown: Norfolk, Virginia
Location of Undergraduate Studies: Virginia Tech
Career Goals: After completing my Master’s degree, my goal is to work in an engineering design firm as a structural engineer. I would like to obtain my PE license and work my way up to managing projects and other engineers.

Abby Burke

GEOTECHNICAL ENGINEERING
Hometown: Hardinsburg, Kentucky
Location of Undergraduate Studies: University of Kentucky
Career Goals: After earning my Master’s degree, I plan to work for a geotechnical consulting firm and obtain my PE license. Eventually, I may return to school for a Ph.D. and pursue a career in academics.
VIA SCHOLARS

MASTERS

Michael Calfe

ENVIRONMENTAL AND WATER RESOURCES

Hometown: Pittsburgh, Pennsylvania

Location of Undergraduate Studies: Clemson University

Career Goals: My career goals are to graduate with my Master’s degree and go to work professionally as a stream restoration designer.

Helen Chen

ENVIRONMENTAL AND WATER RESOURCES

Hometown: Fairfax, Virginia

Location of Undergraduate Studies: Virginia Tech

Career Goals: I plan to work in design and consulting to address hydrologic and hydraulic impacts of development, eventually obtaining my PE. I hope to continue to be inspired by new ideas.

Amanda Darling

ENVIRONMENTAL AND WATER RESOURCES

Hometown: Aurora, Illinois

Location of Undergraduate Studies: University of Illinois at Urbana-Champaign

Career Goals: After earning my master’s degree, I hope to pursue research opportunities applying technologies for sustainable development of water infrastructure, including systems for wastewater treatment and water supply.

John Gergel

STRUCTURAL ENGINEERING AND MATERIALS

Hometown: West Chester, Pennsylvania

Location of Undergraduate Studies: Penn State University

Career Goals: I plan to work for an engineering firm doing design and analysis of structures, including working on many exciting and innovative structural design projects. I also plan to earn my PE license.
Kyle Horsham

GEOTECHNICAL ENGINEERING
Hometown: Riner, Virginia
Location of Undergraduate Studies: Virginia Tech
Career Goals: I hope to earn my PE license and oversee construction of large highway and bridge projects.

Morgan Jenkins

STRUCTURAL ENGINEERING AND MATERIALS
Hometown: Knoxville, Tennessee
Location of Undergraduate Studies: University of Tennessee, Knoxville
Career Goals: I plan to complete my Master’s degree and then go into industry with a focus on sustainability in respect to structures or continue to pursue a Ph.D. I would like to take my experience from industry into academia as a professor after acquiring my PE license.

Alex Juliano

GEOTECHNICAL ENGINEERING
Hometown: Fallston, Maryland
Location of Undergraduate Studies: Merrimack College
Career Goals: After earning my masters degree, I hope to return to geotechnical consulting in Boston and have the opportunity to work on complex and unique projects, while working to achieve my PE.

Tanner Keene

CONSTRUCTION ENGINEERING AND MANAGEMENT
Hometown: Riner, Virginia
Location of Undergraduate Studies: Virginia Tech
Career Goals: I hope to earn my PE license and oversee construction of large highway and bridge projects.
Roger Knittle

GEOTECHNICAL ENGINEERING
Hometown: Ringtown, Pennsylvania
Location of Undergraduate Studies: Bucknell University
Career Goals: My career goal is to become a professional engineer and ultimately take on a management role in a firm or start my own company.

Pamela Kryschtal

TRANSPORTATION AND INFRASTRUCTURE SYSTEMS
Hometown: Falls Church, Virginia
Location of Undergraduate Studies: Virginia Tech
Career Goals: Undecided. Perhaps something in freight operations, but also interested in academia or consulting.

Christian Lytle

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Liberty Township, Ohio
Location of Undergraduate Studies: Case Western Reserve University
Career Goals: I plan on conducting research in academia or the private sector after completing my doctorate degree. My end goal is to teach and mentor the next generation of environmental engineers.

Justin Macmanus

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Harlingen, Texas
Location of Undergraduate Studies: Texas A&M University
Career Goals: I plan to work at a private consulting firm as a design engineer and project manager on water treatment and wastewater treatment projects. I hope to eventually work my way up to a management position in a large firm or start my own firm.
Eric Matynowski
ENVIROMENTAL AND WATER RESOURCES
Hometown: Clarkston, Michigan
Location of Undergraduate Studies: Michigan State University
Career Goals: Work in the water resources field with a focus in engineering and public policy.

Ryan Osborn
ENVIROMENTAL AND WATER RESOURCES
Hometown: Galesburg, Illinois
Location of Undergraduate Studies: University of Illinois at Urbana-Champaign
Career Goals: My career goal is to work as a water resources engineer for a company that focuses on stream and watershed restoration.

Casey Peloquin
GEOTECHNICAL ENGINEERING
Hometown: Gig Harbor, Washington
Location of Undergraduate Studies: United States Air Force Academy
Career Goals: My goal is to make the Air Force a career and serve my 20 years. I am currently a 1st Lt. as a civil engineer officer and I love my job.

Jenna Ritchie
GEOTECHNICAL ENGINEERING
Hometown: Manahawkin, New Jersey
Location of Undergraduate Studies: Virginia Tech
Career Goals: My goals are to become a professional engineer, lead a multidisciplinary team of engineers to solve slope stability issues before they become emergencies, and ensure quality control to the point where no liability work has to be done on implemented projects.
Ryan Stevens

**STRUCTURAL ENGINEERING AND MATERIALS**

*Hometown:* Signal Mountain, Tennessee  
*Location of Undergraduate Studies:* Virginia Tech  
*Career Goals:* After earning my Master’s degree, I would like to work in the structural steel industry, with either a fabricator or contractor. Eventually, I would like to work for an engineering firm designing buildings and other structures.

Joshua Trump

**CONSTRUCTION ENGINEERING AND MANAGEMENT**

*Hometown:* Manassas, Virginia  
*Location of Undergraduate Studies:* Virginia Tech  
*Career Goals:* My interests are split. I’m very interested in continuing research but I’m also considering my future in industry. I’m excited to see where this year takes me as I explore more of my research and experience academia.

Maria Amaya

**ENVIRONMENTAL AND WATER RESOURCES**

*Hometown:* Columbus, Ohio  
*Location of Undergraduate Studies:* The Ohio State University  
*Career Goals:* Become a PE and apply my knowledge in an international setting as part of my professional practice in water resources and environmental engineering.
Brooke Baugher

CONSTRUCTION ENGINEERING AND MANAGEMENT  
Hometown: Charlottesville, Virginia  
Location of Undergraduate Studies: Virginia Tech  
Career Goals: Once I finish my Ph.D., I want to work on international development projects and teach engineering students about international engineering practices. My goal is to help create a more effective system within engineering which benefits student learning and impacts communities around the world.

Matthew Blair

ENVIRONMENTAL AND WATER RESOURCES  
Hometown: Clear Spring, Maryland  
Location of Undergraduate Studies: Mississippi State University  
Career Goals: After graduation, I would like to continue my work with water reuse systems and ultimately work in both industry and academic settings.

Conrad Brendel

ENVIRONMENTAL AND WATER RESOURCES  
Hometown: Elizabethtown, Pennsylvania  
Location of Undergraduate Studies: Iowa State University  
Career Goals: I would like to be involved in teaching or public service related to water quality and quantity.

Nick Brilli

GEOTECHNICAL ENGINEERING  
Hometown: New Orleans, Louisiana  
Location of Undergraduate Studies: Virginia Tech  
Career Goals: Obtain an M.S. and Ph.D. in civil engineering and eventually make a career doing research in coastal engineering.
Meredith Bullard Martinez

ENVIRONMENTAL AND WATER RESOURCES

Hometown: Garner, North Carolina
Location of Undergraduate Studies: North Carolina State University
Career Goals: I want to be a consulting engineer and return to teach at a university. My ultimate goal is to teach, mentor, and inspire young engineers.

Emma Coleman

CONSTRUCTION ENGINEERING AND MANAGEMENT

Hometown: Columbia, South Carolina
Location of Undergraduate Studies: Clemson University
Career Goals: I study the impact of transportation mode on chronic disease. I would like to work for a government or consulting organization that prioritizes public health through the construction of sustainable cities and analysis of public data. For my dissertation, I am researching U.S. cities’ transportation network effects on bicycle commuting and connections to cardiovascular disease outcomes.

Abraham Cullom

ENVIRONMENTAL AND WATER RESOURCES

Hometown: Leawood, Kansas
Location of Undergraduate Studies: University of Pittsburgh
Career Goals: I want to pursue an academic career through teaching and researching environmental microbiology.

Steven Hoagland

ENVIRONMENTAL AND WATER RESOURCES

Hometown: Lexington, Kentucky
Location of Undergraduate Studies: University of Kentucky
Career Goals: I would like to perform research and help educate young engineers as a university faculty member.
DOCTORAL

James Hurley

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Durango, Colorado
Location of Undergraduate Studies: University of Colorado at Boulder
Career Goals: Research scientist or engineer focusing on air pollution and air quality

Rebecca Kriss

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Landenburg, Pennsylvania
Location of Undergraduate Studies: Johns Hopkins University
Career Goals: After earning my doctorate degree, I would like to pursue a career in research, potentially in academia or the public sector.

Michael Lee

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Seoul, Republic of Korea
Location of Undergraduate Studies: Hanyang University, Seoul, Republic of Korea
Career Goals: I would like to be a professional in the field of coastal engineering as a researcher and/or educator.

Krista Liguori

ENVIRONMENTAL AND WATER RESOURCES
Hometown: King of Prussia, Pennsylvania
Location of Undergraduate Studies: Penn State University
Career Goals: I hope to become a professor to continue working with motivated students and formulating original research with global impact.
DOCTORAL

Kathryn Lopez

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Miami, Florida
Location of Undergraduate Studies: Florida State University
Career Goals: I plan to become a professor to continue conducting research on aquatic contaminants and shape the learning experiences of young engineers. I also aim to become involved in environmental policy.

Seth Lotts

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Richmond, Virginia
Location of Undergraduate Studies: US Military Academy at West Point
Career Goals: My goal is to be a university professor and make a significant contribution in the field of environmental engineering.

Ayella Maile-Moskowitz

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Mount Rainier, Maryland
Location of Undergraduate Studies: University of Maryland, College Park
Career Goals: I plan on continuing my research in academia or in a national laboratory.

Ross McCarthy

TRANSPORTATION INFRASTRUCTURE AND SYSTEMS
Hometown: Corsicana, Texas
Location of Undergraduate Studies: Virginia Tech
Career Goals: Working for a government or private industry in managing infrastructure assets with a specific interest in the field of safety.
DOCTORAL

Erin Milligan

ENVIRONMENTAL AND WATER RESOURCES
Hometown: North Canton, Ohio
Location of Undergraduate Studies: Ohio University
Career Goals: A career in research studying the environmental microbiome and contaminant transport, especially in rural communities.

Julie Paprocki

GEOTECHNICAL ENGINEERING
Hometown: Mingo Junction, Ohio
Location of Undergraduate Studies: University of Cincinnati
Career Goals: Work for a geotechnical design company working on large-scale projects and obtain my professional engineering license. Outside of work, volunteer with Engineers Without Borders and serve on international projects.

Emily Parker

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Stockton, California
Location of Undergraduate Studies: University of California, Los Angeles
Career Goals: I hope to become an expert in urban water sustainability and help communities achieve more sustainable water practices through science/engineering, policy, and outreach.

Jeannie Purchase

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Ellenwood, Georgia
Location of Undergraduate Studies: Clemson University
Career Goals: My goal is to continue in the field of academia as a professor of civil engineering with an emphasis of water remediation strategies, citizen science, and communicating science. I hope to inspire the next generation of engineers through teaching, mentorship, and outreach.
Tyler Quick

GEOTECHNICAL ENGINEERING
Hometown: Lexington, Kentucky
Location of Undergraduate Studies: Brigham Young University
Career Goals: I plan on continuing in academia as a university professor. I would like to continue researching while teaching and mentoring future civil engineers.

Samuel Sherry

STRUCTURAL ENGINEERING AND MATERIALS
Hometown: Allentown, Pennsylvania
Location of Undergraduate Studies: University of Oklahoma
Career Goals: I would like to pursue a career in academia as a researcher. I hope to apply my knowledge to advance research in the field of structural engineering, as well as instill my passion for learning and knowledge in future engineers.

Storme Spencer

ENVIRONMENTAL AND WATER RESOURCES
Hometown: Columbia, South Carolina
Location of Undergraduate Studies: Clemson University
Career Goals: I plan to pursue a career working toward purifying and providing clean water supplies in developing countries.

Kristin Ulmer

GEOTECHNICAL ENGINEERING
Hometown: Corvallis, Oregon
Location of Undergraduate Studies: Brigham Young University
Career Goals: I plan to become a university professor so I can perform research in the field I love, as well as encourage students to become excellent civil engineers.
**Lucas Walshire**

**GEOTECHNICAL ENGINEERING**  
*Hometown:* Kalona, Iowa  
*Location of Undergraduate Studies:* University of Iowa  
*Career Goals:* Contribute to the US Army Corps of Engineers mission by providing technical support through practical and cost effective means.

---

**Kory Wait**

**ENVIRONMENTAL AND WATER RESOURCES**  
*Hometown:* Seymour, Indiana  
*Location of Undergraduate Studies:* Purdue University  
*Career Goals:* Continue my Ph.D. research investigating potential sources of groundwater contamination and specifically focusing on the effects of contamination on drinking water supplies from private wells.

---

**Kaleigh Yost**

**GEOTECHNICAL ENGINEERING**  
*Hometown:* Princeton, New Jersey  
*Location of Undergraduate Studies:* University of Notre Dame  
*Career Goals:* I plan on dedicating my career to furthering the understanding of earthquakes and reducing earthquake risk worldwide. I aspire to become a leader in the field of geotechnical earthquake engineering and plan to pursue a career in academia.

---

**VIA ALUMNI**

**VIA ALUMNI: WHERE ARE THEY NOW?**

To see a list of Via alumni through the years, visit our website at [https://www.cee.vt.edu/via-alumni-where-are-they-now/](https://www.cee.vt.edu/via-alumni-where-are-they-now/).

If you would like to update your information, contact Courtney Sakry at csakry@vt.edu or call the CEE main office at 540-231-0635.
The donors recognized on the following pages made a contribution to the Via Department of Civil and Environmental Engineering (CEE) during fiscal year 2016 (7/1/17-6/30/18). Although every effort has been made to ensure the accuracy of this report, we acknowledge that errors may have occurred. If your name has been omitted or listed incorrectly, please accept our sincere apologies and send any corrections to the CEE main office at (540) 231-6635.

### VIA DONORS

2018-2019

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Todd C. Barnes</td>
<td>1975</td>
</tr>
<tr>
<td>Sandra G. Bartley</td>
<td>1970</td>
</tr>
<tr>
<td>Bruce R. Bates</td>
<td>1979</td>
</tr>
<tr>
<td>Nathan M. Bath</td>
<td>2002</td>
</tr>
<tr>
<td>Gary C. Beach</td>
<td>1972</td>
</tr>
<tr>
<td>Courtney A. Beamon</td>
<td>1995</td>
</tr>
<tr>
<td>Kelly M. Beard-Tittone</td>
<td>1985</td>
</tr>
<tr>
<td>Phillip S. Beasley</td>
<td>1992</td>
</tr>
<tr>
<td>Jenifer C. Beausoliel</td>
<td>2014</td>
</tr>
<tr>
<td>Ronald L. Beck</td>
<td>1970</td>
</tr>
<tr>
<td>Alison J. Beisner</td>
<td>2019</td>
</tr>
<tr>
<td>Carl P. Benson</td>
<td>1986</td>
</tr>
<tr>
<td>Danelle M. Bernard</td>
<td>1985</td>
</tr>
<tr>
<td>Brian W. Bersch</td>
<td>1981</td>
</tr>
<tr>
<td>Michael N. Biscotte</td>
<td>1980</td>
</tr>
<tr>
<td>Cassidy B. Blackmore</td>
<td>2018</td>
</tr>
<tr>
<td>John W. Blackwell</td>
<td>1976</td>
</tr>
<tr>
<td>Randall W. Boe</td>
<td>1991</td>
</tr>
<tr>
<td>Charles P. Boepple</td>
<td>1979</td>
</tr>
<tr>
<td>Harold W. Bohannon</td>
<td>1968</td>
</tr>
<tr>
<td>Michelle E. Bolding</td>
<td>2005</td>
</tr>
<tr>
<td>Kyle T. Bollinger</td>
<td>2008</td>
</tr>
<tr>
<td>Taylor C. Bolte</td>
<td>2017</td>
</tr>
<tr>
<td>Mary Ann S. Bonadeo</td>
<td>1995</td>
</tr>
<tr>
<td>Steven R. Bonham</td>
<td>1973</td>
</tr>
<tr>
<td>Raymond A. Booth</td>
<td>1969</td>
</tr>
<tr>
<td>Anna Bosco</td>
<td>2018</td>
</tr>
<tr>
<td>Doran J. Bosso</td>
<td>2006</td>
</tr>
<tr>
<td>H.B. Bowles</td>
<td>1985</td>
</tr>
<tr>
<td>Gary P. Bowman</td>
<td>1980</td>
</tr>
<tr>
<td>Austin A. Bradley</td>
<td>1983</td>
</tr>
<tr>
<td>Jerry D. Brammer</td>
<td>1968</td>
</tr>
<tr>
<td>Anita W. Branch</td>
<td>1994</td>
</tr>
<tr>
<td>Theodore D. Britt</td>
<td>1985</td>
</tr>
<tr>
<td>William F. Brittle</td>
<td>1969</td>
</tr>
<tr>
<td>Thomas W. Brockenbrough</td>
<td>1942</td>
</tr>
<tr>
<td>Roger L. Brockenbrough</td>
<td>1954</td>
</tr>
<tr>
<td>Thomas A. Broderick</td>
<td>1986</td>
</tr>
<tr>
<td>Diana E. Brown</td>
<td>2010</td>
</tr>
<tr>
<td>Robert W. Brown</td>
<td>2000</td>
</tr>
<tr>
<td>Michael C. Brown</td>
<td>1991</td>
</tr>
<tr>
<td>Craig S. Bryant</td>
<td>1971</td>
</tr>
<tr>
<td>Cameron L. Bryant</td>
<td>1991</td>
</tr>
<tr>
<td>Steven B. Buchanan</td>
<td>1980</td>
</tr>
<tr>
<td>Brett A. Buckland</td>
<td>2012</td>
</tr>
<tr>
<td>Margaret M. Buckley</td>
<td>1994</td>
</tr>
<tr>
<td>John Burchinal</td>
<td>1975</td>
</tr>
<tr>
<td>David M. Burk</td>
<td>1974</td>
</tr>
<tr>
<td>Douglas W. Burks</td>
<td>1979</td>
</tr>
<tr>
<td>Sarah E. Busch</td>
<td>2018</td>
</tr>
<tr>
<td>Allen W. Caddens</td>
<td>1986</td>
</tr>
<tr>
<td>G.S. Cameron</td>
<td>1979</td>
</tr>
<tr>
<td>Herbert D. Campbell</td>
<td>1969</td>
</tr>
<tr>
<td>Jennifer M. Canfield</td>
<td>1996</td>
</tr>
<tr>
<td>Steven T. Capito</td>
<td>1995</td>
</tr>
<tr>
<td>Thomas M. Cardman</td>
<td>2011</td>
</tr>
<tr>
<td>Valerie L. Carpenter-Ho</td>
<td>1999</td>
</tr>
<tr>
<td>Michael C. Carper</td>
<td>1993</td>
</tr>
<tr>
<td>R.D. Carson</td>
<td>1971</td>
</tr>
<tr>
<td>James N. Carter</td>
<td>1975</td>
</tr>
<tr>
<td>Bernardo A. Castellanos</td>
<td>2014</td>
</tr>
<tr>
<td>Kelly A. Cave</td>
<td>1984</td>
</tr>
<tr>
<td>Jung-Yeon S. Chang</td>
<td>1988</td>
</tr>
<tr>
<td>Young H. Chang</td>
<td>1987</td>
</tr>
<tr>
<td>Edward Chang</td>
<td>2012</td>
</tr>
<tr>
<td>Xiaojun Chang</td>
<td>2011</td>
</tr>
<tr>
<td>Erin K. Chapman</td>
<td>2019</td>
</tr>
<tr>
<td>Craig A. Cheney</td>
<td>2004</td>
</tr>
<tr>
<td>R. Bradley Chewning</td>
<td>1964</td>
</tr>
<tr>
<td>Trenton M. Clark</td>
<td>1993</td>
</tr>
</tbody>
</table>

### CEE ALUMNI

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lisa M. Alvey</td>
<td>1976</td>
</tr>
<tr>
<td>Ross D. Amico</td>
<td>2002</td>
</tr>
<tr>
<td>William and Nancy Aden</td>
<td>1967</td>
</tr>
<tr>
<td>S. K. Anderson</td>
<td>1962</td>
</tr>
<tr>
<td>Anargyros A. Anton</td>
<td>2006</td>
</tr>
<tr>
<td>Nikolaos Apsilidis</td>
<td>2013</td>
</tr>
<tr>
<td>Joseph D. Arrowsmith</td>
<td>2009</td>
</tr>
<tr>
<td>William T. Austin</td>
<td>1983</td>
</tr>
<tr>
<td>Erol J. Aydar</td>
<td>1990</td>
</tr>
<tr>
<td>Hwangbo Bae</td>
<td>2017</td>
</tr>
<tr>
<td>Jaye C. Baesler</td>
<td>1978</td>
</tr>
<tr>
<td>Walter F. Bailey</td>
<td>1972</td>
</tr>
<tr>
<td>Robin E. Bain</td>
<td>1980</td>
</tr>
<tr>
<td>Kelso S. Baker</td>
<td>1951</td>
</tr>
<tr>
<td>Donald J. Balzer</td>
<td>1977</td>
</tr>
<tr>
<td>Brendan Bambrick</td>
<td>1993</td>
</tr>
<tr>
<td>Tim Banta</td>
<td>1978</td>
</tr>
<tr>
<td>Jessica M. Barbier</td>
<td>1990</td>
</tr>
<tr>
<td>Brian Barger</td>
<td>2005</td>
</tr>
</tbody>
</table>
2018–2019

Harry G. Cooke.............................2000  David C. Dunbeck.......................1979  Kyle E. Goode................................69
Marvin R. Craig.............................1959  Billy L. Edge...............................1964  Thomas B. Gray............................1973
Mark D. Crean...............................2013  Anne M. Ellis..............................1980  Linda D. Griffin.........................1977
Raymond G. and Madelyn Curry ...1954  Samuel J. Ferrara.......................2015  Kedar R. Halbe.............................2010
Jessica L. DeCelie..........................2019  Brendan T. FitzPatrick...............2001  Timothy P. Harpst.......................1975
2018–2019

Larry G. Hedgepeth .......................... 1976
Buford B. Heller .......................... 1975
Gregory M. Hensley .......................... 2004
Pablo A. Hernandez .......................... 1989
Michael C. Hewitt .......................... 1974
Eric T. Hirschmann .......................... 2015
Hunter T. Hodges .......................... 2006
Thomas J. Holland .......................... 1996
Michele M. Holland .......................... 1999
Alex B. Holleman .......................... 2009
Don W. Holloway .......................... 1957
Daniel B. Horne .......................... 1973
Edward G. Horstkamp .......................... 1986
Charles S. Hughes .......................... 1958
Kimberly C. Hughes .......................... 1985
Jeffrey M. Hugney .......................... 1988
Thomas N. Hunnicutt .......................... 1959
Matthew C. Hurst .......................... 1997
Larry W. Ingalls .......................... 1966
Matthew C. Jackson .......................... 1993
Nonish Jain .......................... 2015
Robert F. Jansen .......................... 1980
Benjamin C. Jarosz .......................... 1999
Jimmie D. Jenkins .......................... 1970
James T. Johnson .......................... 1978
Paul B. Johnson .......................... 1974
Elizabeth V. Jones .......................... 2014
James R. Jones .......................... 1970
John H. Jones .......................... 1973
Meredith T. Jones .......................... 1994
Malcolm F. Jones .......................... 1953
Paul A. Jordan .......................... 1980
Williams A. Joyner .......................... 1966
William E. Junda .......................... 2000
Govindan Kannan .......................... 1999
Bryan J. Katz .......................... 2000
James P. Keating .......................... 2018
Howard L. Keller .......................... 1970
Christine S. Kelly .......................... 1984
Nina R. Kempic .......................... 2018
Jason F. Kennedy .......................... 2008
Charles Kilpatrick .......................... 1986
Ryan P. Kincer .......................... 2008
Clifford G. King .......................... 1984
Herbert G. Kipp .......................... 1968
Vernon D. Kirby .......................... 1988
John W. Koenig .......................... 1991
Kenneth J. Kohut .......................... 1971
Evangelos Kountozoglou .......................... 2015
Akshay M. Krishnan .......................... 2016
Kevin D. Kumordzie .......................... 2019
Jeffrey Kuttesch .......................... 2003
Kevin T. Laptops .......................... 1988
Kara E. Lattimer .......................... 2002
William F. LaVecchia .......................... 1952
Steven R. Lavinder .......................... 1985
Peter T. Lazarevich .......................... 2006
James L. Leeth .......................... 1974
Danielle V. Lehman .......................... 2019
Benny E. Lenox .......................... 1979
Thomas F. Lester .......................... 1975
Jerry C. Lester .......................... 1975
Milton J. Lewis .......................... 1981
Zhuncheng Li .......................... 2016
Jeffrey N. Lighthiser .......................... 1977
Hai Lin .......................... 2015
Charles R. Linamen .......................... 1971
Alan T. Lingerfelt .......................... 1976
Jon O. Loker .......................... 1958
Stephen R. Long .......................... 1983
James F. Loudon .......................... 1961
James K. Lowe .......................... 1978
Daniel P. Lynch .......................... 1989
Mercer R. MacPherson .......................... 1963
Sanjeev R. Malushte .......................... 1984
Peter Manning .......................... 1981
Jose A. Marcano .......................... 2002
Burton M. Marshall .......................... 1962
Ray E. Martin .......................... 1964
Donald L. Martin .......................... 1974
Michael R. Martin .......................... 1974
John K. Marut .......................... 1969
Darryl E. Mayton .......................... 1978
William C. McAllister .......................... 1965
Avery McClellan .......................... 1968
R.J. McCracken .......................... 1973
David I. McCready .......................... 1973
Brian K. McDermott .......................... 2019
Jay T. McGinnis .......................... 1997
Jeffrey A. McInnis .......................... 1996
Garland H. McKenzie .......................... 1981
Michael W. McLaughlin .......................... 1976
Nathan D. McWhirter .......................... 2017
David F. Meadows .......................... 1987
Ronald L. Meng .......................... 1996
Babur Mian .......................... 1992
Ronald L. Miller .......................... 1974
Ann B. Miller .......................... 1984
Robert J. Miller .......................... 1994
Robert S. Miller .......................... 1967
Barry S. Milstone .......................... 1985
Richard O. Mines .......................... 1983
Alvin S. Mistr .......................... 1969
Sarah O. Mitchell .......................... 2019
Jeremy M. Mocny .......................... 1997
### VIA DONORS

#### 2018-2019

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>David W. Mokarem</td>
<td>1996</td>
</tr>
<tr>
<td>Michael C. Moon</td>
<td>1984</td>
</tr>
<tr>
<td>Steven T. Moore</td>
<td>1982</td>
</tr>
<tr>
<td>Anthony J. Moraco</td>
<td>1982</td>
</tr>
<tr>
<td>Herbert W. Morgan</td>
<td>1975</td>
</tr>
<tr>
<td>Joe M. Morgan</td>
<td>1968</td>
</tr>
<tr>
<td>Laura M. Morillo</td>
<td>1984</td>
</tr>
<tr>
<td>David C. Morris</td>
<td>1990</td>
</tr>
<tr>
<td>Michelle E. Motchos</td>
<td>1996</td>
</tr>
<tr>
<td>Michael P. Mozingo</td>
<td>1965</td>
</tr>
<tr>
<td>Aaron J. Muck</td>
<td>1998</td>
</tr>
<tr>
<td>Michael P. Muron</td>
<td>1984</td>
</tr>
<tr>
<td>Gary M. Murphy</td>
<td>1986</td>
</tr>
<tr>
<td>Kenneth H. Murray</td>
<td>1965</td>
</tr>
<tr>
<td>Kevin E. Murray</td>
<td>1983</td>
</tr>
<tr>
<td>David R. Myzie</td>
<td>1986</td>
</tr>
<tr>
<td>Soonkie Nam</td>
<td>2005</td>
</tr>
<tr>
<td>Charles D. Newhouse</td>
<td>1992</td>
</tr>
<tr>
<td>Alex J. Nice</td>
<td>1993</td>
</tr>
<tr>
<td>Albert L. Nichols</td>
<td>1963</td>
</tr>
<tr>
<td>James M. Nichols</td>
<td>1943</td>
</tr>
<tr>
<td>Paul R. Nichols</td>
<td>1975</td>
</tr>
<tr>
<td>Christopher L. Nolan</td>
<td>2016</td>
</tr>
<tr>
<td>Robert S. Notte</td>
<td>1997</td>
</tr>
<tr>
<td>Michelle K. Nye</td>
<td>2012</td>
</tr>
<tr>
<td>Raymond J. O’Donnell</td>
<td>1980</td>
</tr>
<tr>
<td>Max A. O’Krepki</td>
<td>2016</td>
</tr>
<tr>
<td>David J. Oshinski</td>
<td>1981</td>
</tr>
<tr>
<td>Daniel W. Osmun</td>
<td>1988</td>
</tr>
<tr>
<td>Zachary T. Pace</td>
<td>2008</td>
</tr>
<tr>
<td>Ethan M. Pacifico</td>
<td>2017</td>
</tr>
<tr>
<td>George T. Paris</td>
<td>1975</td>
</tr>
<tr>
<td>James E. Parkes</td>
<td>1998</td>
</tr>
<tr>
<td>Jeffrey L. Parks</td>
<td>2005</td>
</tr>
<tr>
<td>Benjamin C. Parrish</td>
<td>2012</td>
</tr>
<tr>
<td>Maysill G. Pascal</td>
<td>2003</td>
</tr>
<tr>
<td>James W. Patteson</td>
<td>1984</td>
</tr>
<tr>
<td>Gerald W. Peaks</td>
<td>1969</td>
</tr>
<tr>
<td>Michael R. Perschbacher</td>
<td>1994</td>
</tr>
<tr>
<td>Melinda H. Peters</td>
<td>1995</td>
</tr>
<tr>
<td>Kelly L. Pettersen</td>
<td>2014</td>
</tr>
<tr>
<td>Ann E. Piazza</td>
<td>1981</td>
</tr>
<tr>
<td>Michael C. Peitrzyk</td>
<td>1976</td>
</tr>
<tr>
<td>Matthew C. Pillow</td>
<td>2009</td>
</tr>
<tr>
<td>Katherine G. Plasket</td>
<td>1987</td>
</tr>
<tr>
<td>Warren E. Poarch</td>
<td>1965</td>
</tr>
<tr>
<td>Elizabeth S. Podbelski</td>
<td>1979</td>
</tr>
<tr>
<td>Sean N. Poling</td>
<td>2019</td>
</tr>
<tr>
<td>Carmine Polito</td>
<td>1989</td>
</tr>
<tr>
<td>Jessie Ponce de Leon</td>
<td>2008</td>
</tr>
<tr>
<td>John M. Potter</td>
<td>1975</td>
</tr>
<tr>
<td>Don M. Powell</td>
<td>1977</td>
</tr>
<tr>
<td>David B. Powers</td>
<td>2000</td>
</tr>
<tr>
<td>Danielle D. Poyant</td>
<td>2003</td>
</tr>
<tr>
<td>John P. Ruth</td>
<td>1969</td>
</tr>
<tr>
<td>Robert A. Proffitt</td>
<td>1984</td>
</tr>
<tr>
<td>John E. Pruitt</td>
<td>1964</td>
</tr>
<tr>
<td>Archie D. Pugh</td>
<td>1991</td>
</tr>
<tr>
<td>Michael J. Quillen</td>
<td>1970</td>
</tr>
<tr>
<td>Robert R. Radspinner</td>
<td>2007</td>
</tr>
<tr>
<td>Michael D. Ramsey</td>
<td>1979</td>
</tr>
<tr>
<td>Walter J. Rawls</td>
<td>1966</td>
</tr>
<tr>
<td>Michael A. Rayl</td>
<td>2006</td>
</tr>
<tr>
<td>Harold M. Raynor</td>
<td>1962</td>
</tr>
<tr>
<td>Glenn W. Rehberger</td>
<td>1969</td>
</tr>
<tr>
<td>Stephen J. Render</td>
<td>1992</td>
</tr>
<tr>
<td>Jeffrey W. Reynolds</td>
<td>1982</td>
</tr>
<tr>
<td>Allen W. Reynolds</td>
<td>1962</td>
</tr>
<tr>
<td>James B. Richards</td>
<td>1969</td>
</tr>
<tr>
<td>Richard E. Richman</td>
<td>1966</td>
</tr>
<tr>
<td>Joseph B. Riding</td>
<td>1979</td>
</tr>
<tr>
<td>Joseph P. Riley-Ryan</td>
<td>2013/1975</td>
</tr>
<tr>
<td>Jack E. Rinker</td>
<td>1960</td>
</tr>
<tr>
<td>Randolph P. Rivinus</td>
<td>1968</td>
</tr>
<tr>
<td>Robert M. Roberts</td>
<td>1975</td>
</tr>
<tr>
<td>Joseph A. Robinson</td>
<td>1960</td>
</tr>
<tr>
<td>Geoffrey A. Robinson</td>
<td>1972</td>
</tr>
<tr>
<td>Kip M. Robinson</td>
<td>1968</td>
</tr>
<tr>
<td>James W. Ronner</td>
<td>1975</td>
</tr>
<tr>
<td>Erin A. Rooney</td>
<td>2009</td>
</tr>
<tr>
<td>John M. Rosenquest</td>
<td>1979</td>
</tr>
<tr>
<td>Joshua T. Rosenthal</td>
<td>2016</td>
</tr>
<tr>
<td>Brian M. Ross</td>
<td>1995</td>
</tr>
<tr>
<td>David Rothenberg</td>
<td>1978</td>
</tr>
<tr>
<td>Richard A. Ruckman</td>
<td>1981</td>
</tr>
<tr>
<td>Jacob H. Rudisill</td>
<td>2019</td>
</tr>
<tr>
<td>Heather L. Rugnetta</td>
<td>2003</td>
</tr>
<tr>
<td>Charles E. Runyong</td>
<td>1961</td>
</tr>
<tr>
<td>Thomas D. Rust</td>
<td>1965</td>
</tr>
<tr>
<td>John W. Ryan</td>
<td>1956</td>
</tr>
<tr>
<td>Amit Sachan</td>
<td>2003</td>
</tr>
<tr>
<td>Dallas W. Safrietch</td>
<td>1967</td>
</tr>
<tr>
<td>Alexander J. Sarant</td>
<td>2014</td>
</tr>
<tr>
<td>Vernon R. Schaefer</td>
<td>1987</td>
</tr>
<tr>
<td>Kent W. Schellingier</td>
<td>1980</td>
</tr>
<tr>
<td>Rebecca M. Schneider</td>
<td>2007</td>
</tr>
<tr>
<td>Richard J. Seabrook</td>
<td>1984</td>
</tr>
<tr>
<td>Stephen M. Seay</td>
<td>1986</td>
</tr>
<tr>
<td>Rachel M. Sellaro</td>
<td>2014</td>
</tr>
<tr>
<td>Patrick N. Shaffner</td>
<td>1961</td>
</tr>
</tbody>
</table>
### VIA DONORS

#### 2018-2019

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edward J. Shea</td>
<td>1997</td>
</tr>
<tr>
<td>James E. Sherring</td>
<td>1985</td>
</tr>
<tr>
<td>Cliff C. Shieh</td>
<td>1980</td>
</tr>
<tr>
<td>Michelle A. Shropshire</td>
<td>1995</td>
</tr>
<tr>
<td>Michael T. Siburt</td>
<td>2003</td>
</tr>
<tr>
<td>Berry A. Simmerman</td>
<td>1985</td>
</tr>
<tr>
<td>Larry M. Simmons</td>
<td>1970</td>
</tr>
<tr>
<td>Jefferson K. Sinclair</td>
<td>1975</td>
</tr>
<tr>
<td>William M. Skeen</td>
<td>1972</td>
</tr>
<tr>
<td>Aaron B. Small</td>
<td>1991</td>
</tr>
<tr>
<td>Lester A. Smeal</td>
<td>1977</td>
</tr>
<tr>
<td>Christopher S. Smith</td>
<td>1993</td>
</tr>
<tr>
<td>Daniel R. Smith</td>
<td>1979</td>
</tr>
<tr>
<td>Elizabeth F. Smith</td>
<td>1986</td>
</tr>
<tr>
<td>Mark S. Smith</td>
<td>1998</td>
</tr>
<tr>
<td>Paul J. Smith</td>
<td>1988</td>
</tr>
<tr>
<td>Richard B. Snoddy</td>
<td>1990</td>
</tr>
<tr>
<td>David M. Soares</td>
<td>2009</td>
</tr>
<tr>
<td>Arnold E. Somers</td>
<td>1974</td>
</tr>
<tr>
<td>Dewey D. Spangler</td>
<td>1987</td>
</tr>
<tr>
<td>William W. Spears</td>
<td>2018</td>
</tr>
<tr>
<td>Guy R. Sproles</td>
<td>1971</td>
</tr>
<tr>
<td>Sarah B. Stedfast</td>
<td>1983</td>
</tr>
<tr>
<td>Bryan W. Stevenson</td>
<td>1996</td>
</tr>
<tr>
<td>Jack H. Stewart</td>
<td>1957</td>
</tr>
<tr>
<td>William Stewart</td>
<td>2007</td>
</tr>
<tr>
<td>Frank D. Stidham</td>
<td>1965</td>
</tr>
<tr>
<td>Harvey E. Strawinsky</td>
<td>1970</td>
</tr>
<tr>
<td>Lester I. Sutphin</td>
<td>1977</td>
</tr>
<tr>
<td>Todd W. Swanson</td>
<td>1974</td>
</tr>
<tr>
<td>Joseph B. Swanson</td>
<td>1998</td>
</tr>
<tr>
<td>Richad D. Swartout</td>
<td>1969</td>
</tr>
<tr>
<td>Andrew C. Swenck</td>
<td>2007</td>
</tr>
<tr>
<td>Matthew K. Swenti</td>
<td>2009</td>
</tr>
<tr>
<td>John W. Sykes</td>
<td>1959</td>
</tr>
<tr>
<td>Jianhua Tang</td>
<td>1997</td>
</tr>
<tr>
<td>Boris O. Taran</td>
<td>1970</td>
</tr>
<tr>
<td>Henry J. Theiss</td>
<td>1994</td>
</tr>
<tr>
<td>William R. Thomas</td>
<td>1994</td>
</tr>
<tr>
<td>Dominic M. Tiburzi</td>
<td>1975</td>
</tr>
<tr>
<td>John A. Tice</td>
<td>1966</td>
</tr>
<tr>
<td>Samuel C. Tignor</td>
<td>1958</td>
</tr>
<tr>
<td>Robert W. Timberlake</td>
<td>1969</td>
</tr>
<tr>
<td>Curtis J. Tompkins</td>
<td>1964</td>
</tr>
<tr>
<td>John S. Torell</td>
<td>1993</td>
</tr>
<tr>
<td>Dennis D. Truax</td>
<td>1976</td>
</tr>
<tr>
<td>William I. Truitt</td>
<td>1972</td>
</tr>
<tr>
<td>Steven J. Tschetter</td>
<td>1992</td>
</tr>
<tr>
<td>Kwong T. Tse</td>
<td>1978</td>
</tr>
<tr>
<td>Elizabeth A. Turner</td>
<td>1972</td>
</tr>
<tr>
<td>Frederick J. Turner</td>
<td>1959</td>
</tr>
<tr>
<td>Colette T. Turner</td>
<td>1980</td>
</tr>
<tr>
<td>Terry J. Tyler</td>
<td>1985</td>
</tr>
<tr>
<td>Kristin J. Ulmer</td>
<td>2019</td>
</tr>
<tr>
<td>Sneha Upadhyaya</td>
<td>2018</td>
</tr>
<tr>
<td>Eileen A. Van Aken</td>
<td>1988</td>
</tr>
<tr>
<td>Natasha O. Vance</td>
<td>1994</td>
</tr>
<tr>
<td>Ronald G. Vann</td>
<td>1965</td>
</tr>
<tr>
<td>Steve M. Varner</td>
<td>1987</td>
</tr>
<tr>
<td>Leo A. Vecellio</td>
<td>1968</td>
</tr>
<tr>
<td>Javier I. Vega</td>
<td>1988</td>
</tr>
<tr>
<td>Anthony R. Verdi</td>
<td>2004</td>
</tr>
<tr>
<td>Daniel M. Vickstrom</td>
<td>1980</td>
</tr>
<tr>
<td>James H. Viox</td>
<td>1965</td>
</tr>
<tr>
<td>Susan Z. Wadsworth</td>
<td>1985</td>
</tr>
<tr>
<td>Samuel S. Waldo</td>
<td>1975</td>
</tr>
<tr>
<td>Scott R. Walker</td>
<td>1961</td>
</tr>
<tr>
<td>Thomas B. Washington</td>
<td>1953</td>
</tr>
<tr>
<td>John C. Watkins</td>
<td>1969</td>
</tr>
<tr>
<td>Christopher C. Weaver</td>
<td>2005</td>
</tr>
<tr>
<td>A.S. Weber</td>
<td>1977</td>
</tr>
<tr>
<td>Edward C. Westerman</td>
<td>1993</td>
</tr>
<tr>
<td>Kristin M. Westover</td>
<td>2008</td>
</tr>
<tr>
<td>Brian L. Wheeler</td>
<td>1971</td>
</tr>
<tr>
<td>Claire M. White</td>
<td>2010</td>
</tr>
<tr>
<td>Paul N. Whitener</td>
<td>1982</td>
</tr>
<tr>
<td>John L. Whitney</td>
<td>1966</td>
</tr>
<tr>
<td>David C. Wiebe</td>
<td>1978</td>
</tr>
<tr>
<td>Gregory S. Williamson</td>
<td>2003</td>
</tr>
<tr>
<td>William C. Wilson</td>
<td>1971</td>
</tr>
<tr>
<td>Philip L. Winters</td>
<td>1978</td>
</tr>
<tr>
<td>Kord J. Wissmann</td>
<td>1987</td>
</tr>
<tr>
<td>Daniel J. Woeste</td>
<td>2013</td>
</tr>
<tr>
<td>Farley E. Wolford</td>
<td>1958</td>
</tr>
<tr>
<td>Christopher D. Woodling</td>
<td>1999</td>
</tr>
<tr>
<td>Nicholas W. Woolery</td>
<td>2017</td>
</tr>
<tr>
<td>Marilyn E. Worley</td>
<td>2005</td>
</tr>
<tr>
<td>William E. Worrall</td>
<td>2005</td>
</tr>
<tr>
<td>James M. Wright</td>
<td>1960</td>
</tr>
<tr>
<td>Chenxi Xing</td>
<td>2014</td>
</tr>
<tr>
<td>Kevin D. Young</td>
<td>2000</td>
</tr>
<tr>
<td>Nicholas R. Young</td>
<td>2008</td>
</tr>
<tr>
<td>Shiqiang Zou</td>
<td>2017</td>
</tr>
<tr>
<td>Matthew W. Zurad</td>
<td>1993</td>
</tr>
<tr>
<td>Dennis L. Zurakowski</td>
<td>1977</td>
</tr>
<tr>
<td>Michael T. Zuravel</td>
<td>1984</td>
</tr>
</tbody>
</table>

### FRIENDS

- Robert G. Anderson
- Sandra Bolton
- Rudolph Bonaparte
- Terry Sue Bowman
2018-2019

Janet Broaddus
Daniel N. Capozzoli
Charles R. Carder
Avril G. Catlett
Kimberly H. Chappell
Sandy Collins-Camargo
Amy Davis
Thomas R. Devine
Carolyn G. Dietrich
Stefan M. Duma
Randel L. Dymond
James E. Dyson
Sam and Pam Easterling
Kathy E. Erat
Seifeldeen Eteifa
Brett N. Farmer
Gerardo W. Flintsch
Nancy B. Forbes
Mary L. Gaffney
Justine Galant
Jane M. Garland
John D. Garner
Stanley Grant
Vikas Gurram
Zhen He
Robert C. Hoehn
Curtis S. Jones
Lisa M. Karl
Christopher B. Keyser
William R. Knocke
Marilyn Lapidus
Roberto T. Leon
Gregory P. Levine
Shuang Li
Elden Lu
Michael Lubeley
Elizabeth A. Lucas
Linda Lunsford
Philip C. Lynch
Frank Manolios
Edythe Manza
Martha D. Marks
Sarah H. Martin
Deborah N. Mattern
Jeffrey R. Metzger
Cyan Miller
April Miller
Wallace Miller
Stephanie E. Nagy-Agren
Navid Nematikourabbasloo
Francis J. O’Connor
Robin B. Patteson
Jonathan Porter
Harold E. Post
Jacquelyne V. Prince
Amy J. Pruden-Bagchi
Steven J. Rinella
Megan A. Rippy
Adrian Rodriguez-Marek
Russell S. Rosenberger
David G. Sawitzki
Cathryn T. Schenk
Christy L. Sciscoce
Sharren M. Sears
Suzanne C. Snow
Robert S. Starego
Nina Stark
Shirley H. Steele
Frederick W. Stephenson
Barrett Terrell
Janet S. Thomas
Lauren Thomas
Tat Shing Thum
Charles A. Tysinger
Peter Vikesland
Mark A. Widdowson
Mary L. Wiebke
Tom Wilkins
Christina Wingenfield
Susan Wolford
Elizabeth R. Wynne
Philip G. Yates
Abla Yerro Colom

BUSINESSES

Alliance Engineering, Inc.
American Institute of Steel Construction
Architectural Wall Systems, Inc.
Bohler Engineering VA, LLC
Burns Cooley Dennis, Inc.
City of Roanoke, Office of City Clerk
Cives Steel Corporation Mid-Atlantic Coalition of Michigan Faculty
ECS Mid-Atlantic, LLC
Facotyr Direct Wholesale, LLC
Fluor Enterprises, Inc.
Futurelaw, LLC
Golder Associates, Ltd
Gordon
Guy M. Gravett Rev. Inter. Vivos. Trust
Hazen & Sawyer, P.C.
HOK Group, Inc.
Jordan Design-Build Group
Langan Engineering and Environmental Services
Lyndon Steel Company
Mattern and Craig, Inc.
2018-2019

SILVER SPONSORS
- Coleman Engineering
- Eden & Associates
- Mattern & Craig
- Ramey Kemp & Associates
- Wetland Studies

MUNICIPAL SPONSOR
- City of Alexandria
- Fairfax County

(SWIM) AFFILIATES PROGRAM
- Applied Felts
- Arcadis
- Echologics, a Division of Mueller Co.
- Reline America, Inc.
- Aurora Water, Colorado
- Town of Blacksburg, Virginia
- Denver Water, Colorado
- City of Lynchburg, Virginia
- CH2M Hill
- EMA
- GHD
- Uni-Bell PVC Pipe Association
- American Concrete Pressure Pipe Association
- Black and Veatch
- Dewberry
- PICA
- Structural Technologies

LAND DEVELOPMENT DESIGN INITIATIVE

DIAMOND SPONSORS
- Advanced Drainage Systems
- Bohler Engineering
- Bowman Consulting Group, Ltd
- Concrete Pipe & Precast
- Pennoni Associates, Inc.

PLATINUM SPONSORS
- AES Consulting Engineers
- ATCS, P.L.C.
- Christopher Consultants, Ltd.

GOLD SPONSORS
- Accumark Subsurface Utility Services
- Balzer & Associates
- Brookfield Homes
- Burgess & Niple, Inc.
- Cowen Design Group, LLC
- Delta Airport Consultants
- ESP Associates
- Gay and Neel, Inc.
- Hurt & Proffitt
- Land Design Consultants
- Lumsden Associates
- McKim & Creed
- Mid Atlantic Utility Locating
- Rinker Design Associates
- Walter L. Phillips
- Whitman, Requardt & Associates, LLP
- William A. Hazel, Inc.
- Van Metre Homes
- VHB
- Youngblood, Tyler & Associates, P.C.

42 • 2019 VIA REPORT
GEOTECHNICAL PRACTICE AND RESEARCH (CGPR)

- AECOM
- Anita W. Branch
- Ardaman & Associates
- BLE (Bunnell-Lammons Engineering Inc.)
- Condon-Johnson
- ConeTec
- Engineering Consulting Services, LLC
- Exxon Mobile Foundation
- Brendan T. FitzPatrick
- Froehling and Robertson
- Gannett Fleming
- GEI Consultants
- Geopier Foundations
- GeoSyntec Consultants
- Hayward Baker - A Keller Company
- HDR
- Benjamin C. Jarosz
- Kiewit Constructors, Inc.
- Langan Engineering and Environmental Services, Inc.
- Menard Engineering
- Naval Facilities Engineering Command
- Nicholson Construction
- S&ME
- Schnabel Engineering, Inc.
- Schnabel Foundation Company
- Terracon Consultants, Inc.
- TREVIICOS Corporation
- US Army Corps of Engineers
- US Bureau of Reclamation
- Virginia Department of Transportation

DUNCAN GRADUATE STUDENT ENDOWMENT

- Carl P. Benson
- Dennis Cooley Burns
- Ray E. Martin
- Nina Stark
- Bernardo A. Castellanos
- Russell A. Green
- Alba Yerro Colom
- Adrian Rodriguez-Marek
- Daniel W. Osmun
- Jay T. McGinnis
- Allen W. Cadden
- Carmine Polito
- Vernon R. Schaefer
- Mark J. Gutberlet
- Daniel J. Woeste
- David F. Meadows
- Barry S. Milstone
- Michael P. McGuire
- Matthew D. Sleep
- Anita W. Branch
- Brenden T. FitzPatrick
- Benjamin C. Jarosz