

The Land Development Design Initiative (LDDI) *2020 Annual Report*



LAND DEVELOPMENT
DESIGN INITIATIVE

PROGRAM COORDINATOR'S MESSAGE

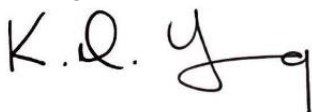
Greetings, and welcome to LDDI's 2020 Annual Report. I hope that this message finds you and your loved ones healthy and well. It goes without saying that these are challenging times in both our professional and personal lives. At the same time, the past year has given those of us affiliated with LDDI many reasons to pause, celebrate achievement, and look optimistically toward the future. I am excited to share this year's Annual Report with you, and hope you will enjoy reading about LDDI's achievements over the past year, as well as the people and organizations that give so generously of their time and resources to ensure the program's success.

Before proceeding, I would be remiss not to pause and acknowledge the retirement of Dr. Randy Dymond. After 22 years at the university, and serving as LDDI Coordinator since the program's inception, this spring marked Dr. Dymond's last at Virginia Tech. Dr. Dymond brought me on board as LDDI Assistant Coordinator in 2007 and invited me to teach our senior design course that spring semester. Aware that I had no prior classroom experience, he provided me with an opportunity and made sure that I was always aware of his confidence in my ability to succeed. That initial opportunity and confidence was supported by nearly 14 years of invaluable mentorship that extended beyond the classroom. I share my personal experience because in many ways it is a microcosm of Dr. Dymond's stewardship of LDDI – offering praise when appropriate, giving constructive feedback when needed, and providing sound counsel always. I hope you will join me in thanking Dr. Dymond for his immeasurable contributions to LDDI, and in wishing him health and happiness in retirement!

In April, College of Engineering Dean Dr. Julia Ross, announced Dr. Mark Widdowson as Department Head of the Via Department of Civil and Environmental Engineering. Dr. Widdowson has been a strong supporter of LDDI, and we look forward to working with him during his tenure as department head. I am also excited to welcome Claire White into the role of LDDI Assistant Coordinator. Since joining the Virginia Tech CEE faculty in the fall of 2016, Claire and I have worked together closely on LDDI's junior-level course. We both look forward to expanding this collaboration to all the facets of the LDDI program. Claire and I are supported in our new leadership positions by the LDDI Advisory Board, including Chair Sue Wolford and Vice Chair Jeff Gilliland, whose joint message you will find next in this report.

As I shared with my students when classes reconvened online last semester after an extended spring break, "every challenge presents opportunity, and Hokie engineers have the skills and network to capitalize on that opportunity as well as anyone." I am confident this statement can apply to the inevitable challenges that LDDI, like any organization, will face during our period of transition. LDDI is healthy and strong, with faculty leadership, industry and academic partners, and students who are all eager to carry the program forward to even greater heights. I humbly step into the role of Coordinator with a commitment to maintain the program's core values as we embrace today's challenges as the catalyst to begin the program's next chapter. I look forward to working with each of you to grow LDDI and expand its impact both on Virginia Tech students and the land development industry.

Best regards,



Kevin D. Young, P.E., M.ASCE
Coordinator, Land Development Design Initiative
Assistant Professor of Practice, Civil & Environmental Engineering
Virginia Tech



LDDI ADVISORY BOARD'S MESSAGE

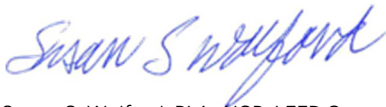
As Chair and Vice Chair of the LDDI Advisory Board (AB), we are very excited to be part of this year's Annual Report. The past year has seen changes, challenges, and more importantly, many opportunities for the LDDI program. We are beginning a new chapter with new leadership, and new ideas. To help us chart our path forward with all of this "new," we recently launched a strategic planning effort. Our first planning session proved that we continue to have a tremendous amount of enthusiasm and that we also have some lofty goals as we stretch the influence and impact of this great program. As we renew our energy for the program, we thought it would be a good idea to review the mission for the Advisory Board as set forth in our Charter. It establishes our mission to provide an advisory and advocacy role for the program as well as;

- Provide perspective on land development considerations, engineering trends, global issues, economic and market factors, regulatory issues, professionalism, leadership, communication, and the needs of the students;
- Assist faculty in achieving their mission of education, research, and outreach;
- Support scholarship efforts;
- Serve as a resource for faculty and students; and
- Assist and support the Department in the communication of the vision to Virginia Tech administration, CEE Alumni and the public

Wow! That is a lot to take on and even more impressive to achieve that mission! Our AB membership is always ready to stand up and support LDDI. We currently have 23 active members on the AB from a wide variety of private consulting firms and government agencies. This group is supported by other advocates and volunteers who have worked tirelessly on committees, in the classrooms, and within their own organizations.

As we move into this new era, we look forward to increasing our visibility and outreach, building upon the strong community of support that has developed over the years, and assisting Kevin and Claire in the continued development of outstanding students and graduates who have begun to understand our own passion for the field of land development engineering.

Best regards,



Susan S. Wolford, PLA, AICP, LEED Green Associate, ENV SP
Chair, Land Development Design Initiative Advisory Board
Regional Vice President, Pennoni



Jeff Gilliland, P.E.
Vice Chair, Land Development Design Initiative Advisory Board
Principal, J2 Engineers

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LDDI MILESTONES

Dr. Randy Dymond's Retirement

After more than 22 years at Virginia Tech, the spring 2020 semester marked Dr. Randy Dymond's last in the classroom, as he enters into a well-deserved retirement. While we are saddened to see him step down as LDDI Coordinator, we are happy that he will now be able to spend more of his time reading to grandchildren, fishing, playing guitar, and generally having fun! To claim that without Dr. Dymond's vision LDDI would not exist is not an overstatement. Indeed, the very roots of LDDI can be traced to late 2005 when, recognizing shortcomings in the CEE curriculum, he initiated a major collaborative effort with practitioners across Virginia to improve land development design education at Virginia Tech. These early efforts resulted in the establishment of the LDDI Advisory Board in 2006, and from 2006 through this spring, Dr. Dymond served as Program Coordinator. There are many ways we could attempt to recognize Dr. Dymond's invaluable contributions to LDDI - through quotes from countless students whose lives he so positively impacted, from industry professionals whose organizations now benefit from hiring LDDI graduates, or from his colleagues in academia who witnessed him build a nationally-recognized program from the ground up. As engineers, we often gravitate to numbers to communicate our point, and there's perhaps no better way to document Dr. Dymond's importance to LDDI than to look at the program's quantitative evolution over the years:

- Since 2007, Dymond has overseen cumulative LDDI fundraising totaling approximately **\$2.5 million**.
- Since 2006, nearly **3,000** students have completed at least one LDDI course offering.
- Since 2006, nearly **850** students have completed the senior design course working under the tutelage of a professional mentor facilitated through LDDI.
- Since 2006, more than **100** individuals, representing **28** different organizations, have participated in the senior design mentoring program.
- In 2019, LDDI enjoyed the financial support of **50** corporate sponsors and municipal members. When first established by Dr. Dymond and the LDDI Advisory Board in 2007, the corporate sponsorship program was supported by only 18 organizations.
- Prior to 2007, Virginia Tech CEE students had a single elective Land Development course offering, taught only once per academic year. Students now have **5** individual course offerings in Land Development.
- LDDI was the **1st** Academic Affiliates Programs at Virginia Tech

Never content to rest on past achievements, even while navigating the challenges of the COVID-19 pandemic during his final semester, Dr. Dymond worked tirelessly with CEE Assistant Professor Dr. Tripp Shealy, and other CEE faculty, to establish the Sustainable Land Development Master's Program, set to debut in fall 2021.

Dr. Dymond would be the first to point out that LDDI would not be what it is today without the unrelenting support of our partners in industry, members of the LDDI Advisory Board, his longtime assistant Kevin Young, and countless others who have contributed to program success. While that may be true, the program would likely not exist at all without Dr. Dymond's vision, leadership, and commitment to providing an ever-improving educational experience for his students. For that, and much more, we thank him and wish him all the best in retirement.



Dymond (center) in 2011 with a group of students during one of the first LDDI-sponsored out-of-town field trips

LDDI Administrative Transition

Earlier this spring, coinciding with the retirement of Dr. Randy Dymond and his stepping down from the Coordinator position, LDDI welcomed a new administrative leadership team. Moving into the role of Program Coordinator is long-time Assistant Coordinator Kevin Young, and joining him as the new Assistant Coordinator is CEE Assistant Professor of Practice Claire White. The leadership changes atop LDDI did not take place overnight or without extensive discussion and planning. Dr. Dymond, Kevin, and Claire began routinely meeting with then Interim CEE Department Head Dr. Mark Widdowson, late last summer. These meetings to discuss LDDI's leadership transition continued through the fall 2019 semester, into the spring 2020 semester, and were supplemented with additional conversations between Dr. Widdowson and members of the LDDI Advisory Board. These efforts culminated in a seamless transition of leadership roles and responsibilities and great confidence in the program moving forward. Of the transition, **Dr. Widdowson** offered the following, *"Kevin has worked with Dr. Dymond for about 12 years as the Assistant Coordinator. All of us at Virginia Tech have complete confidence in his ability to take over the administrative side of the program while he also continues his excellent teaching of students. Dr. Dymond and Kevin have worked extremely well together, and I know that Kevin has been invaluable to the growth and excellence of the program. Likewise, we have complete confidence in Claire stepping into this new role."*

Kevin assumes the role of LDDI Coordinator after having served as Assistant Coordinator since 2007. Over the past 13 years, Kevin's contributions have been invaluable to LDDI, handling numerous administrative responsibilities, advising the Sustainable Land Development Club (SLDC), and teaching various LDDI (and other CEE) courses. Since 2007, Kevin has taught nearly 3,000 students and received numerous teaching awards, including the G.V. Loganathan Faculty Achievement Award, two Certificates of Teaching Excellence, and the prestigious College of Engineering Sporn Award. He has also remained actively engaged in urban stormwater research, serving on the thesis advising committee of more than 20 master's students. Those who know Kevin recognize the passion he has for educating and mentoring his students, and recent graduate **Keith Gottberg** stated, *"Kevin truly cares about his students. When he mentors us as individuals and as groups, he engages in a way that makes us feel heard. We are not a chore to Kevin. His criticisms are constructive: they are precise, insightful, and free of judgement. He simply wants to see us master the material and improve as we ready ourselves for a career in engineering."* There is little doubt that Kevin's passion for LDDI and Virginia Tech CEE students will serve the program well moving forward.

Claire brings a unique perspective into her role as Assistant LDDI Coordinator, having gone through the program as an undergraduate student, and then serving as Graduate Teaching Assistant in various LDDI courses while completing her master's degree with Dr. Dymond as her advisor. Following the completion of her graduate degree, Claire worked for five years with Kimley-Horn in Virginia Beach. During her time in private consulting, Claire designed a variety of land development projects and worked with both public and private clients. Prior to her departure, she was the CVS/pharmacy and LIDL program manager in the Hampton Roads region for Kimley-Horn. In 2016, Claire joined Virginia Tech as Assistant Professor of Practice in CEE and the Program in Real Estate, and since that time, she has taught a number of CEE courses, including LDDI's junior-level Introduction to Land Development Design course. Positive student quotes regarding Claire's teaching talents abound, and she was recently recognized with the Program in Real Estate's Blackwood Award for Exemplary Faculty Service. Of Claire stepping into the role of Assistant LDDI Coordinator, LDDI Advisory Board Life Member **Bob Jansen** stated, *"Having been involved with LDDI from the outset, I remember my first 'thrill' moment*

was when students who went through the program returned to our Advisory Board meetings to provide input and assistance. Claire White was one of those first students who did just that. Her involvement with LDDI gradually escalated to Graduate Teaching Assistant, and now as Assistant LDDI Coordinator. I can't think of anyone else more qualified to bring us a great perspective and to help us steer the program into the future."



If the events of 2020 thus far have reminded us of anything, it is that life can be uncertain and even the best laid plans can go awry. One thing that is certain, however, is that LDDI is well-positioned for continued success and growth under its new leadership. Of the new leadership team, **Dr. Dymond** states, *"I have complete confidence in the individual abilities of Kevin and Claire, but beyond that, for years I have enjoyed watching how effectively they work together as a team. I can assure you that LDDI is in good hands moving forward."*

Dr. Mark Widdowson Appointed as CEE Department Head



In April, Dean Julia M. Ross appointed Dr. Mark A. Widdowson head of the Via Department of Civil and Environmental Engineering. Previously, Dr. Widdowson served as the interim department head following Dr. Sam Easterling's departure last spring, and as an assistant department head from 2009 to 2019. Dr. Widdowson joined the CEE department in 1993, with a research focus in groundwater and water resources. Throughout his career, both Virginia Tech and professional societies have recognized him for his scholarship and teaching.

In the Virginia Tech News article on May 26, Dr. Widdowson stated, *"[t]he Via Department of Civil and Environmental Engineering is one of the nation's top programs. I am absolutely honored to serve in this capacity. I am excited to work with our outstanding students, faculty, staff, and alumni as we build upon our rich history and a commitment to excellence in instruction, research, and service to our profession and the commonwealth."* **Dean Julia M. Ross** added, *"Mark is absolutely the right person to lead this high-performing group to new levels. He has the vision, the enthusiasm, the experience, and a deep knowledge of Virginia Tech. I am thrilled to add Mark's talents to the College of Engineering leadership team."*

Amidst this transitional period for the department, Dr. Widdowson was very giving of his time to meet with both LDDI faculty and Advisory Board members to help map out the leadership transition within LDDI following Dr. Randy Dymond's retirement. He attended LDDI's July 2019 General Meeting in Richmond as well as the fall Career Night mixer to learn more about LDDI's current status. We look forward to a continued partnership with Dr. Widdowson during his tenure as Department Head!

Sustainable Land Development M.S. Graduate Program Approved

This spring, the CEE Department approved a new master of science in civil engineering degree focusing on sustainable land development that will start enrolling students in Fall 2021. This program will provide opportunities not only for those students interested in land development but also those students who are interested in an interdisciplinary civil engineering degree. This program anticipates attracting both undergraduate LDDI students as well as students who completed their undergraduate degree at universities that do not offer the same breadth of land development courses.

As with the other master of science in civil engineering degrees, the program will require 30 credit hours which includes three core LDDI courses – Land Development Design, Sustainable Land Development, and Municipal Engineering – plus 21 credits of electives inside and outside of CEE as determined by the student and approved by their advising committee. Also similar to other master's programs, students may choose between thesis, project and report, and coursework only options. Additionally, up to 50% of the coursework can be completed outside of Virginia Tech's Blacksburg campus, opening up greater flexibility for students and professionals alike to enroll in the program. Students will have the opportunity to engage in sustainable land development research as well as experience the involvement of industry practitioners that is a staple in LDDI's undergraduate curriculum.

The interdisciplinary nature of the program will enable graduates to not only pursue careers in the land development industry but also tackle some of the larger societal problems such as aging infrastructure. Retired LDDI Coordinator and CEE Professor, **Dr. Randy Dymond** offered, *“this new graduate program crosses a lot of disciplinary boundaries and opens up opportunities for students to study how sustainability and system policy, planning, and design can work together.”*

While establishing the program, Dr. Dymond worked closely with participating faculty representing each of the five CEE program areas, including Dr. Tripp Shealy from Construction Engineering and Management. Dr. Shealy joined the CEE Department in 2015 after receiving his B.S., M.S., and Ph.D. in civil engineering from Clemson University. His research investigates engineering decision making at the system, behavioral, and cognitive levels to encourage less carbon-intensive and more user-centered infrastructure system solutions. With Dr. Dymond’s retirement, Dr. Shealy fills an important role in the new master’s program, serving as its liaison to LDDI. This will create a partnership to expand LDDI’s research and development mission, to recruit graduate teaching assistant support for undergraduate courses, and to expand the number of graduates who complete the core LDDI courses. Of this upcoming partnership with LDDI and creation of the new master’s program, **Dr. Shealy** shared, *“I’m excited by the potential of the new sustainable land development graduate program. For students, it provides an opportunity to study topics of great societal interest and urgency, but that may not fit neatly into traditional CEE academic silos. For faculty, it provides yet another attractive program for retaining and recruiting top tier students to study at Virginia Tech. Partnering with a well-established program like LDDI will undoubtedly help the new master’s program get off to a great start.”*



LDDI Strategic Planning Meeting

On May 29th, several members from the LDDI Advisory Board met via Zoom for a half-day strategic planning retreat, facilitated by Karen Cleveland with Leadership Fairfax. The purpose of the retreat was to identify where LDDI currently is and what are the key objectives and goals for the future. Prior to the retreat, Karen interviewed numerous stakeholders, practitioners, and university administrators including College of Engineering Dean Dr. Julia Ross to get their opinion on the state of LDDI. While the overall opinion of LDDI is strong, there is recognition from both the survey and interview participants as well as the retreat participants that there is room for LDDI to improve and grow. Five themes emerged from the Retreat:

- Expand LDDI’s influence and footprint nationally
- Increase involvement of LDDI graduates
- Address faculty and facility constraints that limit growth of LDDI
- Continue to build relationships with Administration at Virginia Tech
- Identify opportunities for collaboration with other CEE faculty and other departments



Members of LDDI Advisory Board met via Zoom for Strategic Planning Retreat in May

Karen is currently working on a draft strategic plan that will be iteratively reviewed and ultimately adopted by the Advisory Board. This plan will outline LDDI’s objectives, goals, and vision for the future.

CURRICULUM

The spring 2020 semester at Virginia Tech, and for universities across the country, was one without historical precedent. When students departed Blacksburg for spring break on a cold, snowy Friday in early March, no one knew what was waiting just around the corner. The speed with which developments took place over the following two weeks was breathtaking, and when classes reconvened after an extended spring break, they were held exclusively in an online, virtual format. Instructors across the university were forced to rapidly transition their instructional materials to this new delivery mode for the remainder of the spring semester, and each LDDI course presented its own unique challenges. In CEE 3274 (Introduction to Land Development Design), Kevin and Claire had to adapt the course's numerous "hands-on" learning activities into remote online exercises accompanied by videos and help documents to guide students through the required steps. In CEE 4274 (Land Development Design), Dr. Dymond had to navigate the challenge of keeping students working remotely not only as design teams, but also under the continuing tutelage of their professional mentors. Matt Stolte's debut as the instructor for CEE 4254 (Municipal Engineering) found him collaborating remotely with mentors from municipalities across Virginia to maintain engagement with their student groups. While the semester was not what anyone could have ever envisioned, the creativity, adaptability, and, perhaps most of all, the commitment of LDDI instructors to their students maintained the quality instruction for which LDDI has come to be known amidst the unique challenges. Further, the lessons learned will continue improving the educational experience for students regardless of whether future semesters at Virginia Tech operate in-person, online, or in a hybrid delivery mode.

The LDDI curriculum is comprised of five individual courses. In past annual reports, we've presented these courses individually, providing a summary of their general format, material content, and role in the broader LDDI curriculum. This year, we decided to present the courses as seen from the perspective of a Virginia Tech CEE student navigating through their undergraduate curriculum. For former LDDI students, we hope this will provide you with fond memories of your own time in these courses. For Hokie alums who predate LDDI, we hope this makes you proud of the ongoing evolution and growth of Virginia Tech CEE to better meet societal needs. For those readers with no affiliation to Virginia Tech, we hope this paints for you a clearer, more detailed picture of the LDDI curriculum. Regardless of your vantage point, we hope you enjoy the journey!

The first LDDI course in which Virginia Tech CEE students may enroll is **CEE 3274 – Introduction to Land Development Design**, which is typically offered with 2 sections every semester. CEE students at this point are entering their junior year, and the rigors of their first two years in engineering are behind them. For many students, this is the most exciting time since their arrival on campus. Completed are the myriad math and science courses, as well as other fundamental courses such as Engineering Economics and Deforms. At this point, students will have also completed the sophomore level CEE courses, Introduction to CEE, CEE Measurements, and CEE Drawings and CAD (the latter two taught by LDDI

"The Introduction to Land Development course does a great job in teaching students about the planning and design components of a land development project. It has been a privilege for me to round out the semester and discuss land development projects during construction. My goal is to help the students realize that just because your design is approved, your responsibilities as the land development engineer are typically not complete. The land development engineer plays a critical role in collaborating with the owner to facilitate successful contractor procurement as well as resolving any construction issues with the entire development team."

-Skip Notte, P.E., Vice-President, Dewberry

Coordinator Kevin Young and Assistant Coordinator Claire White, respectively). Students are now immersed in CEE course offerings, and they must complete at least six of the eight junior-level fundamental CEE courses, of which CEE 3274 is included. The course itself spans a wide diversity of topics, including global and domestic population trends, government regulations and economic issues that impact the land development industry, and more traditional CEE subject matter including transportation design, fluid mechanics, and hydrology. Recent additions to the course include two guest lectures – one from Sandy Camargo, ADS, discussing pipe materials and installation, and the second from Skip Notte, Dewberry, on the land development engineer's role during Construction. Of perhaps equal importance to the course's material content, CEE 3274 provides a semester-long opportunity to make students aware of various career

opportunities in the land development industry. Certainly, for those students who have dreamed of designing bridges or roads since they were children, this may be the lone LDDI course taken. However, for many other students, completion of CEE 3274 ignites a passion for land development and provides the fundamental skills that open the door to more advanced LDDI course offerings.

For those students for whom an interest in land development design was sparked in CEE 3274, their senior year presents four LDDI course offerings, one of which is **CEE 4274 – Land Development Design**, which is offered each semester. Many consider CEE 4274 to be LDDI’s “hallmark” course. It is one of eight designated Design Courses within the CEE curriculum, one of which all students must complete to obtain their Bachelor of Science degree. Since the fall 2006 semester, students taking CEE 4274 have been paired with practicing engineers from LDDI sponsoring firms who serve as mentors on a semester-long design project. This design project is completed across five learning modules, the last of which is an oral presentation of the semester’s cumulative design effort. The material content of CEE 4274 is very similar to that of CEE 3274, but is delivered to and applied by students in a substantially different way. In CEE 3274, like other fundamental courses, students complete homework and other educational activities in a “given-solve-find” format, where students use provided input data to work toward a direct and consistently repeatable solution. CEE 4274 presents students with the real-world challenge of designing in an environment for which all input variables are not known, and for which assumptions and subsequent design iteration is required. While a somewhat subtle distinction between the two courses, this denotes a critical evolutionary step for LDDI students, as their skills not only grow, but begin to develop in a way that prepares them for entry into the professional world. Nearly all students who complete CEE 4274 will also take a second or even third senior-level LDDI course.

“I have volunteered twice now since graduating in 2014 to mentor the LDDI design course, and each time I have been enamored with the consistency and quality of the students Virginia Tech, its professors, and its curriculum continues to produce and provide to the industry. They simply are the best around.”

- **Greg Schmitt, P.E.**, Kimley-Horn Engineer
CEE Class of 2014

“Engaging with senior design teams who are perhaps working on their first ‘project design team’ effort and being able to present to them many different design solutions that can directly apply to their projects is special. In addition, providing them with applicable tools they can use immediately upon entering the workplace puts them in valuable position with new employers. Beyond that, mentoring one team to use one of our products to satisfy their needs is just icing on the cake and builds lasting relationships. Meeting the students again once they are working and hearing that they often knew more about some products than their seasoned supervisors is a great feeling that reaffirms our involvement and commitment to the LDDI program.”

- **Sandy Camargo, P.E.**, ADS Zone Engineer

First introduced to the LDDI curriculum in 2010, **CEE 4254 – Municipal Engineering** was initially taught in the spring semester of alternating years. Beginning in 2019, the course is now taught every spring semester. Unlike CEE 3274 and CEE 4274, Municipal Engineering is not focused on building and developing students’ design skills. Rather, the course seeks to familiarize students with the role of the municipal engineer, and the important relationship that exists between municipal engineers and the land development industry. The spring 2020 offering of the course was taught for the first time by Matt Stolte (Town of Blacksburg), and he delivered content through four major course modules:

- Municipal Engineering Finance and Planning
- Municipal Infrastructure, Capital Construction, Systems Operation, and Engineered Life Cycles
- Infrastructure Management Concepts, Tools, and Programs
- Research, Organization, and Presentation of Preliminary Engineering Projects.

The course also features many guest speakers and municipal engineering mentors from across Virginia who work directly with students on projects. LDDI graduates who have completed CEE 4254 will often cite the course as a strong compliment to CEE 4274, noting the value in having a more comprehensive understanding of the both the private and public players in the land development arena.

"It was an honor and personally rewarding to be part of the spring 2020 LDDI program as an adjunct instructor, in conjunction with Dr. Dymond, Kevin Young, and James Patteson, for the Municipal Engineering CEE 4254 course. Engineered infrastructure systems are essential for communities to function and require collaboration between the private and public civil engineering professions. The municipal engineering class is exciting to be part of because it allows students to explore the nexus between private site development projects and municipal engineering via topics of construction, operation, maintenance and renewal of public infrastructure."

- **Matt Stolte, P.E.**, Assistant Director – Management, Town of Blacksburg Public Works

Like CEE 4254, another course frequently cited by graduates as a strong compliment to LDDI's design-oriented courses is **CEE 4264 – Sustainable Land Development**. First introduced to the curriculum as a one-credit seminar in 2008, its immediate popularity served as a catalyst to rapidly expand the course to a full three-credit offering, now taught every fall semester. CEE 4264 focuses on the developed site's long-term sustainability and preservation of pre-development environmental quality. Specific topics include:

- site selection and linkage
- neighborhood pattern and design
- development impacts on water, air, and soil
- microclimate; industrial ecology and materials
- energy
- incentive driven sustainability efforts

The course also introduces students to third-party site evaluation methods including Leadership in Energy and Environmental Design for Neighborhood Development (LEED ND), Envision, and Earthcraft Communities. CEE 4264 students visit local development projects that feature innovative, sustainable design features, and the course also features a number of outside guest speakers who deliver presentations on timely and emerging topics. While many students choose to take CEE 4264 in combination with other LDDI courses to strengthen and broaden their overall land development knowledge base, CEE 4264 enrollment also includes students whose areas of interest lie in areas other than land development, but for whom there is a general interest in issues of sustainability.

"Students taking Sustainable Land Development are given more tools in their toolbox for assisting their future clients with a variety of land development options. Students are taught about alternate design concepts for typical traditional infrastructure elements in land development such as utility design, road and parking lot design, stormwater, and more. They learn about considering not only capital investment strategies but those that reduce life cycle costs and consider operations and maintenance issues. They understand basic space planning and design elements needed for alternative sustainable infrastructure. When clients have a development idea, these engineers are better situated to assist them in site selection for sustainable housing, often translating into infrastructure savings. "

- **Meredith Jones, P.E.**, Vice President, Eden & Associates

Rounding out the LDDI curriculum, and for those students who are fully committed to land development design, there is **CEE 4284 – Advanced Land Development Design**. First offered to students in 2007, and now taught during the spring semester of alternating years, CEE 4284 is unique in that it is taught by teams of professional engineers from LDDI sponsoring firms. The course is also unique in that it follows a non-traditional course schedule, meeting on Friday nights and Saturday mornings. This arrangement is necessary to accommodate the schedules of the industry professionals serving as course instructors, many of whom are traveling from several hours away to teach. To enroll in CEE 4284, students must have previously completed, or be currently enrolled in, CEE 4274. This pre/co-requisite requirement permits coverage of advanced land development topics, including:

- site selection, due diligence, and entitlement
- the Virginia Runoff Reduction Method
- design-build, public-private partnerships, and non-traditional project delivery methods
- infill development and development challenges in urban environments

Students completing CEE 4284 are some of the most sought after by employers, as they are not only conversational in these topics, but also have a basic proficiency in their application. Not offered this past academic year, CEE 4284 is scheduled to be offered again in the spring 2021 semester.



Rich Barnes, ATCS, meets with senior design team

"The LDDI program at Virginia Tech is an investment in your future as a civil engineer in the field of land development. Each course offers perspective into different aspects of the development world, from the basics with intro to LD, to coordinating with regulating agencies and reviewing ordinances in Municipal LD, to maintaining an environmentally conscious outlook in a world driven by profits with Sustainable LD, and even designing portions of actual site plans with the design courses. I can say first-hand that companies definitely see the value in hiring LDDI graduates, as these interns and full-time employees have proven they are quick learners, show competence and confidence with AutoCAD, and have a grasp of the challenges facing civil engineers to the extent that these new hires need little hand-holding and hit the ground running."

- Michael Roselius, EIT, GORDON Project Engineer, CEE Class of 2015

We would like to thank the following individuals and organizations for their guest lectures or mentorship in LDDI courses during the last academic year. Thank you for helping to enrich our students' educational experience!

Land Development Design Mentors

- AES Consulting Engineers
- ATCS
- Bohler
- Bowman Consulting
- Draper Aden Associates
- Edens Land
- GORDON
- J2 Engineers
- Kimley-Horn
- McAdams Company
- Pennoni
- Timmons Group

Municipal Engineering Mentors

- Arlington County
- City of Fredericksburg
- City of Manassas
- City of Richmond
- City of Williamsburg
- Clark Nexsen
- Eden & Associates
- Fairfax County
- Pennoni
- Spotsylvania County
- Town of Blacksburg
- Virginia Department of Transportation (VDOT)

Guest Speakers

- Matt Adams, Fairfax County
- Andy Alden, I-81 Corridor Coalition
- Eric Anderson, CHA, Inc.
- Sandy Camargo, ADS
- Janaka Casper, Community Housing Partners
- Denny Cochrane, Virginia Tech Facilities
- Carol Davis, Town of Blacksburg
- Margaret Dean, Town of Blacksburg
- Mike Dunn, Virginia Tech Facilities
- Thomas Fox, Blacksburg Transit
- Elizabeth Grant, VT College of Architecture and Urban Planning
- Leslie Hager-Smith, Town of Blacksburg Mayor
- Suzy Harding, Fairfax County
- Lee Hixon, H2R Engineering
- Clay Hodges, Virginia Tech Foundation
- Kafi Howard, Town of Blacksburg
- Bob Hubbell, Brookfield Homes
- Meredith Jones, Eden & Associates
- Susan Kaiser, Town of Blacksburg
- Andy Kassoff, Blacksburg Planning Commission
- Blaine Keesee
- Mike Kelly, Town of Christiansburg
- Trevor Kimzey, Gay & Neel
- Daniel Langston, christopher consultants
- Amy Linderman, Fairfax County
- Anas Makowi, Hampton Roads Sanitation District
- Don Marickovich, Draper Aden Associates
- Anne McClunge, Town of Blacksburg
- Joshua Middleton, Town of Blacksburg
- Craig Moore, Virginia Department of Transportation
- Skip Notte, Dewberry
- Justin St. Clair, Town of Christiansburg
- Robert Stalzer, City of Fairfax
- Brad Stipes, Christiansburg Town Council
- Caleb Taylor, New River Valley Water Authority
- Eric Wiseman, VT College of Natural Resources

FINANCIAL SUMMARY

During the 2019-2020 fiscal year, LDDI collected revenue of approximately \$270,000 through its corporate sponsorship and municipal membership program, individual donations, and other fundraising efforts. This figure reflects the support of 50 corporate sponsors and municipal members, matching the highest number ever. Additionally, to date, LDDI has received personal donations from nearly 100 individuals. Revenue collected during FY 2019-2020 was used to directly support LDDI activities inside and outside of the classroom, including salary support for LDDI course instructors. The following describes some of LDDI's major expense categories toward which collected revenue has been directed.

- *Instructor Compensation:* Of the eight or nine LDDI course-sections offered each year at Virginia Tech, the university provides financial support for only three. Revenue from corporate sponsorships and municipal memberships fund the remaining courses in their entirety.
- *Program Expenses:* Program expenses include support for the Sustainable Land Development Club (SLDC), including field trips, travel to service project locations, and catering for after-hours guest speakers and other events. This expense category also includes event catering for LDDI general and outreach meetings, publication of the *LDDI Bridges* quarterly newsletter, and publication of the LDDI Annual Report.
- *Operations Expenses:* Operations expenses include general overhead costs including postage, printing and copying, telecommunications, and university accounting and service fees.
- *Travel and Meetings:* LDDI now hosts three general membership meetings each year. Outreach efforts such as these comprise a critical part of LDDI's efforts to ensure continued practitioner participation in the program.

It is an understatement to say that we are grateful for the financial support of our corporate sponsors and municipal members. However, a budget model that relies solely on funding from annual sponsorships is not sustainable in the long term as it is vulnerable to economic downturns and affords little to no opportunity for program growth. The inability to grow is at odds with ever-increasing market demand for LDDI graduates and growing enrollment at Virginia Tech. An Endowment Campaign is currently underway to fund growth of the LDDI program through an endowed principal fund. The current endowment goal is \$10 million, and over the past three years, progress has been made toward this goal, both in terms of increasing the number of individual donors as well as securing larger, multi-year pledges from companies and other organizations. Currently, all personal donations made to LDDI are directed to the LDDI endowment fund.

"The LDDI program provided many new and exciting experiences during my studies at Virginia Tech. Between the challenging coursework and unmatched networking opportunities, LDDI made a positive difference in my academic career and provided real world experience that will help me professionally. I took Municipal Engineering, Sustainable Land Development, and the senior-level design course my senior year, which focused on sustainability and solving real world design problems. The mentorship in these courses from industry professionals and the challenging group work provided an environment designed to foster growth for technical skills as well as invaluable communication skills. I came out of these courses with strong relationships with group members that I look forward to growing beyond our time together at Virginia Tech!"

– Allie Zuras, CEE Class of 2020, Analyst, Kimley-Horn

LDDI INDUSTRY AND NETWORKING EVENTS

General Meetings

Over the past year, LDDI hosted two General Meetings, a July gathering held in Glen Allen, Virginia and a January meeting held in Clifton, Virginia. A third meeting, originally scheduled for April in Charlotte, North Carolina was canceled due to the COVID-19 pandemic. In addition to the thematic content of the meeting, LDDI General Meetings serve an important outreach function, keeping sponsors and other professionals in the land development industry informed of program activities both inside and outside of the classroom through the overview presentation delivered by Dr. Randy Dymond. Another important outreach component of the meetings is the networking opportunity amongst a diverse mix of attendees that includes consulting engineers, developers and homebuilders, product and service providers, municipal engineers, and others from the land development industry. Lastly, the meetings also provide a great opportunity to showcase students, with this year's meetings featuring presentations from senior design teams mentored by LDDI sponsors Bohler, Bowman Consulting, Edens Land, and Timmons Group.



Senior design team mentored by Timmons Group presents at the January 2020 LDDI General Meeting

LDDI's 2019 summer meeting was held on Friday, July 12th, 2019 at the Virginia Society of CPAs facility in Glen Allen and featured an impressive panel of speakers from Virginia Tech, the University of Virginia, Virginia Commonwealth University, and the Town of Blacksburg. The panelists discussed master planning efforts on their respective campuses. Presenters from Blacksburg and Virginia Tech also highlighted the challenges and relationship that exists between a growing university and the small town in which it is located.



Yon Lambert speaks at the January 2020 LDDI General Meeting. Yon is the Director of Transportation & Environmental Services Department for the City of Alexandria.

LDDI's annual winter meeting was held on Friday, January 10th, 2020 at the Twin Lakes Golf Course meeting facility, located in Clifton. The theme of the 2020 winter meeting was "Municipal Strategic and Comprehensive Planning in Northern Virginia" and featured a panel of guest speakers with representatives from the City of Alexandria, Fairfax County, Loudoun County, and Prince William County. The meeting concluded with the surprise presentation of a certificate of appreciation to Dr. Dymond from the LDDI Advisory Board recognizing his years of program leadership.

What would have been LDDI's third General Meeting held in Charlotte became one of countless events cancelled this spring due to the COVID-19 pandemic. Nevertheless, LDDI

wishes to thank the City of Charlotte, Charlotte DOT, Charlotte Douglass International Airport, and the Charlotte Area Transit System for agreeing to have representatives speak at this meeting. LDDI eagerly looks forward to returning to Charlotte in the future!

We would like to recognize the following guest speakers for their contributions to the LDDI General Meetings in the past year. Thank you for your role in maintaining outreach with our general membership!

- Mike Dunn, University Planning, Virginia Tech
- Jeff Eastman, Virginia Commonwealth University
- Randy Formica, Town of Blacksburg
- Rebecca Horner, Prince William County
- Yon Lambert, City of Alexandria
- Chris Lawrence, Town of Blacksburg
- Julia Monteith, University of Virginia
- James Patteson, Fairfax County (retired)
- Jack Washington, University Planning, Virginia Tech
- Charles Yudd, Loudoun County

Golf Tournament

On September 24th, LDDI, Inc. hosted its fifth annual Land Development Professionals Golf Tournament at the Potomac Shores Golf Club in Dumfries, Virginia. LDDI, Inc. is an IRS-recognized 501(c)(3) non-profit entity that exists to support the efforts of the broader LDDI program. This annual tournament has grown to become an important source of revenue for LDDI, and the 2019 tournament featured nearly 30 event sponsors and more than 80 golfers!

The 2019 Land Development Professionals Golf Tournament was organized by a dedicated team of individuals that included LDDI Advisory Board Chair Sue Wolford (Pennoni), **Kyle Bollinger** (Kimley-Horn), and Jim Bishoff (J2 Engineers). Of his involvement with the event, Kyle states, *"I really enjoy working with Sue and Jim to organize LDDI, Inc.'s annual golf tournament. Potomac Shores is a beautiful course, and the opportunity to play it attracts a broad spectrum of professionals in the land development industry. We've been blessed with some great weather over the years, and everyone enjoys getting out of the office to hit the links on a nice fall day. Add to that the financial impact the tournament has on LDDI and it's a win-win for everyone involved."*

LDDI thanks Sue, Kyle, Jim, and the many other volunteers who contributed to the success of the 2019 golf tournament. Be sure to mark your calendar for this year's tournament, scheduled for Thursday, September 24th.



LDDI Advisory Board member Caleb Hurst (center, orange) and former SLDC president Tyson Catlett (center, blue) pause for a photo with their Draper Aden Associates' colleagues at the 2019 Land Development Professionals Golf Tournament

Career Nights

Fall 2019 and Spring 2020 marked the 22nd and 23rd consecutive semesters that LDDI has hosted “Land Development Career Night” – a professional networking event held on the eve of the Civil & Environmental Engineering Career Fair. These mixers provide an opportunity for students to meet and mingle with prospective employers in a relaxed environment prior to the stressful and sometimes even chaotic atmosphere of the career fair. **Roy Waugh**, Principal at Bowman Consulting, states, *“We’ve found that we do some of our best recruiting at the Career Night mixer. It’s much more low key and informal than the career fairs, and it helps to pare down the list of recruits from the overall CEE field of study to those that are primarily interested in land development.”*



CEE student Bradley Gritz speaks with Dewberry's Joe Whartenby at the spring 2020 LDDI Career Night

Held at the Hokie House, the event provides employers, many of whom are Virginia Tech alumni, an opportunity to not only recruit top student talent but to also revisit one of Blacksburg’s favorite venues. Open to all CEE students, as well as representatives from LDDI sponsoring organizations at all levels, fall semester Career Nights routinely draw between 150 and 200 attendees. While the spring mixer is never quite as busy as its fall counterpart, it still provides students and employers with an unprecedented networking opportunity. LDDI sponsors often bring a combination of human resources professionals along with their technical staff. **Heather Clements**, Talent Acquisition Manager at Bohler, said, *“Our Talent Acquisition team finds the Career Night Mixer to be an essential event during the recruitment season as it provides an additional opportunity to build relationships with students and connect on a casual level to learn more about who they are, beyond a paper resume.”*

“The classes, faculty, and extra activities in the LDDI program have equipped me with knowledge and skills that will set me apart from civil engineers graduating from any other university and help me build a strong professional network. CEE Measurements and Introduction to Land Development sparked my interest in the field while the Land Development Design course prepared me for a career in it. By working with experienced faculty and industry professionals, I was able to solve real world problems with practical solutions, while building my collaboration and leadership skills. Because of the LDDI program, this class provided an invaluable experience that cannot be found elsewhere. I am looking forward to taking Sustainable Land Development and Municipal Engineering next year to continue my learning and start working towards earning my master's degree in the new Sustainable Land Development Program at VT.”

– **Akul Mehra**, CEE junior, Class of 2021

SUSTAINABLE LAND DEVELOPMENT CLUB

The origins of LDDI trace back to the outreach made in 2005 by Dr. Randy Dymond to professionals in the land development industry across the various geographic regions of Virginia. Indeed, since the program's inception, there has been an appreciation for the need to engage with industry in order to create a comprehensive land development design curriculum. While the word *curriculum* itself is often viewed as a collection of related courses, each with its own content and metrics of evaluation, LDDI believes that a comprehensive curriculum must also include complimentary networking opportunities and learning experiences outside of the classroom. These opportunities further help to prepare students for a career in the land development design industry, and assist them in starting to build a network of professional contacts.

The Sustainable Land Development Club (SLDC) was founded in 2008, and LDDI Coordinator Kevin Young has served as the club's advisor since that time. Under Kevin's guidance, and leveraging the resources from LDDI sponsoring firms, each semester, the SLDC provides students with numerous opportunities to engage with industry professionals. The SLDC also embraces Virginia Tech's motto of *Ut Prosim – That I May Serve*, and, along with other service activities, now holds an annual fall food drive and other fundraisers to support local food banks. Class of 2020 CEE Outstanding Senior **Lucy Travers** completed her second year as SLDC president this spring and states, *"The SLDC has grown a lot in the last two years. Through visiting classrooms to promote meetings and other club activities, expanding the content and variety of club functions, and the food drive, we encouraged more students to participate. During my time with the club, I believe the food drive was the most impactful thing that the club did that allowed for an increase in camaraderie between the students and with the community. I am proud of the growth I have seen within the club."*

The fall 2019 semester and early weeks of the spring 2020 semester were active for the SLDC. The following section presents some of the events held during this time, and in fulfillment of LDDI's mission to connect industry professionals with LDDI students. On March 11, in response to the then-emerging COVID-19 pandemic, Virginia Tech administration made the decision to move all courses to an online delivery format for the remainder of the spring semester. Coinciding with this decision was a cancellation of effectively all university-sponsored activities, including numerous SLDC events already scheduled. LDDI would like to recognize the following individuals and companies, whose events were canceled, and thank them for their support of the program:

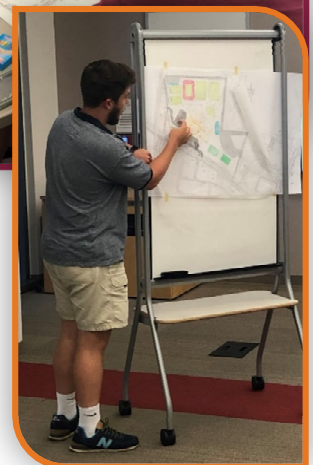
- Skip Notte, Dewberry – Design Charrette & Competition
- P.J. Heflin, Concrete Pipe & Precast – On-Campus Product Exhibition
- Josh MacDonald, Timmons Group – Organizer, Industry Professionals Panel

Value Engineering Workshop

In September, LDDI Advisory Board Vice Chair and Principal at J2 Engineers, **Jeff Gilliland**, led LDDI's second Value Engineering (VE) workshop. The fall event built upon the first workshop, organized and led by Gilliland early in the spring 2019 semester. Of the event, Jeff states, *"For years I have been a strong supporter of LDDI activities that build land development design skills through real-world challenges. Like the Design Charrette activity, the VE workshop offers a supportively competitive environment, and creates unprecedented learning opportunities. Value*



Students contemplate their conceptual layout during LDDI's second Value Engineering Workshop (above) and Kirk Arnold, CEE junior, presents his team's conceptual layout (right)



engineering is an important part of the design development process for all projects. It is often associated with cost saving measures, but it's more than that. I'm passionate about teaching young engineers the importance of maintaining a functional design while considering cost saving measures. The students were very engaged and it was great to see them present their solutions at the end of the workshop!"

The VE workshops are titled and promoted to students as "A Practical Exercise in Value Engineering." Jeff begins the session by providing students with a brief history and introduction to the governing principles of VE. Next, students are provided with full size plan sheets showing topographic and planimetric data for a proposed public school site. Then, working in teams of three to five, students place "paper doll" cutouts of parking lots, athletic fields, and other proposed features on the base mapping to construct conceptual layouts that meet client objectives, adhere to site and other development constraints, and apply principles of VE. The event concludes with students presenting their conceptual layouts and the rationale behind their design, providing an opportunity for Jeff and other students to offer constructive critique and feedback. **Rachel Stewart**, CEE senior, shared *"The Value Engineering session allowed me to apply what was learned in class with a hands-on activity. It gave me a new perspective on what to consider when laying out a site"*

The VE workshop is now an annual, fall semester event, to compliment the long-standing spring semester Design Charrette and Competition.

Sheet Cake Concept Plans

In October, the student club welcomed Pennoni's **Sue Wolford** and Laura Hall to campus for a concept planning exercise with a twist – this plan's canvas was a sheet cake. After a brief presentation covering the various disciplines involved in a land development project, students were divided into four teams. Each student represented one of the key design team members, such as a civil engineer, landscape architect, contractor, or developer. Sue is always looking for unique and creative ways to present land planning concepts so she modified the traditional creation of a gingerbread house into the land development realm. *"I was really impressed by how the students worked together as a team, asked questions about the development process, and had fun with it at the same time. You can draw concept plans on paper any day but how many times do you get to test out your design on a sheet cake?"*



The winning team and their sheet cake layout

Each team was given a different construction budget with unique site constraints such as a required tree buffer or road access points. Teams had to carefully manage their construction budget to cover the development costs of a variety of site elements including graham cracker building pads, Dum Dum lollipop trees, and fruit roll-up roads, all while also trying to maximize revenue. While aesthetics did not factor into the selection of the winning team, the teams certainly got creative with how they "developed" their cakes. The team with the highest yield was crowned the winner. **Jessica Viehman**, a CEE junior on the winning team, said *"This activity engaged students in a hands-on activity that directly related to topics presented in the classroom. This was my favorite civil engineering related event that I attended on campus, as it not only engaged my engineering knowledge, but allowed me to use my imagination."*

It is safe to say every student left a winner and there was plenty of cake to share!

On-Campus Product Exhibition



ADS' David Camden speaks with students during the fall 2019 on-campus product exhibition.

product exhibition. During the spring 2019 semester, LDDI Platinum sponsor Concrete Pipe & Precast (CP&P) also visited campus for an on-campus exhibition, and the company was scheduled to return this April before the unfortunate cancelation of all university events due to COVID-19.

It's always enjoyable to watch the curious and sometimes puzzled expressions on students' faces as they study pipes, manholes, inlets, and other structures that they may have only previously seen in photos or depicted schematically on design plans. VT CEE major **Elaine-Joy Consolacion** attended the fall 2019 on-campus exhibition and stated, *"I found much value from attending ADS' product exhibition on the Drillfield because the event helped me to truly understand the massive scale of a lot of the projects I could potentially be involved in for my career. Prior to this event, I've never had the chance to see such large stormwater pipes up close. To witness these sights as a student also brought more perspective to my learning experience because it's easier now to visualize the problems and systems that we are taught to solve and analyze in the classroom every day."* LDDI wishes to thank ADS for giving so generously of the time of their salesmen, engineers, and truck drivers to come to campus.

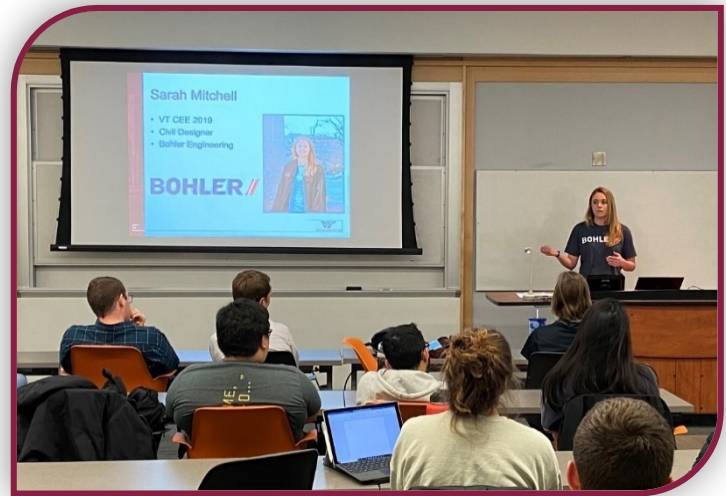
"The Introduction to Land Development course exposed me to the essential service land development engineers provide to people. It is a challenge among all industries, but especially the land development industry, to effectively and appropriately balance social, economic, and environmental demands. Land development engineers use their technical and professional skills to produce realistic and optimal design solutions that maintain this balance. I feel that I have been equipped with a fundamental set of technical and professional skills for the land development industry. I have been inspired to learn more and I am excited to further advance my knowledge and experience through the Land Development Design Course."

– **Conor Doane**, CEE junior, Class of 2021

Young Professionals Panel and Resume Review Workshop

In February, LDDI and the SLDC debuted a new event titled the “Young Professionals Panel and Resume Review Workshop.” For many graduates, transitioning from college to the professional world represents an abrupt lifestyle change that can be challenging to navigate. For some students, questions and stress begin to emerge before they even graduate and accept a position. *What will my first six months on the job be like? What about the first year? Would I thrive working for a small land development firm or a large, multi-discipline company with a national or even international presence?* Questions understandably abound, and this new event sought to tap into the LDDI network to help current students better face these questions and challenges. The panelists consisted of graduates from the LDDI program currently employed by LDDI sponsoring firms. More specifically, the panel was assembled to include a mix of young professionals spanning from less than six months in the industry up to three years. Further, the panelists represented a diversity of company sizes, from very small to large, national firms. Panelists were asked to speak about the challenges they faced during the early stages of their careers and to discuss the corporate cultures and philosophies of their respective firms. LDDI wishes to recognize and thank the following individuals for participating in the inaugural Young Professionals Panel:

- Laura Hall, Pennoni Associates
- Michael Lanza, VHB
- Sarah Mitchell, Bohler
- Lily Nguyen, Cowen Design Group
- Dan Peets, Draper Aden Associates
- Barrett Terrell, AES Consulting Engineers
- Heather Timothy, Kimley-Horn
- Alex Wells, J2 Engineers



Bohler's Sarah Mitchell (VT CEE 2019) speaks at LDDI's inaugural Young Professionals Panel

Michael Lanza, CEE Class of 2019, now with VHB, who originally suggested the event, shared, *“throughout my time in the LDDI Program, I always appreciated the dedication and enthusiasm the industry professionals had and hoped I would be able to follow in their footsteps. When I was nearing graduation, I realized that many other students had similar questions about working in the industry as I did and that I would be able to help answer a few of these questions in the months following graduation.”* Fellow classmate **Heather Timothy**, now with Kimley-Horn echoed Michael's enthusiasm. *“Sharing my career experiences with students in the land development program gave me an opportunity to reflect on when I was a student just a year ago. Transitioning into the working world can seem overwhelming, but the VT LDDI Program prepared me well. It was personally rewarding to give back to a program that I am so grateful for, and I look forward to continuing to support LDDI as an alum.”*

The Young Professionals Panel was strategically scheduled just prior to the Virginia Tech CEE Career Fair, and following the panel presentation, Timmons Group Talent Acquisition Manager **Courtney Cooper** provided attending students with resume and interview tips, and even reviewed and provided feedback on individual student resumes. Of her involvement, Courtney offered, *“I found the LDDI resume review session to be an excellent opportunity to interact with the students. I enjoyed answering their questions, providing feedback and sharing information about what I look for in a resume and expect during an interview. It was definitely time well spent and a great networking opportunity.”*

Philanthropy

In the spirit of Virginia Tech's motto of *Ut Prosim – That I May Serve*, the SLDC has a long history of fundraising and philanthropy, and in recent years has contributed to multiple local food banks, Hurricane Maria relief efforts, and other worthy causes. These efforts continued to grow this year, and during the fall 2019 semester, SLDC students arranged two "percentage nights" at local restaurants, and for the third year in a row held a fundraiser cornhole tournament. This year's tournament also featured a raffle of gifts donated by local vendors. Recent graduates **Lauren Buellesbach** and **Sydney Greenspan** served as co-chairs for SLDC fundraising and philanthropy over the past two years, and Lauren states of her involvement, *"I have loved my time serving as a co-philanthropy chair for SLDC, as it has provided me a way to become more active on campus, as well as in the Blacksburg community."* Sydney echoes Lauren's comment, and adds, *"It has been a privilege to be able to work with such a passionate group of students and CEE faculty organizing events that raise money and donate supplies to the local community. The SLDC has provided me with amazing networking opportunities and the ability to give back to the community."*

The fundraising efforts of SLDC students this fall enabled a \$300 donation to Micah's Backpack to provide assistance to public school students at high risk of food insecurity, a \$200 gift card donation to the Blacksburg Interfaith Food Pantry, and a \$200 contribution to Save the Children for Bahamian hurricane relief. Fall semester fundraising efforts often align with periods of increased demand on food banks, and Director of the Interfaith Food Panty **Vern Simpson** said of the fall 2019 SLDC donation, *"I'm thankful for the very generous gift card provided by this student group. Gift cards are very handy at the pantry for when we run out of some food item and need to replace it quickly."*

LDDI wishes to thank Lauren, Sydney, and numerous other SLDC members for their contributions to the SLDC's philanthropic mission over the past year, and we look forward to continuing these efforts in the future.



Students take a break from classes to pitch a game of cornhole at the third annual SLDC fundraiser tournament

"The LDDI program has helped to prepare me to hit the ground running after graduation. During the school year and between internships, LDDI has helped me to strengthen my skills in design, critical thinking, problem solving, and CAD. The design course challenged and pushed me and my group to solve real issues facing our site, giving us crucial experience as we enter the industry. The LDDI professors and CEE 4274 mentors also truly care about their students and helped us to grow as engineers."

- **Julia Cadman**, VT CEE 2020, Graduate Engineer - Dewberry

LDDI FACULTY AND STUDENT AWARDS

We would like to recognize the following LDDI faculty members and students for the recent awards they received.

- **Claire M. White, Blackwood Award for Exemplary Faculty Service**

This award is presented to a Program in Real Estate faculty member who has truly gone above and beyond in providing their best service to the students. Claire receives this award in recognition of her efforts to improve and expand upon the course content for the junior-level Applied Real Estate Development course.

- **Lucy Travers, Class of 2020 CEE Outstanding Senior**

This award is presented to one graduating senior in the CEE Department in recognition of their academic achievement, extracurricular activities, leadership positions, and contributions of service to the university and/or community. Lucy was nominated by CEE faculty for this award and was a candidate for the College of Engineering Outstanding Senior.

- **Julia Cadman, CEE Top in Class 2020**

This award is presented to the CEE graduating senior with the highest GPA.

- **Lucy Travers, LDDI Hokie Stone Award**

This award recognizes an LDDI student whose leadership, attitude, and personality elevate the performance of all those around them. Lucy is a two-time recipient of this award.

- **Allie Zuras, LDDI Leadership in Sustainability**

This award recognizes an LDDI student's commitment to sustainability as it relates to land development design.

- **Julia Cadman & Seth Epperson, LDDI Senior Design Students of the Year**

This award recognizes the top CEE 4274 students over the past academic year.

- **Paul Miller, LDDI GTA Recognition**

During the annual LDDI student awards ceremony, we also take a moment to recognize the contributions of the GTA who diligently assists the senior-level LDDI courses. Paul Miller has served as the GTA for Land Development Design, Sustainable Land Development, and Municipal Engineering for the past two academic years.

- **CEE Departmental Scholarships for Students with a Land Development Focus**

- **Lauren Epps & Erin Hrovatic:** William A. Joyner Scholarship
- **Ann Tkacik:** Howell & Ann Simmons Scholarship
- **Ahmed Ahmed:** Balzer & Associates Scholarship

HOW TO GET INVOLVED WITH LDDI

Since its earliest beginnings, LDDI has relied heavily on the “time, talent, and treasure” of industry professionals to achieve program goals. The past 14 years have seen LDDI grow to become a nationally-recognized leader in undergraduate land development design education. There are nearly 800 individuals currently in the LDDI database, with many attending LDDI General Meetings and other LDDI functions. During these meetings, these professionals contribute ideas for curriculum improvements, practitioner engagement with students, and other suggestions for improving the program. If you are not already on our email list, please reach out to us to be added so that you receive invitations to future events, as well as eUpdates, newsletters, and other program news.

There are many ways for individuals to become involved with LDDI, and you are encouraged to review the respective summaries of each of LDDI’s four standing committees, below. Each committee provides its own unique opportunities to become active in the program, and we invite you to find the avenue of involvement that best suits your own interests and professional expertise. Also included are the respective points of contact for each committee.

For organizations, LDDI offers four tiers of corporate sponsorship, and two levels of municipal membership. Contact information to discuss sponsorship/membership opportunities is also provided.

Curriculum and Enhancement Committee

LDDI’s Course and Curriculum Enhancement Committee (CCEC) assists the Via Department of Civil and Environmental Engineering in providing a strong and sustainable land development design curriculum, and facilitates the development of coursework and other student learning resources with significant input from industry professionals. The CCEC is co-chaired by christopher consultants’ **Andy Gorecki** (andygorecki@ccl-eng.com) and Dewberry’s **Cameron Palmore** (cpalmore@dewberry.com).

Practitioner Involvement Committee

LDDI’s Practitioner Involvement Committee (PIC) exists to develop a strong and sustainable relationship between all sectors of the land development profession and students within the Via Department of Civil and Environmental Engineering, specifically those enrolled in LDDI courses. This involvement helps to prepare students for a career in the land development design profession by providing educational and networking opportunities outside of the classroom, as well as complimenting more traditional modes of instruction. The PIC is chaired by Timmons Group’s **Josh MacDonald** (Josh.MacDonald@timmons.com).

Outreach Committee

LDDI’s Outreach Committee is responsible for promoting career opportunities in the land development industry, specifically land development engineering, to students via informational publications, social media, and other outlets. The Outreach Committee also leads LDDI’s annual sponsorship drive, and provides assistance with planning and organizing LDDI’s three annual General Meetings. The Outreach Committee is co-chaired by Bohler’s **Brett Buckland** (bbuckland@bohlereng.com) and Draper Aden Associates’ **Caleb Hurst** (churst@daa.com).

Research and Development

The function of LDDI’s Research and Development Committee is to oversee efforts to conduct and administer independent research efforts aimed at providing scientifically-based evidence concerning the practicality and suitability of existing and emerging techniques, technologies, and policies to address engineering issues related to land development design. The Committee is charged with identifying research goals, seeking funding, and providing overall, strategic direction to the research team. In addition, the Committee is charged to promote the pursuit of research within the industry and encourage the use of Virginia Tech and LDDI as the vehicle of investigation. Inquiries regarding research opportunities may be directed to Virginia Tech CEE Assistant Professor, **Tripp Shealy** (tshealy@vt.edu).

Corporate Sponsorship, Municipal Membership, and Individual Giving

Last year, LDDI enjoyed the support of 50 corporate sponsors and municipal members, and nearly 100 individual donors. There are four levels of annual corporate sponsorship which afford varying levels of student access and interaction. Two levels of membership are offered for municipalities and other government agencies. For more information, please contact Kevin Young, Claire White, or visit the LDDI website at <http://www.lddi.cee.vt.edu>.

For more information on how to get involved with LDDI, please contact:

Kevin D. Young, P.E., M. ASCE
VT LDDI Coordinator
(540) 231-2474
keyoung@vt.edu

Susan Wolford, PLA, AICP, Leed Green Associate, ENV SP
LDDI Advisory Board Chair
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RECOGNITION OF SPONSORS AND DONORS

Diamond Level

ADS

From its introduction and championing of corrugated plastic drainage pipe in the United States more than fifty years ago, to its current line of innovative products, Advanced Drainage Systems (ADS) has been a leading materials supplier for the land development industry. The company's commitment to excellence was most recently recognized by the Plastics Pipe Institute, where ADS was honored with a Project of the Year award for the Hugh K. Leatherman, Sr. Terminal in North Charleston, SC. Since coming onboard as a Diamond-level sponsor in 2018, ADS has been actively involved with LDDI both inside and outside of the classroom.

Sandy Camargo provided in-person guest lectures for each class during the fall 2019 semester, and even adapted his presentations to a virtual format for delivery amidst the challenges of the spring 2020 semester. Sandy and David Camden also mentored several senior-level project teams during both the fall and spring semesters during the stormwater module of the course's design project. Outside of the classroom, Jim Clark visited campus during the fall semester to present a case study to members of the Sustainable Land Development Club (SLDC). Perhaps best highlighting ADS' commitment to LDDI students, for the second consecutive year, the company brought a truck full of their innovative products to campus for students to observe, study, and ask questions about. Of the company's involvement with LDDI, **David** offers, *"As a Virginia Tech CEE alumnus, I'm thrilled to have an opportunity to get back on campus and engage with the students. LDDI is the gold standard for connecting students with professional practice, and for a product supplier like ADS the exposure that we get to the next generation of engineers is invaluable. While ADS' involvement with LDDI obviously differs from that of a consulting engineer, ultimately we're all doing our part to improve the educational experience for LDDI students."*



Bohler Engineering

With 26 locations from New England to Texas, Bohler's team of driven professionals provides consulting and site design services to developers and their partners across commercial, institutional and residential real estate sectors. Bohler is consistently partnering with clients to create opportunity for high-profile projects, such as the Hawk apartment complex in Charlotte, North Carolina and the Fields at RFK Campus in Washington, D.C. The company's Raleigh and Charlotte offices were also recognized as a 2019 Best Employer in North Carolina by Business North Carolina.



Bohler has been a sponsor of LDDI since 2007. Brett Buckland and Michael O'Shaughnessy serve as active members on the Advisory Board, and Charlie Yowell serves as a life member of the Board. Bohler provided mentors for both the fall 2019 and spring 2020 offerings of the senior design course, and representatives from the company frequently visit campus to present at Sustainable Land Development Club (SLDC) meetings and to attend events, including LDDI Career Nights and the CEE Career Fair.

In 2019, Bohler hired three full-time graduates and three interns from the LDDI program. **Matt Koop**, one of the three hires, had this to say of the program: *"The biggest strength of the LDDI program is that each course builds on the knowledge gained in previous courses, while also expanding the overall breadth of education. I didn't realize how much I learned in my four years until I compared my experience with entry-level engineers from other universities. The combination of industry experience and desire for student success in the professional world makes the LDDI program second to none. When applying for full-time positions, I only applied to firms that sponsor LDDI, like Bohler, because I knew they had a good reputation in the industry."*

Bowman Consulting

Bowman Consulting is celebrating its 25th year in 2020, and from its humble beginnings with an office of only five people located in Fairfax, Virginia the firm has grown to 700 employees with 37 offices spanning the United States, including locations in Chicago, Austin, Denver, and Phoenix. In addition to providing a full spectrum of civil engineering design services, the firm also provides its clients with planning, landscape architecture, surveying, and environmental consulting services. This past year, Bowman Consulting provided significant engineering, survey, and landscaping services for the redevelopment of National Landing, formerly known as Crystal City in Arlington, Virginia. Additionally, Bowman Consulting was ranked #154 on Engineering News Record's listing of the Top 500 Design Firms. The firm was also recognized as #11 on the Washington Business Journal's ranking of the largest engineering firms in Greater D.C.



Bowman Consulting has been a sponsor of LDDI since 2007, with Principal Roy Waugh serving as a life member on the LDDI Advisory Board and Bill Pyle currently serving as an active member of the Board. Firm President Gary Bowman has been one of LDDI's strongest advocates since the program's infancy, and continues to support the program through his personal contributions and commitment of company resources. Bowman is actively engaged in many aspects of LDDI, including mentoring the senior design course, which the firm participated in during both the fall 2019 and spring 2020 semesters, and is a fixture at the LDDI Career Night and CEE Career Fairs.

Camilio Apolinar, CEE Class of 2013, offered, *"the biggest strength of the LDDI program is that not only does it provide strong academic course work but also real life experiences by connecting students with employers to provide guidance on how to apply what was learned during the classes. This is definitely a major strength of the program."*



Concrete Pipe and Precast

With a corporate philosophy that people are the heart of its business, Concrete Pipe & Precast, LLC (CP&P) serves the construction industry with concrete pipe and precast products in the Mid-Atlantic and Southeastern United States. As a company, and as individuals, CP&P values integrity, relationships and mutual respect, holding themselves accountable to their customers and employees by honoring their commitments, providing results, and striving for the highest quality in their products each and every day. Over the past year, three of the company's thirteen plants received National Precast Concrete Association Quality Merit awards, with four plants receiving safety awards from the National Precast Concrete Association. Over the past year, the company has provided concrete on several high profile projects, including a 21-mile, three billion dollar I-66 express lane project in Northern Virginia, Facebook Henrico's 175-acre data center project in Richmond, and the Purple Line light rail project connecting the I-270 corridor to I-95 in Maryland.



An LDDI sponsor since 2018, CP&P remains active through events such as on-campus product exhibitions and after-hours Sustainable Land Development Club (SLDC) presentations. A student panel, facilitated through LDDI, also provided input on CP&P's recent website redesign. While CP&P does not aggressively recruit LDDI graduates, the company approaches their involvement with LDDI as an opportunity to educate the next generation of land development leaders by enhancing their knowledge and understanding of reinforced concrete pipe and the precast concrete industry. **Lucy Travers**, CEE class of 2020 outstanding senior, offered, *"While president of SLDC, I attended a tour of CP&P's Roanoke, Virginia facility where I saw what was involved in designing, making, and testing concrete. Their prominent involvement with LDDI is best demonstrated with in their on-campus product exhibitions, which students always enjoy the opportunity to see the innovative products up close."*

Pennoni

Pennoni is a multidisciplinary firm, including civil engineering, landscape architecture and planning, MEP, and survey, with more than 1,200 professionals serving the needs of clients around the globe. In the past year, Pennoni has worked on a breadth of land development projects including a planned residential student housing project in Blacksburg and the Comcast pedestrian tunnel in Philadelphia, which connects the SEPTA commuter rail system with the new 60-floor Comcast Technology Center, the tallest building outside of Manhattan or Chicago. Pennoni ranks #16 on the Virginia Business Magazine's 2020 Top Architecture and Engineering Firms List and #21 on the Washington Business Journal's ranking of the largest engineering firms in Greater D.C. Pennoni has also been active in LDDI over the past year, with Regional Vice President Sue Wolford serving on the LDDI Advisory Board as the Vice Chair and stepping into the Chair role beginning this spring. Wolford as well as Laura Hall have made multiple trips to Blacksburg this past year in support of student club activities and career fairs. Pennoni also served as CEE 4274 design project mentors during the fall 2019 and spring 2020 semesters.



Pennoni has been a sponsor of LDDI since 2011, and has hired several recent graduates and interns from the LDDI program. One of those recent interns, **Akul Mehra**, CEE Class of 2021, stated, *"my internship confirmed my decision to focus in land development and I have never looked back. The topics and concepts I learned at Pennoni were reinforced in the LDDI courses I have taken over the past year. My internship experience gave me a taste of the industry and introduced concepts that I will be seeing every day for the rest of my career."*

Platinum Level

AES Consulting Engineers

Founded in 1980, AES Consulting Engineers (AES) provides land development design services from offices located in Richmond, Williamsburg, and Chesapeake, Virginia. AES has been a sponsor of LDDI since 2007, and Graham Corson currently serves as an active member of the LDDI Advisory Board. Firm President Arch Marston also serves as a life member on the Board. In addition to civil site design services, AES provides landscape architecture, surveying, land planning, and municipal utilities design. The firm attracts LDDI graduates by providing the opportunity to work on interesting, high-profile projects like the Woods of King's Creek, a large, 213-lot subdivision in York County, Virginia. AES provided site design services that included multiple stormwater management facilities, an on-site sewage pump station, and an amenity park. Corson and other members of the AES team are regular attendees at Virginia Tech CEE Career Fairs, LDDI networking mixers, and after-hours SLDC functions.



Last year, AES hired two LDDI graduates, one of whom, **Barrett Terrell**, is a former president of the SLDC. Barrett participated in LDDI's inaugural "Young Professionals' Panel," an event that invited recent LDDI graduates back to campus to speak with current students. Regarding his participation on the panel and overall impressions of LDDI, Barrett stated, *"The biggest strength of LDDI is the intentional interaction between practitioners and students. At Virginia Tech, I had opportunities to interact with professionals in class, at SLDC meetings, and at LDDI sponsored networking events like the Career Night Mixer, where I met my current employer, AES. The practitioner involvement within LDDI developed my soft-skills and enthusiasm for the land development industry to compliment the technical skills gained in the classroom. LDDI was a springboard for my career and exponentially accelerated my development as a young engineer at AES."*

ATCS

ATCS is a professional consulting firm dedicated to providing comprehensive, multidisciplinary services including land development, transportation planning and design, traffic engineering, construction management and inspection, surveying, and other civil and environmental engineering services. Headquartered in Herndon, Virginia, the firm has eight offices across Virginia, Maryland, North Carolina, and Pennsylvania. In 2019, ATCS was recognized as #8 on the Washington Business Journal's ranking of the largest engineering firms in Greater D.C.



ATCS has been a Platinum-level supporter of LDDI since 2016, and VP/Operations Manager Kevin Siegel is an active member of the LDDI Advisory Board. Siegel and Richard Barnes, both located in ATCS' Newport News office, are frequent mentors in CEE 4274 and frequent attendees at LDDI Career Night mixers and the CEE Career Fair. ATCS consistently brings interesting projects into their CEE 4274 mentoring role, drawing from a broad portfolio of projects across Virginia and beyond. These projects include a lower school addition to the Hampton Roads Academy in Newport News, Virginia, for which ATCS recently provided a broad spectrum of services including site survey, civil and landscape design, and construction phase services. The firm is currently working on the preliminary planning and engineering phase of a project in the City of Fairfax, Virginia that features eight residential elevator condos on top of a retail podium building, with 65 urban townhomes. To date, ATCS' services have included planning and preliminary engineering, color renderings, public hearings, and coordination with the Planning Commission and City Council.

christopher consultants

christopher consultants, ltd. (christopher) was founded in 1982 and is a full service civil engineering, surveying, planning, and landscape architecture firm headquartered in Fairfax, Virginia with five additional offices located in Virginia and Maryland. In 2019, christopher's St. Lawrence Church project was awarded a Fairfax County Land Conservation Award, recognizing outstanding efforts in employing responsible land disturbance techniques and good construction practices to protect the properties and resources of Fairfax County. christopher's Mundo Verde Bilingual Charter School also added to its distinguished list of honors and awards a Merit Award for Excellence in Architecture (AIA) and Top 12 Most Beautiful Schools in America (Business Insider). christopher's current portfolio of projects includes the Central Records Complex in Winchester and the North Potomac Yard redevelopment and overhaul in Alexandria, for which the firm is providing surveying, civil engineering, planning, landscape architecture, and arborist services.



A designated small business under Virginia's SWaM program, christopher has been a proud sponsor of LDDI since 2007. Principal Andy Gorecki currently serves on the LDDI Advisory Board. christopher also regularly mentors the senior design course and attends the LDDI Career Night and the CEE Career Fair. The firm's involvement with LDDI has helped them recruit ten full-time employees as well as interns from the program, including some in upper management. Of christopher's involvement with LDDI, **Katie McDaniel**, CEE Class of 2011 and senior-design course mentor, states, *"It has been so rewarding to participate in the LDDI program as a professional after having completed the class as an undergraduate. I am constantly impressed by the creative ideas and solutions that the students develop without having prior experience in the industry. The senior design class final presentations are always a highlight because the students do such a good job of creating an engaging presentation to showcase what they have developed and learned over the semester."*

Clark Nexsen

Founded in 1920, Clark Nexsen believes partnership – with their clients, with their colleagues, and with their communities – is fundamental to the effective pursuit of transformative design. The firm's architects and engineers provide design solutions in a wide range of markets, with their clients benefitting from a century of design practice. Clark Nexsen is consistently recognized as a leading design firm, and the past year was no exception as it was named the 2020 Design Firm of the Year by Engineering News Record (ENR) Mid-Atlantic. The firm also recently received an American Council of Engineering Companies (ACEC) Virginia Engineering Excellence Honor Award for the Nansemond Parkway Expansion Phase II in the City of Suffolk. For their design expertise and innovation on institutional projects, the firm was recognized with the IIDA Carolinas DesignWorks Best Multifamily Housing Project for the Craven and Crowell Quads renovation project at Duke University. The firm also received a Student Housing Business Innovator Award for Best New Development for their work on the campus of Virginia Commonwealth University.



CLARK NEXSEN

Clark Nexsen has been a sponsor of LDDI since 2011, and Allyson Monsour currently serves on the LDDI Advisory Board. Allyson and LDDI graduate Lewis Hutchins routinely serve as design course mentors, and during the spring 2020 semester, John Keenan also participated as a student mentor in LDDI's Municipal Engineering course. **Daniela Charles**, CEE Class of 2020, was a student on the team John mentored, and offered, *"John provided all the necessary stepping stones for us to succeed in creating our own solution for the class project. He provided assistance to help us overcome the challenges we faced, and was a great mentor who also provided us with knowledge about the project beyond just the scope of our assignment."*

Dewberry

Established in 1956 and headquartered in Fairfax, Virginia, Dewberry is a leading, market-facing firm with a proven history of providing multidisciplinary professional services to a wide variety of public- and private-sector clients. Engineering News-Record



Dewberry®

recognized Dewberry for its continued achievement this past year, naming it the Top Design Firm of the Year (Southeast) and recognizing the firm's work with Best Project Award in the Residential/Hospitality Category (Mountain States) for the Gaylord Rockies Resort and Convention Center, Aurora, CO. The Virginia Chapter of the American Council of Engineering Companies also recognized Dewberry with a Merit Award for its work on I-64 improvements in Newport News. Boasting more than 2,000 employees at more than 50 locations, Dewberry has been a proud sponsor of LDDI since 2007, hiring approximately 15 graduates and interns in the past year.

Throughout the company's time as a sponsor, Dewberry has been involved in nearly every aspect of LDDI. Skip Notte and Cameron Palmore currently serve on the LDDI Advisory Board, with Cameron also serving as Co-Chair of LDDI's Curriculum and Course Enhancement Committee (CCEC). Skip is a frequent guest speaker in multiple CEE courses and ASCE student chapter meetings, and since 2012, he has led one of LDDI's hallmark Practitioner Involvement events, the spring semester Design Charrette and Competition.

Dewberry recruits heavily across all disciplines within Virginia Tech CEE, including LDDI. Former LDDI student **Michelle Rosenberger** states, *"During my time at Virginia Tech, I completed four LDDI courses. I found the design course to be immensely helpful in that it gave me and my team members the opportunity to understand the design process through trial and error and collaboration. As opposed to just studying academic materials, having hands on experience with a site gave me insights that I use in my work every day."*

Draper Aden Associates

Founded in 1972, Draper Aden Associates is a full-service engineering firm including civil engineering, environmental services, geotechnical engineering, structural engineering, surveying, and aerial mapping services, with offices located across Virginia and North Carolina. They have a long-standing tradition of providing site planning and engineering services for projects on Virginia Tech's campus and throughout Blacksburg such as Virginia Tech Foundation's Gilbert Street mixed-use redevelopment project located near the intersection of Prices Fork Road and Main Street. Their land development portfolio also includes work for the Department of Defense, most recently for the National Museum for the US Army in Fort Belvoir, Virginia. Last year they were recognized by the American Council of Engineering Companies (ACEC) with the Virginia Honor Award for their work on the Hardywood West Creek Brewery in Goochland County, just west of Richmond.



Draper Aden Associates

Draper Aden and Associates has been a sponsor of LDDI since 2007 and remains active through participation in Career Nights and class presentations. Additionally, President and CEO, Jeff Lighthiser, serves as a life member of the Advisory Board along with Caleb Hurst who is an active member. In the past year, Draper Aden Associates has hired five LDDI students for full-time or internship positions.

Dan Peets, CEE Class of 2017, shared *"LDDI blends faculty members possessing relevant practical experience with networking opportunities with industry mentors to create a well-rounded student experience. The replication of civil engineering industry through the use of relevant design programs and collaborative design teams is a true differentiator for LDDI graduates. Additionally, the senior design course not only teaches you design but also the level of detail that is appropriate given the stage of the project."*

Edens Land

Edens Land, founded in 2004, is a real estate development firm located in Durham, North Carolina. Utilizing in-house design and consulting expertise, Edens specializes in contracting and entitling land for others and the development of master-planned residential projects for regional and national homebuilders. In addition, the company has recently launched a rental-only neighborhood concept, Edens Land Communities. These uniquely designed communities are heavily amenitized, environmentally friendly, and focused on the outside environment and overall well-being of its residents.



2019 marked the company's second year as an LDDI Platinum-level sponsor, and firm president and proud Hokie alumnus Jarrod Edens has twice served as a mentor in LDDI's senior design course. During the fall 2019 semester, the student team mentored by Jarrod was invited to present at LDDI's 2020 winter meeting. The opportunity for a student team to present at an LDDI meeting is a great honor and demonstrates an immense amount of work by the students. It also inherently reflects an investment of time, patience, and strong technical guidance on the part of the mentor. Allie Zuras, CEE Class of 2020, was a member of the team mentored by Jarrod and invited to present at LDDI's 2020 winter meeting. Of Jarrod's mentoring and the involvement of Edens Land in LDDI, Allie states, *"Jarrod's mentorship style created an atmosphere that fostered growth throughout the duration of the project – a townhouse development in Durham, NC. He maintained a perfect balance by pushing my team to critically think through each learning module while still providing resources and constructive criticism during our weekly meetings to help us along the way."*

GORDON

Founded in 1976, GORDON is an award-winning, multi-disciplinary design firm specializing in urban design, mixed-use, commercial, and government facility development. The firm serves federal government clients including the Department of Veterans Affairs, U.S. Army Corps of Engineers, and National Institutes of Health, as well as private developers in the Washington D.C. Metro region. Providing its clients with a full complement of civil engineers, land planners, landscape architects, surveyors, and security professionals, in January, the firm was recognized as the Sustaining Small Business of the year by the Society of American Military Engineers (SAME) D.C. Post. The firm was also recognized as #15 on the Washington Business Journal's ranking of the largest engineering firms in Greater D.C. Proudly employing more than 20 Virginia Tech alumni, GORDON has been a sponsor of LDDI since 2007. Firm COO Bill Junda served as Chair of the LDDI Advisory Board from April 2019 through April 2020, and remains a life member of the Board.



GORDON participates in numerous LDDI functions, including CEE 4274 mentoring, SLDC meetings, and networking mixers. This breadth of involvement grants the firm front-line access to LDDI students, and in 2019 the firm hired two full-time graduates of the program and two summer interns. This year, the firm will also welcome two additional LDDI full-time hires and two interns. Ali Beisner, class of 2019, shared, *"I think the CEE department does a great job to connect students with employers – LDDI goes even further. I was connected with GORDON at an LDDI-sponsored networking mixer. The environment was perfect to help break the ice before the CEE career fair, and it was at the mixer that I ended up in a conversation with a Director from GORDON. This helped facilitate a connection with the GORDON recruitment team at their booth the next day at the career fair."*

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J2 Engineers

J2 Engineers, founded in 2007, is built to be different: a different approach to engineering and landscape architecture, a different employer for talented employees, a different niche in the marketplace. J2 emphasizes a positive work culture to meet client goals through excellence in engineering. J2 is a Zweig Best Firms to Work For 2019 and 2018 and have a Best of Loudoun Engineer recognition. The firm's project portfolio features both private development and public facilities. Two signature projects from the past year, both located in Leesburg, Virginia, include additional housing, a daycare expansion, and recreational amenities at the Howard Hughes Medical Institute, a state-of-the-art medical research campus, and the North Star School, an alternative and adult education facility.



J2 is a dedicated LDDI sponsor since 2007, and Jeff Gilliland, Principal of J2, serves as a life member and Vice-Chair of the Advisory Board. J2 remains active through class presentations, facilitating the Value Engineering Workshop for the Sustainable Land Development Club (SLDC), mentoring senior design project teams, and attending the LDDI Career Nights and class presentations. This active participation positions yearly hires for the firm, including five full-time and intern positions this year with students from the LDDI program.

Alex Wells, CEE Class of 2017, shared, "The LDDI program was instrumental in connecting me with my current employer J2. I was first introduced to Jeff during one of his presentations for SLDC. Afterwards, I reached out to Jeff, and he was very responsive, agreeing to meet with me a couple weeks later. This experience is what LDDI is all about. Through LDDI courses and SLDC, I was connected to Jeff without jumping through the hoops of career fairs and online applications. For me, this was invaluable and one of the best aspects of LDDI."

Kimley-Horn

Kimley-Horn is one of the nation's premier planning and design consulting firms. With more than 4,200 staff members in 90+ offices across the U.S., the firm offers full services in a wide range of disciplines. The firm has been repeatedly included on Fortune's 100 Best Companies to Work For list, and in 2020,



Fortune also recognized the firm as the top Workplace in Consulting and Professional Services (Large). Kimley-Horn's portfolio includes serving both public infrastructure and private development with the full suite of civil engineering, planning, and landscape architecture services. Two signature projects from the last year include transportation planning and civil engineering design services for the new Las Vegas Raiders stadium and engineering and construction administration services for Atlantic Park, a mixed-use project in Virginia Beach.

Kimley-Horn has been a sponsor of LDDI since 2007. Derrick Cave, Principal and Senior Vice President prior to retirement this spring, is a life member on the LDDI Advisory Board and is joined by Kyle Bollinger as an active member on the LDDI Advisory Board. Kimley-Horn also remains active on campus participating in the LDDI Career Night, LDDI Young Professionals Panel, and mentoring the senior design course. In the past year, the firm hired approximately 15 LDDI students for full-time or internship positions. Former LDDI student and class of 2017 graduate **Jordan Brooks** shared, *"The experience that I came to Kimley-Horn with as a Virginia Tech graduate compared to that of my peers that graduated from a different program was like night and day. I was able to be helpful to my team almost immediately, jumping into CAD and productively working on plans during my first week. Most graduates who come from other colleges and universities end up needing more investment of someone else's time to learn how things work. The experience that students gain through LDDI's senior design course is invaluable."*

Maser Consulting

Maser Consulting P. A. is a privately owned, multi-discipline engineering firm with a unique balance of public and private sector experience. Committed to customer service and accountability, Maser Consulting's experienced staff of licensed engineers, planners, surveyors, landscape architects and environmental scientists have a proven ability to add value to the community by delivering quality services and strategies needed to meet its clients' undertakings. Established in 1984, the firm has offices nationwide and has consistently been recognized by Engineering News Record as one of its Top 500 Design Firms, and ranks on The Zweig Group's Hot Firm List of fastest growing companies.



Maser Consulting has been a proud sponsor of LDDI since 2012, and Regional Geographic Discipline Leader, Jonathan Jolley is an active member of the LDDI Advisory Board. Maser Consulting currently employs more than a dozen Virginia Tech alumni, including three graduates of the LDDI program, and often provides mentors in LDDI's senior design course.

McAdams

McAdams is a full-service land planning, landscape architecture, civil engineering and geomatics firm located in Durham, Raleigh and Charlotte, North Carolina and Dallas-Fort Worth, Texas. Comprised of more than 250 professionals, McAdams has built its reputation throughout the industry over 40 years by delivering unmatched expertise and unwavering commitment to clients in a variety of markets including municipal, education, healthcare, as well as commercial and residential development. 2019 was a year of achievement for the firm, receiving Zweig "Best Place to Work" and "Hot Firm" awards, recognition as PENC Triangle Chapter Outstanding Employer, and winning Office Development of the Year for the One Glenwood Building. McAdams has also been active in LDDI over the past year, with Rob Reddick, Director of the Charlotte Region, and Jonathan Woodard serving on the LDDI Advisory Board. Jonathan and several of his McAdams colleagues also served as CEE 4274 design project mentors during the fall 2019 semester. Prior to the cancellation of such events due to the COVID-19 pandemic, McAdams was slated to serve as hosts for LDDI's first ever student field trip to Charlotte.



McAdams has been a sponsor of LDDI since 2018, and currently employs about 20 Virginia Tech alumni, including several recent graduates from the LDDI program. One of those recent graduates, **Diana Doan** stated, *"During my time at Virginia Tech, I completed the junior-level course as well as Sustainable Land Development, and the senior-level design course. These courses helped prepare me for my current position by teaching me how to use design tools like Civil 3D, as well as providing plenty of real life exposure to topics such as erosion & sediment control and stormwater management and conveyance. LDDI helped me tremendously within my current job, and nearly everything that I have learned through all of my LDDI classes has been applicable in some way while working at McAdams."*

Timmons Group

Timmons Group has a long-standing tradition of providing excellent site engineering and planning services for thousands of projects across the United States. Most recently, Timmons Group provided civil engineering and landscape design services for TopGolf in Richmond, which includes a miniature golf course only found at two other locations nationwide. Additionally, in the past year, Timmons Group provided site design, environmental services, traffic analysis, and more for 600 Canal Place in downtown Richmond, a 20-story building, home to Dominion Energy. As an Engineering News Record's top 500 design firm for over 25 years, Timmons Group has also ranked on Inc. 5000's Fastest-Growing Companies in America list for the last four years.



Joining as a sponsor in 2017, Timmons Group remains active in the many facets of LDDI. Josh MacDonald is joined by life-member Mark Richardson, Principal, on the Advisory Board. Josh also serves as the Practitioner Involvement Committee Chair and worked diligently to organize an industry panel representing the variety of disciplines involved in a land development project, which was unfortunately postponed last semester due to COVID-19. Lastly, Timmons Group mentored one of the senior design teams that presented at LDDI's winter meeting in Northern Virginia. Timmons Group has hired more than 10 LDDI students for full-time and intern positions in the last year, including **Sam Wilson**, class of 2019. When interviewed about his experience with LDDI, Wilson stated, *"One of the best things LDDI provided me was an opportunity to learn about land development and network with professionals in the field. I attended presentations by LDDI sponsors that showcased projects, presented studies, and hosted workshops on all facets of land development that helped prepare me for the job market. The first job connection I made was at the LDDI Career Night mixer which helped me secure my first internship, and a full-time position the following year with my current employer, Timmons Group."*

Townes Site Engineering

LDDI welcomed Townes Site Engineering as the newest platinum sponsor in 2019. For over 40 years, Townes Site Engineering has provided multidisciplinary engineering services including civil engineering, land planning, surveying, environmental services, and construction administration to the Mid-Atlantic region. Headquartered in Midlothian, Virginia just outside of the City of Richmond, the firm's project portfolio includes residential, commercial, and industrial development projects. In the past year, Townes Site Engineering provided civil engineering, surveying, and environmental services for Virginia ABC's new headquarters located in Hanover County, Virginia consisting of a 315,000-SF warehouse and 95,000-SF office. Townes also handled road and utility infrastructure improvements to the I-295/Pole Green Road corridor in support of this project. In Chesterfield County, Virginia, Townes Site Engineering provided civil engineering, surveying, environmental permitting, geotechnical investigation, and construction materials testing for The Townes at Swift Creek. This project consisted of 300 townhome lots and a clubhouse, all permitted/constructed as one phase. Both projects are currently under construction and slated for completion later this year.



Jason Wilkins, Vice President and Director of Design and Land Development, is an alumnus of Virginia Tech's civil engineering department. When asked about Townes Site Engineering's recent sponsorship of LDDI, Jason shared, *"I'm always excited to reconnect with Virginia Tech's CEE department, and the LDDI program provided an opportunity to do so in the professional realm in which Townes operates. I'm impressed by the suite of course offerings in the LDDI curriculum, many more than were available during my time as a student at Virginia Tech! I look forward to increasing Townes' and my own personal involvement in LDDI over the coming year."*

Tri-Tek

Tri-Tek Engineering was founded in 1988 by Virginia Tech alumni Kevin Murray and Ted Britt. To this day, both remain actively involved in the firm's projects and are personally accessible to their clients. Tri-Tek believes that "Doing things according to plan" is not just a slogan, it's a reflection of the firm's commitment to client service, creative design, and professional integrity. Headquartered in Herndon, Virginia, the company provides a wide array of civil and environmental engineering services for both public and private clients. Over the past year, Tri-Tek provided professional design services on a variety of development projects, including Flagship Carwash at One Loudoun. The project includes a new 55,000-SF Flagship Carwash building with two "state-of-the industry" wash tunnels, a customer lounge, and multiple detailing bays. The site also features a 15,000-SF mixed use building with an anticipated grand opening in mid-2021. Within the residential development sector, their Miller's Reserve project in Purcellville comprises 21 single-family lots including 17 cluster lots and 4 large estate lots that capture views of the Catoclin Mountains and nearby stream valley. The subdivision incorporates numerous low-impact development principles resulting in preservation of the historic farm structures, wetlands, forests, and large tracts of open space.



Tri-Tek Engineering has been an LDDI sponsor since 2011, and co-founder Kevin Murray is an active member of the LDDI Advisory Board and prior Chair of LDDI's Practitioner Involvement Committee. Tri-Tek frequently provides mentors for LDDI's senior design course, and representatives from the firm are regular attendees at the LDDI Career Night and the CEE Career Fair. Former LDDI student **Doug Wolfe** commented, *"LDDI provided a unique learning experience combining research, problem solving, teamwork, organization, and delegation principles that conveyed how engineering teams operate in the real world and prepared me for my career at Tri-Tek"*.

WithersRavenel

WithersRavenel is the largest employee-owned, multi-disciplinary design firm located solely in North Carolina, specializing in the planning, design, and construction of public and private projects. The firm offers expertise in environmental engineering, geomatics, land development and planning, landscape architecture, construction administration, stormwater, utilities, and funding and asset management. Signature projects from the last year include Chatham Park, a 7,000-acre master planned community with both residential and non-residential components west of Raleigh, North Carolina, and Pleasant Park in Apex, North Carolina, a 92-acre regional and destination park with both passive and active recreational areas. WithersRavenel has been recognized for its success with inclusion on Engineering News Record's Top 500 as well as receiving multiple CX-cellence Awards for Client Experience and PSMJ Premier Awards for Client Satisfaction.



WithersRavenel joined LDDI as a Platinum sponsor in 2018, and has hired four LDDI students for full-time and internship opportunities in the last year. Brock Storrusten, Chief Growth Officer for Private Sector, serves on the LDDI Advisory Board. The firm is active in the program through participation in the LDDI Career Night, CEE Career Fair, and student mentoring including the senior design course in previous academic years. **Michael Jeska**, CEE Class of 2018, took all five LDDI courses during his time and Virginia Tech. He offered, *"LDDI teaches students the importance of team coordination, design iteration, and project presentation that is applied every day in their post-college careers. The curriculum lays a foundation of civil engineering knowledge for students to build upon during their internship and full-time positions. Additionally, LDDI places an important focus on meeting and interacting with industry professionals through the Design Charrette, Career Nights, and senior design course, which teaches students how to present ourselves in future business situations."*

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