

# The Land Development Design Initiative (LDDI) 2017 Annual Report



LAND DEVELOPMENT  
DESIGN INITIATIVE

## **LDDI in the News!**

Earlier this year, LDDI contracted with PR firm Commonwealth Partnerships as part of an ongoing campaign to improve awareness of LDDI, both inside and outside of Virginia Tech. One result of this campaign was articles about LDDI appearing in six different publications around the state. We are proud of these pieces, and appreciate the contributions of LDDI members. We hope you'll take the time to check out these articles, and they are referenced, below, for your convenience:

[Preparing Students for Land Development and Design](#) – Civil & Structural Engineering News, January 2017. LDDI Contributors: Randy Dymond, Jeff Lighthiser

[Leading in our Region](#) – Valley Business Front, January 2017. LDDI Contributor: Jeff Lighthiser

[Land Development Program at Virginia Tech Helps Hampton Roads Companies](#) – Inside Business The Hampton Roads Business Journal, January 2017. LDDI Contributors: Randy Dymond, Dave Parker, Randy Royal, Erin Burdick, Arch Marston

[Academic and Business Partnerships Can Address Labor Shortages](#) – Williamsburg / Newport News Daily Press, April 2017. LDDI Contributor: Arch Marston

[Academic and Business Partnerships Can Address Labor Shortages](#) – Richmond Times Dispatch, May 2017. LDDI Contributors: Jeff Lighthiser, Andrew Browning

[Celebrating Academic and Business Partnerships at Virginia Tech](#) – Roanoke Times, June 2017. LDDI Contributors: John Neel, Dwayne D'Ardenne

## Program Coordinator's Message

Welcome to the 2017 Land Development Design Initiative Annual Report! I hope that you will enjoy reading this report as much as Assistant Program Coordinator Kevin Young and I have enjoyed preparing it. Each year, this report provides an opportunity for us to reflect on the program's activities and achievements over the previous twelve months. Now entering its eleventh year, LDDI continues to be recognized as the national leader in undergraduate land development design education, and the past year has been one of continued growth and excitement. Before going any further, I would like to recognize and thank some of the individuals and organizations, whose contributions of time and resources, have enabled the success and accolades that the LDDI program enjoys. To the 32 individuals currently comprising the LDDI Advisory Board, I extend sincere gratitude on behalf of all of the students whose lives you so positively impact with your contributions to the program. I would like to especially welcome our newest members to the Board – Brett Buckland (Bohler Engineering), Caleb Hurst (Clark Nexsen), and Lance Kilby (Burgess & Niple), all of whom formally joined the Board over the past year. Next, I would like to thank Kevin Young for another year of serving as the LDDI Assistant Coordinator and my right hand man. Many of you reading this have had Kevin as an instructor, and are well aware of his contributions inside the classroom. I can personally attest that Kevin's efforts outside of his instructional duties are equally critical to LDDI's success. Also, I want to thank all of the industry professionals who over the past year have given so generously of their time as student mentors, guest lecturers, field trip leaders, course instructors, and in countless other ways to improve the educational experience of Virginia Tech CEE students. Without the energy and enthusiastic contributions of these individuals, the LDDI program simply would not exist. Finally, I would also like to thank those industry sponsors of LDDI as the program is mostly financially supported by you and not the university. We have grown this program from an organic model, piece-by-piece, and the sponsors and those who contribute their time are the ones that really make it happen!



Now in its second decade, the LDDI program continues to evolve in an effort to ensure that the next generation of land development engineers are prepared to address the needs of a challenging and competitive industry. Boasting a constituency comprised of nearly 800 industry professionals, and providing Virginia Tech CEE students with five individual land development course offerings each academic year, the current state of the LDDI program exceeds what any of us could have envisioned back in late 2005 when a series of regional outreach meetings were held across Virginia to gauge interest in the establishment of such a program. The past academic year alone saw more than 300 students taking the various LDDI courses! While there may exist some temptation to rest on the laurels and achievements of the past, we know that technology, government regulations, construction techniques, economic trends, and countless other factors are highly dynamic and require us to continually review, reflect, and adapt learning materials and the methods of delivering those materials in the classroom. We've also made dramatic strides in cutting-edge research in the stormwater area of land development over the past several years with a large number of grants, journal papers, and presentations, thereby bringing the latest knowledge directly into the classroom. These unrelenting efforts to continually improve LDDI stem from our primary missions to dramatically improve the educational offerings in the land development arena, involve industry professionals in the university experience of Virginia Tech CEE students, and advance knowledge of land development practice by performing state-of-the-art research.

Within this report, you'll read about LDDI events and activities over the past year, including course offerings, professional networking events, field trips, research activities, and many others. You'll also read about some of the organizations and individuals who have played important roles in the LDDI program over the past year. As you read about these activities and individuals, I hope that you will be motivated to become involved in the LDDI program. There are numerous ways that you can participate in the program and make a real, positive impact on future land development professionals. On page 20 you will find the contact information for myself, Kevin Young, and our Advisory Board Chair and Co-Chair. Please reach out to any of these individuals if you have questions about the program or have ideas for how you would like to become involved.

Best regards,

A handwritten signature in black ink, appearing to read "Randy Buckland". The signature is fluid and cursive, with a large initial "R".

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## Diamond and Platinum Corporate Sponsors

During our 2016-17 fiscal year, Diamond and Platinum Corporate Sponsors contributed over \$88,000 to LDDI. The following section highlights each of these corporate sponsors and their involvement with LDDI.

### Diamond Level:

#### **Bohler Engineering**

Bohler provides consulting services for land development projects. As a strategic partner, Bohler integrates multiple disciplines of civil engineering to simplify the development process and provide clients with the information they need to make smart decisions. At

Bohler, we go above and beyond what is typically expected from a consultant. We take the time to understand our clients' business and are known for our ability to consistently deliver the highest quality product and service in the industry. Bohler has been a sponsor of LDDI since 2007, and Ginger Greunke, Director of Talent Acquisition, Charlie Yowell, Manager of the Raleigh, NC office, and Brett Buckland of the Charlotte, NC office currently serve on the LDDI Advisory Board.



#### **Bowman Consulting**

Bowman Consulting was founded in 1995 with 5 people in Fairfax, VA. Since that time, the firm has been recognized as one of the fastest-growing consulting firms with 33 offices distributed across the United States. They offer services in

Civil Engineering, Planning, Landscape Architecture, Surveying, Environmental Consulting, Transportation, and more. Bowman Consulting has been a sponsor of LDDI since 2007. Roy Waugh, Principal from the Chantilly, VA office, currently serves on the LDDI Advisory Board and served as the Board's Chair during 2014.



## **PENNONI**

Pennoni was founded in 1966, and over the years has grown to employ more than 1,200 professionals serving the needs of clients around the globe. As a multidisciplinary firm, Pennoni's breadth of services includes civil/site, construction services, environmental, geotechnical, landscape architecture and planning, MEP, structural, survey and geomatics, transportation, water resources, and water/wastewater. Pennoni is a Platinum supporter of the LDDI program, and Regional Vice President Susan Wolford, PLA, AICP, LEED Green Associate currently serves as Vice Chair on the LDDI Advisory Board.



## **Platinum Level:**

### **AES Consulting Engineers**

Founded in 1980, AES Consulting Engineers (AES) provides land development engineering design services from offices in Richmond, Williamsburg, and Chesapeake, Virginia. AES provides Civil Site Design, Landscape Architecture, Surveying, Land Planning, and Municipal Utilities Design. AES has been a sponsor of LDDI since 2007. Firm President, Arch Marston, currently serves on the LDDI Advisory Board.



## **ATCS**

Employing more than 200 people across nine offices, 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, environmental sciences, emergency management services, water resources, water/wastewater, and surveying. ATCS has been a Platinum-level supporter of LDDI since 2016.



### christopher consultants

christopher consultants, ltd.(christopher) was founded in 1982 and is a full service civil engineering, land planning, surveying and landscape architecture firm headquartered in Fairfax, Virginia and serving the Washington DC metropolitan region. In their 35 year history, christopher has had the opportunity to work on many high-profile and award-winning projects in the region and has completed projects throughout the Mid-Atlantic, across the U.S. and around the world. christopher is a designated small business under Virginia's SWaM program. christopher has been a proud sponsor of LDDI since 2007, and Senior Associate Andy Gorecki currently serves on the LDDI Advisory Board.



### Clark Nexsen

At Clark Nexsen, we believe partnership – with our clients, with our colleagues, and with our communities – is fundamental to the effective pursuit of transformative design. Our engineers, planners and architects partner with our clients to shape ideas that transform our world. Our clients benefit from a process forged over more than nine decades of design practice delivering projects that solve real problems. Uncovering innovative solutions is the result of our collaborative process undertaken with our clients to discover truly exceptional ideas. Clark Nexsen has been a sponsor of LDDI since 2011. Caleb Hurst, Senior Civil Engineer in the Virginia Beach, VA office, currently serves on the LDDI Advisory Board.



### Dewberry

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. Established in 1956, Dewberry is headquartered in Fairfax, Virginia, with more than 50 locations and 2,000 professionals nationwide. Dewberry has been a sponsor of LDDI since 2007, and Jack Vega, Vice President, currently serves on the LDDI Advisory Board.



### Draper Aden Associates

Draper Aden Associates was founded in 1972 with an office in Blacksburg, Virginia and now has nine offices located across Virginia and North Carolina. They are a full service consulting engineering firm offering services in site planning and engineering, sustainable design, infrastructure, geotechnical and structural engineering, and more.

Draper Aden Associates has been a sponsor of LDDI since 2007. Firm president and CEO Jeff Lighthiser is a previous Chair of the LDDI Advisory Board and is a Life Member of the Board.



### GORDON

Founded in 1976, GORDON is an award-winning, multi-discipline design firm specializing in urban design, mixed-use, commercial and government facility development. In addition to designing some of the most complex private developments in the Washington DC Metro

region, the firm serves federal agencies such as the Department of Veterans Affairs, U.S. Army Corps of Engineers, and National Institutes of Health nationwide. GORDON offers a full complement of civil engineers, land planners, landscape architects, surveyors, and security professionals. The firm has been a sponsor of LDDI since 2007 and proudly employs over twenty Virginia Tech alumni. Firm COO Bill Junda currently serves as Chair of the LDDI Advisory Board.



### J2 Engineers

Jim Bishoff and Jeff Gilliland started J2 Engineers in 2007 in a tough economy and a competitively crowded market. They believed so strongly in their vision that despite these challenges, the future of J2 was certain. The pair committed to developing a multidisciplinary staff that could produce the best work for clients, not just completing projects, but taking care to meet their preferences and goals. The firm continues to grow exponentially under their leadership, combining strong talent and successful engineering for a wide variety of projects. Uniquely, the J2 model offers the technology and broad services of a large engineering firm, with the strong





relationships and start-to-finish involvement of a small firm. J2 Engineers has been a sponsor of LDDI since 2007, and Jeff Gilliland is a past Chair and Life Member of the LDDI Advisory Board.

### **Kimley-Horn and Associates, Inc.**

Kimley-Horn and Associates, Inc. was founded in 1967 in North Carolina, and over the past 46 years has grown to include over 83 offices in 25 states. The firm has been repeatedly recognized as a top place to work over the years, and provides an array of engineering and land planning service including transportation, water resources, land development, and more. Kimley-Horn has been a sponsor of LDDI since 2007. Derrick Cave, Principal and Senior Vice President is a Life Member on the LDDI Advisory Board and Kyle Bollinger, Project Manager, serves as an active member on the LDDI Advisory Board.



### **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.

## 2016-2017 General Meetings

Over the past year, LDDI hosted two General meetings. These meetings provide an opportunity to bring our industry partners up to speed on the status of the LDDI program, campus activities inside and outside of the classroom, and immediate and long-term visions for the program. For a number of years, meetings have also provided attendees with continuing education credit, as the meetings featured a number of guest speakers talking about important issues in the industry. The past year, we continued to “bring the show to the people” with both meetings held off campus, one in Richmond and one in Northern Virginia.

On Friday, July 22<sup>nd</sup>, 2016 LDDI hosted a meeting at the Virginia Housing Center at Innsbrook (Glen Allen, VA). The meeting featured a diverse list of attendees, including Virginia Tech students and faculty, industry consultants, homebuilders, developers, representatives from local governments, and product vendors. The agenda included student presentations, an LDDI update, and guest speakers Andrew Basham (Principal, Sky Rock Real Estate Group), Todd Dykshorn (Owner, ADO Architecture Design), Mark Olinger (Director of Planning, City of Richmond), and Tom Rust (Vice President, Pennoni; Virginia Legislator). Meeting attendees were awarded two PDH credits.



*Heather Diez speaks at the January '17 LDDI General Meeting in Lorton*

LDDI's annual winter meeting was held on Friday, January 13<sup>th</sup>, 2017 at the Workhouse Arts Center in Lorton. CEE 4274 students began the meeting with presentations of their semester-long design projects. Following an LDDI update delivered by Dr. Randy Dymond, a panel of guest speakers discussed the Laurel Hill development in Northern Virginia. Guest speakers included Heather Diez (Project Manager, Fairfax County), Dave Bowden (Director of Planning and Development, Fairfax County), Jack Perkins (VP, Elm Street Development), Chris Caperton (Asst. Director, Planning, Fairfax County), and Ava Spece (CEO/President Workhouse Arts Center). As with the summer meeting, attendees were awarded two PDH credits.

## 2016-2017 Financial Summary

During the 2016-2017 fiscal year, LDDI collected revenue of approximately \$156,000 through its corporate sponsorship program and individual donor campaign. This figure is greater than revenue collected during our previous fiscal year, and reflects the support of 36 corporate sponsors. These funds were used to directly support LDDI activities inside and outside of the

classroom. The following describes some of LDDI's major expense categories to which this revenue was directed.

***Instructor Compensation:*** Of the eight LDDI course-sections offered each year at Virginia Tech, the University provides financial support for only four. Private donations to LDDI provide instructor compensation for the remaining four.

***Endowment:*** In an ongoing effort to ensure the long-term sustainability the LDDI Program, the Advisory Board has ramped up efforts to endow the program, including the hiring of a consultant to help identify and approach potential donors to the LDDI endowment.

***Program Expenses:*** Program expenses include support for LDDI's student club, including field trips, travel to service project locations, and social gatherings. This expense category also includes event catering for LDDI general and outreach meetings, publication of the *LDDI Bridges* quarterly newsletter, and past funding of the LDDI student internship program.

***Operations Expenses:*** Operations expenses include general overhead costs such as postage, printing and copying, website development and maintenance, telecommunications, and University Foundation fees.

***Travel and Meetings:*** LDDI has traditionally hosted two 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.

***Student Support:*** Though none were awarded this past academic year, to date, LDDI has administered a total of ten \$2,000 scholarships. Eligibility for these scholarships is restricted to students who have completed or are enrolled in certain LDDI courses.

## **Curriculum and Course Enhancement**

Prior to creation of LDDI, students at Virginia Tech had only one land development design course offering available to them (CEE 4274, Land Development Design). Today, LDDI funding supports a total of five individual courses focused on Land Development design. These five courses comprise the most comprehensive undergraduate land development design curriculum in the entire country. As a direct result of LDDI's efforts over the past eleven years, we are confident in saying that Virginia Tech CEE graduates have a better foundation for a career in land development design than students from any other university.

We are extremely proud of the work we have done with the help of land development professionals to create a program that is vital to the land development industry, and on behalf of the students benefitting from these courses, LDDI wishes to thank all of our business partners and individual donors without whom our program and curriculum would simply not exist!

The following section briefly summarizes the courses comprising the LDDI curriculum.

### Introduction to Land Development (CEE 3274)

Making its debut during the fall 2009 semester, CEE 3274 – Introduction to Land Development Design quickly became an integral part of the overall LDDI curriculum. Prior to the creation of CEE 3274, no prerequisite existed for LDDI's senior design course, CEE 4274. As a result, students often found themselves overwhelmed in the design course, not having the benefit of previously completing an applied introductory course on the subject matter. Fast forward to 2016, and CEE 3274 had become entrenched not only in the LDDI curriculum, but also in the overall undergraduate CEE curriculum, as it is one of eight courses from which students must complete seven in order to graduate. The popularity of LDDI's junior course has not come without its drawbacks. As a matter of departmental policy, junior-level, introductory CEE courses are capped at a maximum enrollment of 65 students. During the previous 2015-16 academic year, only two sections of CEE 3274 could be taught at full capacity, with more than 60 students left on waiting lists unable to take the course. As CEE 3274 is a prerequisite for CEE 4274, this resulted in a curriculum bottleneck and declining enrollment in the design course. In August 2016, Mrs. Claire White, PE was hired as an Assistant Professor of Practice with teaching assignments in both Civil & Environmental Engineering as well as the University's Real Estate Program. Enabled by the hiring of Mrs. White, the fall 2016 semester marked the first time that two sections of CEE 3274 were offered. LDDI Assistant Coordinator Kevin Young, who regularly teaches both the fall and spring offerings of the course, stated, "I'm thrilled that we're now able to accommodate twice as many students each semester. I'm confident that this will result in more, and better prepared students taking CEE 4274. LDDI is extremely fortunate to have Claire. Her consulting experience, as well as serving as a GTA for multiple LDDI courses during her time as a graduate student, make her the ideal person to take on the additional section of 3274." Two sections of the junior course were also offered during the spring 2017 semester. Young and White coordinated closely, on almost a daily basis, over the past year to ensure that the two course sections remain chronologically on pace with each other. They have also coordinated to hold common time exams across the two sections of the course. Looking ahead, two sections of CEE 3274 will continue to be offered during both the fall and spring semesters.



*The 2016 hiring of Claire White has enabled LDDI to accommodate twice as many students in its junior course*

### Land Development Design (CEE 4274)

CEE 4274 remains tremendously popular despite students being well aware of its demanding workload! Beginning in the fall 2006 semester, and facilitated through LDDI, students taking CEE 4274 have been paired with a professional engineering firm who serves as their mentor throughout the entirety of a semester long design project. LDDI would like to thank the following firms for their time and energy to serve as mentors to CEE 4274 students during the 2016-17 academic year:

AES Consulting Engineers  
 ATCS  
 Bohler Engineering  
 christopher consultants  
 Clark Nexsen  
 Cowen Design Group  
 Dewberry  
 Draper Aden Associates

Gordon  
 J2 Engineers  
 Kimley-Horn & Associates  
 Maser Consulting  
 Pennoni  
 Tri-Tek Engineering  
 Walter L. Phillips



*Jeff Gilliland (J2 Engineers) poses with his CEE 4274 student design team following their presentation at the January LDDI General Meeting in Lorton*

### **Municipal Engineering (CEE 4254)**

CEE 4254 – Municipal Engineering is offered during the spring semester of alternating years, and was last taught during the spring 2016 semester, with an enrollment of 48 students. The 2016 offering of the course was taught by Meredith Jones (Virginia Tech Adjunct Instructional Professor and Vice President of Eden & Associates). Meredith was assisted in course organization and design by James Patteson (Fairfax County Director of Public Works and Environmental Services) and Dr. Randy Dymond (LDDI Coordinator). The course focused on familiarizing students with the role of the municipal engineer, and the important relationship that exists between municipal engineers and the land development industry. The course included many guest speakers and 12 municipal engineering mentors who worked directly with students on projects. Municipal Engineering will next be offered in the spring of 2018, and will be taught by Randy Formica (Director, Engineering and GIS, Town of Blacksburg).

### **Sustainable Land Development (CEE 4264)**

Sustainable Land Development was first offered during the spring 2008 semester as a one credit seminar and was expanded to a three credit course shortly afterwards. The course continues to be very popular with students and the fall 2016 offering was no exception with 52 students taking



the course. It is important to note that enrollment in the course is restricted to only those students with senior standing; however, students from *any* major may enroll. The intent of this arrangement is to introduce various perspectives to classroom discussion and better prepares students for their careers where they will inevitably cross paths with professionals from a myriad of academic backgrounds. The Sustainable Land Development course focuses on the developed site's long term sustainability and preservation of the pre-development quality of its environment. Specific topics include site selection and linkage; neighborhood pattern and design, development impacts on water, air, and soil; microclimate; industrial ecology and materials; energy; and 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) and Earthcraft Communities. Students visit development projects employing innovative, sustainable design features and a number of outside guest speakers give interesting presentations.

### **Advanced Land Development Design (CEE 4284)**

CEE 4284 – Advanced Land Development is offered during the spring semester of alternating years, and was taught during the spring 2017 semester. The course was taught by teams of industry consultants from Bohler Engineering, Draper Aden Associates, and Kimley-Horn & Associates. LDDI wishes to extend our most sincere gratitude to the professionals from each of these companies who gave generously of their time to travel to Blacksburg and teach the class during its scheduled Friday evening – Saturday morning time slot. When CEE 4284 was first developed, the course focused on site grading and ADA requirements, storm sewer design and basin routing, and erosion and sediment control. Students are now being introduced to these topics in CEE 3274 and again, in the context of a design project, in CEE 4274. Through the growth and evolution of the LDDI curriculum, in CEE 4284 we are now able to address the following topics:

- Stormwater quantity issues, including channel velocity/energy requirements set forth in the Virginia RRM regulations
- Stormwater quality treatment, including
  - Low Impact Development strategies and design of structural BMPs
  - Selection and installation of proprietary BMPs
  - Virginia's "Runoff Reduction Method"
- Site selection, due diligence and project entitlements
- The design-build process
- Infill development and development challenges in urban environments
- Security issues in certain developments

Advanced Land Development Design will next be offered in the spring of 2019.

### **Student Impressions of the LDDI Program**

The core mission of LDDI is to produce civil and environmental engineering graduates who are not only aware of the career opportunities in land development, but prepared to hit the ground running in this exciting field. The following are testimonials from both current and former students in the LDDI curriculum.

*"Virginia Tech's LDDI program offers the perfect blend of academic rigor, workplace preparedness, and networking opportunities. Every course in the program provides value, but Land Development Design (CEE 4274) challenged and empowered me more than any other class I've taken at Tech. The research, writing, engineering, design, and presentation of a land development project, aided by regular feedback from a professional mentor, gave me a taste of life as a site/civil engineer. Further, the skills honed in CEE 4274 have allowed me to make immediate, meaningful contributions during my internship. As great as the courses are, however, the people within LDDI are what makes it such a fantastic program. Each professor demonstrates technical mastery of the material, speaks from relevant industry experience, and has invested personally in me during my time in the program." - Dan Peets, CEE '18, intern with LDDI Sponsors Draper Aden Associates and Gay & Neel*

*"While at Virginia Tech, I took the following LDDI courses: CEE 3274 – Introduction to Land Development, CEE 4274 – Land Development Design, and CEE 4284 – Advanced Land Development Design. My overall experience with the program was very rewarding. Looking back on all the courses I took at Virginia Tech, I must say that these three courses were by far my favorite courses to take. These courses were not only the most valuable and rewarding that I have taken, but they were also the most enjoyable because of the manner in which LDDI faculty present technical concepts and make the course material interesting to learn about. Kevin's teaching approach made me very engaged in the material and ultimately sparked my interest in land development. As I graduate from Virginia Tech and go on to work as a Junior Design Engineer for Bohler Engineering, I must give my appreciation to the LDDI program because without this program, I don't know if I would be where I am today." – Brian Hensel, CEE '17, Junior Engineer with LDDI Sponsor Bohler Engineering*

*"Taking the junior Intro to Land Development class, I got my first look into a career path that, at the time, was unfamiliar to me. As I became more involved with the LDDI program, including taking the senior design course, I developed an understanding and appreciation for the vital role that LDDI plays within CEE at Virginia Tech. The knowledge and experience gained in the LDDI courses is invaluable, and allows graduates to hit the ground running in the professional world. I look forward to watching the program grow and move forward.." - John Tedesco, CEE '17, Civil Analyst with LDDI Sponsor Kimley-Horn and Associates*

## LDDI Coordinator Receives Award

In April, LDDI Coordinator, Dr. Randy Dymond, was notified that he had been selected as the 2017 recipient of the University's Alumni Award for Outreach Excellence. With support from the Virginia Tech Alumni Association, the Alumni Award for Outreach Excellence is presented annually to recognize outstanding contributions by a Virginia Tech faculty member who has extended the university's outreach mission throughout the Commonwealth, the nation, and the world. The prestigious award recognizes Dymond's efforts over the past

decade, including first recognizing a need for improved undergraduate land development design education and then working tirelessly to ensure that the LDDI program not only addressed that need, but did so with substantial input from professionals in the land development industry. Under Dymond's direction, the LDDI program has grown to include a general membership comprised of nearly 800 individuals, representing more than 100 different organizations.

Jeff Gilliland (Principal – J2 Engineers) put forth Dymond's nomination for the award, and his submittal packet included letters of support from numerous affiliates of the LDDI program, including Jeff Lighthiser (CEO/President – Draper Aden Associates), who stated, "The strategy of a partnership with private businesses may be an established approach for some university departments. However, it was not common practice in 2006 in the land development sector. Virginia Tech's LDDI program was the first in the nation to create a partnership with land development companies, and to establish dedicated coursework to address the needs of these companies. The program has allowed both private and public sector industry to develop strong ties to Virginia Tech students and faculty, and has inspired many to give back to their profession and their alma mater. Dr. Dymond has been a driving force behind the LDDI program and is certainly worthy of the recognition this award brings."

Dymond will be formally recognized for this award at the university ceremony held on September 10<sup>th</sup>.



*LDDI Coordinator, Dr. Randy Dymond, speaks to attendees at the spring '17 LDDI outreach road show in Charlotte, NC*



## Practitioner Involvement Committee Update

The major objective of LDDI's Practitioner Involvement Committee (PIC) is to develop a strong and sustainable relationship between all sectors of the land development profession and the students within the Via Department of Civil and Environmental Engineering. This mentoring and social interaction helps prepare students for a career in the land development design business and gives them professional contacts. The following describes some of the PIC-supported activities during the 2016-17 academic year.

### Student Club Activities

With the aid of faculty advisors Kevin Young and Randy Dymond, and working closely with the LDDI Advisory Board, the Sustainable Land Development Club (SLDC) brings together students with a common interest in sustainability as it relates to land development design. Senior Dan Peets served as the club's president this year, and was joined by senior Alex Wells who served as the club's Vice President and Service Project Coordinator.



*SLDC students stake out Virginia Tech's Relay for Life Track in April  
(VT CEE alumni will recognize Patton Hall in the background)*

The SLDC coordinated with LDDI over the past year on a number of "standing" events, including fall and spring semester Career Night networking mixers, a football viewing party, an overnight field trip to visit active construction sites, and a design competition/charrette. In April, for the fifth consecutive year, SLDC members provided stakeout surveying of the track for Virginia Tech's annual Relay for Life Event – the largest collegiate Relay event in the entire world!

During the 2016-17 academic year, the SLDC also continued its partnership with Across the Way Productions, the group responsible for organizing the annual FloydFest music festival. From relatively modest beginnings in 2002, FloydFest has grown considerably over the past fifteen years. With its rapid growth, festival organizers encountered numerous challenges, including site layout, shuttling of patrons into and out of the festival grounds, and public safety issues. In past years, SLDC members developed a series of site maps to help festival organizers address these issues. This year, the SLDC worked on the FloydFest site as well as other festivals organized by Across the Way Productions, including the Vintage Virginia Wine Festival and the summer concert series in Roanoke's Elmwood Park.

### Career Nights

This year, LDDI and the Sustainable Land Development Club (SLDC) continued their tradition of hosting a “Land Development Career Night” on the eve of the Civil & Environmental Engineering career fairs. This was the 18th and 19th consecutive semesters that a student-practitioner mixer of this type has been held by LDDI. The event was very well attended in both the fall and spring semesters with a good ratio of students to representatives from various LDDI sponsoring firms. These career nights are beneficial for both the students and practitioners for numerous reasons. It allows the students to learn more about various roles and career opportunities in the land development field. The event also provides an opportunity for students to meet and mingle with prospective employers in a relaxed atmosphere prior to the potentially stressful atmosphere of the career fair. The casual setting of the Hokie House, a local restaurant and bar in Blacksburg, provides opportunities not only for career networking, but for practitioners to reminisce on their time as a student at Virginia Tech.

### Football Viewing Party

During the fall 2016 semester, LDDI and the SLDC hosted their fifth annual football viewing party. These parties provide students with an opportunity to have a good time and blow off some steam, but also to build camaraderie among their peers in the LDDI curriculum. For the second consecutive year, the football team came through with a win for the SLDC party, beating the Pitt Panthers 39-36 in a thrilling game. Knowing how passionate Virginia Tech students are about Hokie sports, the Practitioner Involvement Committee will be working with the SLDC in 2018 to expand these types of social gatherings into basketball season as well.



*Students pause to smile for the camera during the fall '17 SLDC football viewing party*

### Field Trip

In April, LDDI Assistant Coordinator Kevin Young led a group of students on a field trip to Norfolk where they toured a diverse mix of sites lined up by Pennoni's Greg Deubler. “It was great to share some of my work experiences with the students, who were eager to learn. They were very engaged throughout the site visits and asked numerous questions. They really showed initiative by traveling across the state to be on a construction

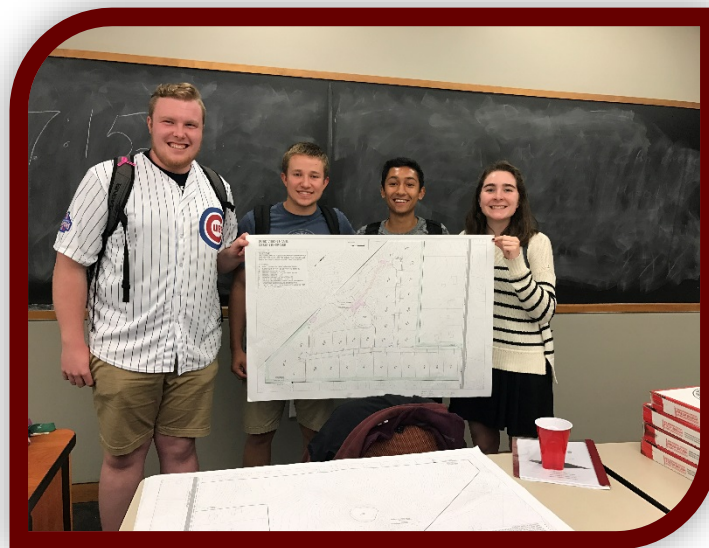


*Greg Deubler (Pennoni) with students on the spring '17 field trip*

site at 8am on a Saturday.” LDDI has long recognized and appreciated the value in getting students out of the classroom and onto active job sites, and this spring’s field trip marks the fifth such voyage out of town. The trip to Virginia’s far eastern reaches exposed students to site conditions that are significantly different than those found on and around the Virginia Tech campus. Many of the students commented on the flat topography, and also took note of the vastly different soils from what they are accustomed to seeing in Blacksburg. Students also had the opportunity to observe the subsurface installation of various stormwater control devices and wet utilities, as well as a mix of erosion and sediment controls and safety practices. CEE junior Ada Tamez de la Garza attended the trip, and she commented on her experience. “This field trip was not only fun, but extremely educational. It helped and motivated me to see what I’m learning in my classes being applied in real life situations, and gave me a better idea of what I want my career to be in the future.”

### Design Charrette and Competition

This spring, LDDI hosted its fifth annual Design Charrette Challenge. Leading the event for the third time, Dewberry’s Skip Notte traveled north from Charlotte to present student teams with a site design challenge. Following a brief introduction to the site and the “client’s” development goals, student teams were given one-hour to work toward a design that met these goals while also adhering to relevant codes and design principles. Dinner was provided to the student participants while their designs were judged by Notte, CEE department faculty members, and Draper Aden Associates’ Kyle White. In total, 24 students participated in the contest, and the top team took home a \$100 gift card to Buffalo Wild Wings! All event participants were given prizes for their efforts. Of the event, White stated, “Not knowing what to expect serving as a judge for my first LDDI Design Charrette, I came away extremely impressed with the student turnout and the quality of their deliverables. The students’ understanding of the land development process was on full display, and their dedication to their future profession was noteworthy. There is no substitute for the highly relevant experience students derive from the LDDI Design Charrette, and I hope to have the opportunity to serve as a judge again next year.”



*A student team displays their winning submittal at the 2017 LDDI Design Charrette and Competition*

## LDDI Students are Recognized

This April, for the third consecutive year, the LDDI Advisory Board recognized some of the outstanding students in the LDDI program. As enrollment across Virginia Tech, and in particular the College of Engineering, continues to increase, it is important to note that most LDDI courses typically have enrollments ranging from 40 - 70 students. There are many outstanding students in the LDDI curriculum, and for a student to truly distinguish his or herself among their peers from within these large class sizes is truly commendable. It is with a great deal of pride that we recognize the following students for the 2016-17 academic year.

**Hokie Stone Award:** This award is given annually to the LDDI student who is as solid as its namesake – a team player whose leadership and personality elevated the performance of all those around him. The recipient of this year's Hokie Stone Award is senior Dan Peets. Dan's personality and attitude frequently lightened the classroom mood during the most challenging parts of the CEE 4274 course, and when his peers in the class needed a chuckle or a words of encouragement, Dan was always there. Dan's technical skills proved integral to the success of his design team, and has also performed exceptionally well in a number of other LDDI courses. Dan is currently interning with LDDI sponsor Draper Aden Associates.

**Leadership in Sustainability:** The Leadership in Sustainability award is given annually to recognize an LDDI student with a commitment to sustainability as it relates to land development design. This year's recipient of the Leadership in Sustainability award is Dan Leber. Early in the fall semester, Dan caught the attention of CEE 4264 (Sustainable Land Development) instructor Dr. Randy Dymond. Dymond comments that, "Dan has shown excellent knowledge and interest in sustainable technologies and design methods through his coursework. His leadership in student groups within the LDDI courses always reflected his drive to improve the sustainable nature of the project." Dan graduated this spring, and is currently working with LDDI sponsor Walter L. Phillips.

**CEE 4274 Female Student of the Year:** This award is given annually to the exceptional female student in the fall and spring offerings of CEE 4274. This year's CEE 4274 Female Student of the Year was chosen to be Cara Kniphuisen. Working under the mentorship of Jeff Gilliland and Bob Brown (J2 Engineers), Cara emerged as a key player on a student design team that was ultimately chosen to present at the 2017 LDDI winter meeting. On working with Cara in CEE 4274, Gilliland states, "It was a pleasure working with Cara on our project for CEE 4274. Through our weekly teleconferences and group meetings, it was evident that Cara was very engaged and had a great understanding of the project goals and technical design requirements. She has a tremendous base to build upon as she moves on to a career in land development. I'm confident that she will excel in her professional aspirations as she has done in the classroom." Having graduated, Cara is now working with LDDI sponsor Draper Aden Associates.

**CEE 4274 Male Student of the Year:** This award is given annually to the exceptional male student in the fall and spring offerings of CEE 4274. During the fall 2016 semester, Josh Dolinger was a member of a student design team mentored by Brett Buckland, Logan Baird, and Steve



Farmartino (Bohler Engineering). Josh's professionalism and attention to detail helped his team earn an invitation to present at the 2017 LDDI winter meeting. Buckland comments, "Josh was a very dedicated student and worker in the CEE 4274 class. He was always proactive in his communication with our mentor team and provided great leadership within the student team, both through his communication and actions. With his ambitions and hard work ethic, we have full confidence that the success Josh has enjoyed in the classroom will translate to the professional world." Josh graduated this semester, and will begin graduate studies at Virginia Tech in the fall.

At this year's award ceremony, we also recognized Meghan Hekl, who over the past year has served as a GTA in multiple LDDI courses, as well as serving as the student representative to the LDDI Advisory Board. Meghan will continue serving as a TA during the coming academic year, during which she anticipates completing her Master's degree under advisor Dr. Randy Dymond.

## Research Committee Update

LDDI's Research Committee was established over four years ago with its primary objective defined as overseeing efforts to conduct and administer independent research 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 further charged with identifying research goals, seeking funding, and providing overall, strategic direction to the broader research team, as well as promoting the pursuit of research within the industry and encouraging the use of LDDI as the vehicle of investigation.

Thus far, a majority of LDDI's research activities have been in the realm of urban stormwater. With Virginia adopting new stormwater management regulations just three short years ago – regulations that greatly impacted and continue to impact the land development industry - this research focus is both timely and supports LDDI's overriding goal of improving land development education. Currently, LDDI, through the Via Department of Civil & Environmental Engineering, holds funded research contracts with the Town of Blacksburg, the City of Roanoke, and Fairfax County. Work with these municipalities involves developing innovative technologies and strategies to assist them in better managing their assets, complying with Municipal Separate Storm Sewer System (MS4) and other legislative requirements, and developing watershed master plans.

Of the future direction of LDDI's research activities, Research Committee Co-Chair, Dr. Clay Hodges, comments, "The future of the land development industry is bright; however, we need to continue to grow in a well-intentioned and sustainable manner. Research into construction and management techniques used in our industry is crucial, and provides us with the scientific and economic guidance for future development and redevelopment projects."

## Outreach Committee Update

The major objectives of LDDI's Outreach Committee are: 1) to promote the field of land development engineering to students and encourage their participation and support; and 2) to promote the Land Development Design Initiative to land development professionals and encourage their participation and support of the program. The committee has remained active this year serving as the primary logistics coordinator for the summer and winter general meetings and the annual spring sponsorship drive. This year, LDDI also hosted an Outreach Road Show in an effort to regionally expand the LDDI footprint. The Outreach Committee, in consultation with the LDDI Advisory Board, considered multiple destinations before ultimately deciding on Charlotte, NC. Tracking graduates of the LDDI program over recent years has revealed that Charlotte is rapidly becoming a popular destination for program graduates. The meeting attracted numerous North Carolina-based firms and individuals previously unaware or unfamiliar with LDDI. Outreach efforts of this nature are critical to the long-term success of LDDI, and help to continue the organic growth model that has brought the program to where it is today. The Outreach Committee is currently discussing future road show destinations, including Baltimore, MD.



*A CEE 4274 student design team presents to attendees at the 2017 Charlotte, NC Outreach Road Show*

## How to Get Involved with LDDI

To continue the success and sustainability of the Land Development Design Initiative, both time and money is needed from the industry. You and your company can get involved by becoming a financial contributor, becoming a general member, or donating your time by serving on a committee or helping with course offerings.

### Corporate Sponsorship and Individual Giving

Over the last year, LDDI enjoyed the support of 36 corporate sponsors and more than 50 individual donors. There are four levels of annual corporate sponsorship which afford varying levels of student/corporate interaction and exposure. For more information, please contact Kevin Young or Randy Dymond and view our website at <http://www.lddi.cee.vt.edu>.

## General Membership

Since its earliest beginnings, LDDI has depended heavily on the volunteer efforts of its general membership to achieve program goals. The past eleven years have seen LDDI grow to become a nationally recognized leader in undergraduate land development design education. Despite the program's rapid growth, LDDI continues to embrace an organic, grass roots operational model. This model relies on the participation of industry professionals who sincerely believe in LDDI's mission. There are currently well over 750 general members of LDDI, many of whom attend semi-annual meetings, both on-campus and at locations across the state. During these meetings, these general members contribute ideas for practitioner involvement, courses, and other aspects of the program.

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

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