When Hurricane Matthew struck, the Landscape Architecture program pulled together DesignWeek, sending students to affected communities to design for change.

Professor Wayne Place, PhD, collaborates with world-renowned design firms to offer students hands-on learning that goes beyond the classroom.

Design Inspiration | We take a closer look at several amazing faculty members who inspire and encourage students to use design to make a difference.

The Fish Market is a time-honored tradition beloved by design students since 2003. We gather handmade posters from years past designed to promote the Fish Market Gallery.
Creativity, persuasiveness, criticism, craftsmanship, and work ethic: these are the five powerful skills learned by College of Design graduates leading to exceptional design thinking, according to 2017 Distinguished Alumnus Mark Templeton [BPD '75] as he presented last spring’s commencement address (see p. 8). As the former CEO of Citrix, Mark Templeton used design thinking every day. Our graduates, through their design thinking skills, are expert problem finders as well as expert problem solvers. With these skillsets, you can design anything, including your life.

What a powerful education NC State Design offers.

As alumni of the College, you learn to be comfortable with ambiguity, to be deeply empathetic with the variable needs of end-users; to rely on data, questioning, and intuition; and to quickly generate and test ideas, so that you loop back through the process repeatedly to find the best solution. Most importantly, you use Design Thinking to solve any kind of problem.

NC State Design alumni—past, present, and future—design for innovation within the built environment, consumer products, services and experiences, medical devices, textiles, fashion, disaster recovery, a vast array of technology, and more. Our graduates look beyond the expected, challenging us all to be better humans. Alumni like you make us proud and reinforce the importance of a great education that incorporates design thinking, collaboration, and interdisciplinary exploration. The world needs designers who value the importance of inclusivity, sustainability, and innovation to solve the wicked problems that affect us all—not just today, but in the future.

I’m inviting you today to be a part of shaping our future. The College of Design influenced and supported you to become the designer you are today; please consider giving back. The simple fact is that we rely on you, our graduates and friends of the College of Design, to help educate our future designers. That support can come in many forms, from networking with our students and alumni, to providing internships for our students, to participating in critiques and hiring our graduates. It also comes in the form of financial support. The College of Design has set a goal to raise $13 million for NC State’s Think and Do the Extraordinary Campaign. The extraordinary opportunities available for support include faculty positions, program support, facility improvements, and scholarships. Your support can make a difference: 67% of our students have demonstrated financial need, yet only 8% receive scholarships. By contributing, you can make a direct impact in the next generation of designers—and the world needs us.

Here’s to great design.
Designing for Resilient Communities

When Hurricane Matthew rolled up the East Coast last October, making landfall in McClellanville, South Carolina, and hugging land all the way up the Carolinas, it brought with it flash flooding, storm surge, and in some places, more than 14 inches of rain. Following a series of storms that had already inundated many of North Carolina’s tributaries, the Neuse River, Tar River, and Cashie River all overflowed their banks, devastating nearby towns and businesses. Tens of thousands of homes and structures were destroyed, and floodwaters spread toxic waste and other contaminants. The hardest-hit communities had experienced loss nearly 20 years ago when Hurricanes Fran and Floyd struck—most residents who chose to stay didn’t think such an event would happen again in their lifetimes.

The towns of Kinston and Windsor had previously been partners in collaborative projects with NC State’s landscape architecture (LAR) program. They and their neighbor, Greenville, needed help, so the LAR department postponed the regular start of classes for its spring semester to launch Design Week, a 10-day program focused on “Living with Floods: Eastern NC, 2050.” A steering committee that included professors in LAR (Professor and Department Head Gene Bressler, Associate Professors Andrew Fox and Kofi Boone, Assistant Professor Çelen Paşalar, and Teaching Assistant Professor Carla Delcambre), collaborator David Hill (Department Head and Professor of Architecture), and the University of North Carolina at Chapel Hill’s (UNC-CH) Gavin Smith and Mai Thi Nguyen in the Department of City and Regional Planning, sent students into neighborhoods to work with residents while considering environmental design solutions aimed at preserving community.

The Role of Design in Disaster Recovery

Traditionally, landscape architects and designers haven’t been the professionals people turn to when rebuilding after natural disasters. But the field and NC State’s faculty recognize that decisions about building need to be based on the land in order to reduce the possibility of future loss. The LAR faculty stand by the Landscape Architecture Foundation’s New Landscape Declaration: “The urgent challenge before us is to redesign our communities in the context of their bioregional landscapes[,] enabling them to adapt to climate change and mitigate its root causes.”

Design Week (or DW) was pulled together quickly to address flooding that had occurred only months earlier, but faculty considered how to prepare students for working on the ground at the scene of a catastrophe. “Andy [Fox] and his team did a really good job of setting the stage for a lot of students who probably haven’t seen or experienced disaster recovery or disasters,” said Adam Walters [LAR ’17], a graduate student and the NC State 2017 Landscape Architecture Foundation University Olmsted Scholar. “He really laid out what happened in Hurricane Matthew, how recovery happens on a very general level, and they did an exceptional job of illustrating how design can play a role in that, because that’s not obvious. It’s really interesting and somewhat novel to apply the lens of design to disaster recovery. This helps students see that there is a role for them—not an independent role, but an important part of a trifecta, in this sense of design, landscape architecture, and planning.”

The department collectively decided to delay the first week of school because “it is imperative to rally people around this,” added Fox. In addition to collaborating with the NC State School of Architecture and UNC Department of City and Regional Planning, the DW experience included interaction with various representatives from each of the focus communities, North Carolina Emergency Management, and the Federal Emergency Management Agency (FEMA).

The contributions of each group were valued, but as Fox pointed out, “Designers are built to ‘do’; others want to talk about it. The design process/design
thinking is what we bring, and the student approach is what we bring. DesignWeek greased the wheels and made it apparent that designers should be at the table when discussions or decisions are being made to address wicked problems like Matthew. It was also apparent that student work matters: their outcomes were important and relevant."

**Design For and From the Community**

In addition to disaster recovery preparation, students needed a certain amount of exposure to the staging areas to understand what people had experienced and what they needed.

"We took groups to sites, to communities," said Çelen Paşalar, the Assistant Dean for Research and Extension. "We wanted them to build empathy in terms of understanding what those communities actually went through and how people are feeling. They observed the destruction after the flooding, but in the meantime they connected it to the people; they had the opportunity to meet with key groups of people and communities to understand the level of devastation that the flooding caused, what it means losing your business, losing your home. Building that empathy was at the heart of helping students understand the context, but also that the problem mattered."

Paşalar was part of a team that went to Windsor, where 80 percent of businesses and homes had been damaged in the 500-year floodplain. Her group had to make tough decisions about what land should be bought out by FEMA and which homes could be preserved with elevation. Each community had its own challenges and needs, and the groups of students going into each were expected to plan site-specific outcomes. At the end of the week, a jury of faculty and other advisors reviewed each team's proposal, and winning teams were selected for each site. These teams made formal presentations to the LAR department and community members.

Walters, whose team went to Greenville, honed in on a small, low-income community of mobile homes called Belvoir that had faced exceptional losses and wasn't receiving as much attention. "After a disaster like this, they really are even more vulnerable than they were before, not by any ill intent by anyone but because of the way a complex disaster rolls out, and a complex disaster response is always going to have people slipping through the cracks. So that really inspired us to focus on smaller communities, really vulnerable populations of folks who have been historically underserved, and how we could use design and planning to create a policy solution with design implications that could serve them."

A number of residents in Belvoir had taken FEMA buyouts after Hurricane Floyd that were insufficient to rebuild, and many didn't have the resources to start all over again. Most folks in this situation ultimately left the area entirely, which was the last thing community leaders wanted to see happen. "We chose to focus on small community migration away from hazard-prone areas and created a concept called the Community-Scale Assisted Migration (C-SAM) that tried to help keep the continuity and integrity of these small historic towns while moving half to two-thirds of the community out of harm's way for future flooding events," said Walters.

"We felt like if folks could keep the connections they have in the community and keep the integrity of the community itself, overall people would live stronger and more livable lives in this place. We developed a strategy to not just keep folks in the community but to strengthen that community's infrastructure and livability using principles of redevelopment and greenways and landscape architecture tools to change the mental construct of 'river as destroyer,' which is where they started at, to 'river as amenity,' something that rooted their town and created an identity: river as identity."

In Paşalar's experience as well, there was a disconnect between residents and the nearby waterway. The county had purchased agricultural land along the sound with the goal of transforming the site into "a place for community and to reconnect the people to the water," she said. "Although this is a community that is quite close in proximity to the water, most of the community members are afraid of water, even in the younger generation. We wanted to create that opportunity where people will be more engaged with nature and water. How can we embrace this notion of living with water? How can that site accommodate these opportunities?"

**Challenges to Students and the Outcomes**

The compact, rapidly-unfolding nature of DW and the variety of new experiences students were faced with challenged them to adapt and learn nimbly, finding solutions much more quickly than they might in a traditional semester-long class.
Jones’ team proposed “creating a state park and an interconnected greenway system along the Neuse River and its tributaries that went through Kinston to form the basis of a new downtown.” This area would pull development away from flood-prone areas and instead focus on two of Kinston’s staples, the Neuse Sports Shop and King’s BBQ, relocating them to the north side of the river. They also suggested hosting an annual river paddling race that could bring in tourists or travelers who otherwise pass right by Kinston on Route 70.

Although Jones admitted it was tough to pull everything together in the brief time DW offered, ultimately he said, “It’s value is pretty hard to argue with. The most alluring part of Design Week is just its connections to really relevant current issues. It’s, one, a collaborative experience across three departments, and that kind of collaborative experience is hard to come by; and I think, secondly, working with these communities that really need the help and represent extremely interesting case studies—which will be much more relevant in the future with climate change and sea rise—gives us a skillset and experience that makes us stand out.”

Anna Grace FitzGerald [LAR ’19] was stationed in Windsor, where her team discovered “once we started to take a look at the site itself, we realized it was a lot larger an issue than just flooding in the downtown area—we had to look at the whole watershed of the Cashie River.” They proposed design interventions on the headwaters such as leaky dams, an approach pioneered in the U.K. They also suggested reestablishing pocosins that were once at the bottom of the river where it drains into the Albemarle Sound, building engineered barrier islands that would act as windbreaks, “and in the town area we designed a thread of ‘seat walls’ that would double as flood walls using FEMA prototype design guidelines, tailored to work with the architecture in the area to fit seamlessly..."
into the fabric of Windsor." Finally, they recommended creating a stormwater management plan for the town.

"I think DW is a great opportunity for the College of Design to start to give back to the community," she added. "Being part of a land grant organization, with the expectation to work with constituents and the community—this is a knockout way to do it. It sets NC State LAR apart from other programs. The amount of growth happening in this area makes projects like this even more important."

Walters was struck by the diversity of the proposals. "For each different group, some people had really tangible solutions, like islands at the end of rivers, or dams that leaked; other teams had things you couldn't put your finger on physically but that represented new ways of thinking about migration. That is what you get when you have interdisciplinary teams: you get these different outcomes and ways of thinking about solutions.

“Our students in the two-and-a-half years I've been here have never had a more tangible applied and intense interdisciplinary experience than that two weeks of DW, and you can tell from the products we made that they were inspired: they had depth. I've seen similar products come out of a 16-week studio, but we did them in basically a week. I think that was really impressive. It has had a lasting effect on the way some of our students see the role and power of design," he concluded.

**Implications for the Future**

Four final DW projects received awards at the American Society of Landscape Architects Southeast Regional Conference. FitzGerald’s and Walters’ teams both received accolades. “All of the winning teams retooled their work and submitted it for the conference,” said FitzGerald.

Walters’ team’s proposal, which included C-SAM, is being considered by state agencies as a policy recommendation with the support of many resources behind it. In the meantime, he became involved with the Hurricane Matthew Disaster Recovery and Resilience Initiative, or HMDRRI. This initiative is funded through the North Carolina Policy Collaboratory and in close coordination with the governor’s office. “It’s an applied academic pursuit at the request of the governor’s office,” said Walters. “FEMA and the NC Division of Emergency Management have their practices, and those have not changed, but the governor’s office saw a need for an eye that was outside of those organizations that can help look at how the process could include resiliency.”

Additionally, discussion guides called *Homeplace*, tailored for individual communities, were developed over the summer. These were created to help officials and citizens understand how their towns may be affected by policies and approaches to recovery. “We want to ‘de-jargonize’ the information so that homeowners and some community leaders can understand the complexity of information and funding choices or other details that they need to know,” said Fox. Each book includes a bottom-up approach to recovery, walking communities through what to expect rather than mandating their options.

The LAR department has received a $25,000 grant from the NC State Foundation to fund DesignWeek 2018, which will include more field trips and other experiences to benefit students. Paşalar, who will lead the initiative, said, “This time we're starting at a larger scale and we will be focusing on the Neuse River Watershed, which is the only river in North Carolina that starts and ends in the state. Along the Neuse River Basin, we have in terms of the well-known bigger cities and communities Henderson, Durham, Raleigh, Goldsboro, Kinston, and then in the end, New Bern, and between, much smaller communities being affected with what is happening along the watershed and the speed of development.”

It's clear that North Carolina hasn't seen the end of destructive storms and flooding, but College of Design initiatives like DesignWeek will continue to produce and support solutions for those in need.

“Something that made DesignWeek really special and unique on a national level is that we weren’t just landscape architects looking at a real, intractable issue in North Carolina—we were architects, landscape architects, and planners from NCSU and UNC, so we had these vertically-oriented teams that could extract some of the most important skills and capacities and meld them together into something that was not just creative but strong from a planning perspective and rooted in a real place with a real issue," said Walters.

“The historic role of design has an aesthetic focus, and what Andy and the Coastal Dynamics Design Lab and department at large are putting on the table is that design has a role in social justice in dealing with some of the most wicked problems of our day on the landscape and in people’s minds. I think that came out of DesignWeek, and that is still in the minds of our students.”
Congratulations, designers! And congratulations to your family and friends. Your achievement is a beautiful reflection of their love and support.

Forty-two years ago, I received my degree right here. Just like you, I endured numerous projects; slaved countless hours over a hot glue gun; nervously presented my work to a jury; and learned how to embrace criticism. But most of all, I became confident in being myself.

From my experience, today you're earning something more valuable than a diploma. You're getting a CDT... your Certificate of Design Thinking, because you've honed five powerful skills.

- First, there's creativity, powered by your ability to reframe problems and think in unconventional ways.
- Next is persuasiveness. You're well-practiced in the art of eloquent communication... of thought, analytics, and vision.
- Third, you've received much criticism, and learned that it's feedback, it's praise, and it has value in critical thinking.
- Fourth is craftsmanship in everything, by sweating the small stuff and attention to detail.
- And finally, you've proven that a work ethic is intrinsic to both perspiration and inspiration.

With these skills, you can design anything—including your life ahead.
For me, my CDT was perfect preparation to become CEO of an S&P 500 software company, and growing it to over $3 billion in revenue and almost 10,000 employees.

I'd like to explain this with three stories.

**Passion**

*The first story is about passion.*

As a freshman at State, I studied engineering. It was a practical choice. But my heart wasn't in it, and my grades showed it.

Every day, I would walk past the College of Design. I'd peer into the windows of Brooks Hall. I saw students working days without sleep, sketching ideas, building prototypes in the shop, and yammering on with professors. They were loving their college journey.

I wasn't, so I dropped out. My parents were really upset. I was the first of our entire clan to attend college. I was now the first Templeton dropout. There was a giant thud.

My dad stepped in to bootstrap me. He said, "be best at something you love. Absolutely anything. You'll make all the money you need. We'll be proud and you'll be happy. Best of all, you'll never work a day in your life!" Dad was sage. I loved the College of Design and did whatever it took to get admitted. Finally, I was onto something I loved.

"I'll just code it myself!" He asked, "do you know how?" And I said, "no, but how hard could it be?"

Design thinkers believe anything's possible. We're not afraid of the unknown. We love the challenge of ambiguity. We're never satisfied with accomplishment and seek the impossible. No rest, no fear, with healthy self-doubt.

So, I learned to write code. It was really challenging. It captured my imagination. And it tapped every design thinking skill I had. Pretty soon, I was loving software a lot more than hardwood! I had found my next dot.

It's hard to make a ninety-degree turn in life. At the time, many called my decision risky business! The "mob" will always be there to doubt you. They won't be there to cheer you. Don't listen to the mob. Do listen to your heart. It will always guide you well.

Always do what you love. And if you don't love it, leave it.

**Persistence**

*The second story is about persistence.*

In 1999, my company—Citrix—was the most profitable in all the NASDAQ 100. We posted 47 percent before-tax income that year. *BusinessWeek* published their annual “50 Best Performers Edition.” We were number six, and our market value was $20 billion dollars.

Graduates, let your heart be your guide. It's your passion speaking. Listen to it. And trust it to guide you across the dots of life.

My diploma read "industrial design," but those jobs at the time were scarce. My first job was in Garner, about 10 miles south of here. I worked as a draftsman for Hamlin Sheet Metal and Roofing. I got lucky because the wonderful Hamlin family encouraged me to go further. Three years later, I earned my MBA at UVA's Darden School of Business. From there, I went into forest products, at first marketing kitchen cabinets. A few years later, I co-founded a hardwood molding business. I was learning, developing, and having huge fun along the way—from dot to dot to dot.

One day, my partner and I decided we needed to really step up wood molding production and profits. Our spreadsheets were maxed out. We needed real software.

We searched, but no software existed. My partner asked, "now what?" I said, "Honest criticism is a gift. I learned that right here at the College of Design by listening carefully to critiques, respecting opinions, and suspending defensiveness." —Mark Templeton

"I'm supposed to see obstacles before hitting them. That's what great leaders do. I knew accountability was coming. In July, the Citrix board of directors convened, evaluated my performance, and decided to search for my replacement. After only 18 months as Citrix CEO, I was demoted to Senior Executive Officer. It hurt, really bad.
I made a very short speech to the board. I said, “gentlemen, I accept your decision. I love Citrix. I drove us into this ditch and I'm going to get us out. I am not a quitter!”

Instantly, I got a lot of encouragement. Most of it was to quit, to disparage the board, to cry foul, to give up. That's what the “mob” thought. Persistence is how Winston Churchill saved the modern world. Famously, he said, “Never give in, never give in, never, never, never.”

Persistence is the ability to confront obstacles with enthusiasm. It’s about proactively connecting dots forward—between the people and things you truly believe in. Persistence measures the intensity of your passion.

My heart told me to stay, to make tough decisions, and to fight back. In six months we were growing again. Dot-com companies were crashing all around us. In twelve months, the Board promoted me back to CEO.

Setbacks happen. Like that early design critique that scarred you. I hope it still hurts and you'll never forget it. You may have flunked a project, but you didn't get an “F” in life. No one has ever been successful without setbacks. When you get knocked down, when conventional thinkers are against you, you'll be stronger if you don't give in. Persist.

**Point of View**

*The third story is about having a unique point of view.*

I'm sure you recognize Diebold, the maker of the world’s most secure vaults. Massively complex, made of tungsten carbide, and impossible to crack—unless you’re Tom Cruise, of course! A friend of mine was a member of the Diebold board and told me this true story.

In the first Gulf War, the Iraqi army occupied Kuwait. They captured the royal palace. A Diebold vault was there, protecting treasures of the state and the royal family. For weeks, the Iraqi army tried to crack it, using every weapon imaginable, trying to break through the vault door.

After the war, it was found mangled beyond recognition, totally inoperable, but completely secure! Diebold engineers came in. They estimated the explosive force used on the vault door. They were amazed, not by the damage, but because they realized the vault could have been breached with one-tenth of the explosives—if only they had aimed at the side, top, or bottom.

Most people attack problems straight on. It’s the force of inertia at work. You know, doing today what worked yesterday—over and over. Other than faith, it’s the most powerful force I know.

Design thinkers suspend judgment to counter the force of inertia. It’s like anti-gravity paint for the mind. It’s what creates inspiration, insight, epiphany, and creativity. Suddenly, a problem can be solved in a simply obvious way, because it was seen “differently.”

Think about it. Just ninety-degrees of perspective for the Iraqi Army would have turned failure into success, at a fraction of the effort.

Design thinking is your license to challenge the status quo, to think as a contrarian, to do what’s unconventional, and to solve real problems. Point of view can be worth an additional 50 IQ points.

**Closing**

Sitting here today, you're pondering the future. What's ahead? What's next? Some of you will practice the discipline printed on your diploma. But many of you won't—just like me. Have no fear. **Your Certificate of Design Thinking has prepared you for many endeavors you cannot possibly imagine.**

As Steve Jobs said so beautifully, “you can’t connect the dots looking forward; you can only connect them looking backwards. So you have to trust that the dots will somehow connect in your future. You have to trust in something—your gut, destiny, life, karma, whatever.”

I say, trust in your passion to fuel your persistence, and steer it—dot by dot—with a point of view that's uniquely your own. Remember, you have an unfair advantage. It's called Design Thinking. You're ready for the real world—wrought with interesting problems, begging for innovative answers, and hungry for your leadership.

Being a “designo” has opened many doors for me. Forty-two years from now, I hope you can say the same thing. That's my sincere wish for you.

Congratulations, and thank you. •
"I have never had hearing since birth. I’m profoundly deaf," says Alexandra Grossi [MGD ’17] without hesitation. Grossi is determined not to make her "disability"—which she reframes as not a disability, but an inability to hear—a factor in who she is, what she can do, or her ability to influence change. "Eyeglasses once represented the stigma of a disability," she says. "Now they are considered a style trait with designer glasses." She’s got a point.

Alexandra Grossi was in her first year of the Master’s program in Graphic Design (MGD) when she got her second cochlear implant (CI). The MGD program enabled her to think critically about the tools she was so reliant on for her way of life. Having spent her life conforming to the variable tools and applications that could provide mainstream inclusion for her, she had a clear understanding of the missed opportunities and injustices for those with disabilities, specifically the hearing impaired.

In 1999, Grossi received her first CI, which is a surgically implanted electronic device that provides digital sound. The implant delivers electrical stimulation to the cochlea, which the brain interprets as sound. The CI relies on the implant and an external sound processor that is attached by a magnet to the back of the ear.

In 2016, she upgraded her CI and received a second implant, providing the bilateral hearing she was missing after the first surgery. This was pivotal for her. In addition, the upgrade came with an external remote, which seemed at first impression to be a great advancement from her prior model.

CIs aren’t just convenient, high-tech devices—they are life-changing tools that users depend on. However, users are unlikely to switch brands due to the associated costs and the need for additional surgery. In other words, a CI user is “stuck with the device,” unlike a smartphone or laptop consumer, who has a plethora of choices and options and can easily upgrade to another product that provides better performance or preferred features.

With the new external remote, Grossi’s expectations included simplified setting changes and easy-to-use functioning that would improve the experience for CI users. She was quickly discouraged, however. "The remote control was not only counterintuitive and confusing, but tedious." She took this "as an insult to all CI users who depend on assistive technology for their way of life."

One requirement of a CI is to include settings so that in certain environments the user can modify the sounds. For instance, the user should have the ability to increase the volume when someone speaks softly or to increase sensitivity in a noisy room. In many instances, users must rely on an audiologist to adjust these settings.
The process of making critical sound adjustments with her CI's external remote is “problematic,” Grossi says. Users must navigate through many screens to make changes, and the icons and language are not intuitive. It can take up to 10 steps to reach the screen that allows users to change the volume of their left ear. If answering a phone required as many steps, consumers would be quick to dismiss the product and buy another.

Thus, Grossi’s master’s thesis considered the design of assisted technology devices like CI implants: “I was learning about critical information and systems in design, among other things, and these topics opened up so many possibilities for this kind of thinking. I realized this [CI remote] was a fairly poorly-designed interface, and I was so frustrated as a user. I knew I would do this for my thesis,” she states.

The systems and design methods Grossi refers to include Human-Centered Design and User-Sensitive Inclusive Design, which—in the most basic of terms—support the importance of designing for the user, including incorporating the user’s feedback, emotions, and experiences to arrive at better design solutions. Her thesis looks at the variable design methods that should be considered when developing assistive technology. She collected data and feedback from end-users on their experiences through surveys, interviews, online polling, and interaction with user groups.

“If you give users a voice—which is what my thesis is about—it is important for all users of an assisted technology such as the CI to have a stronger voice in design,” she states. “Even more so than computers or cell phones, because those devices are disposable.”

Much of the data collected supports the view that CI users are also frustrated. One user who also wears glasses wants to see a device that would combine his hearing aids and glasses into one. Another respondent recommends that hearing aids be Bluetooth-compatible. These are reasonable requests, and if given the chance, this feedback could lead to better design solutions. Furthermore, these users’ needs must be viewed as those of invested stakeholders and taken seriously. “I have the unique experience of being a CI user and a designer, so I am intimately familiar with the difficulties and the opportunities,” Grossi says.

“I firmly believe that good design for many people is good for everybody. There are so many benefits to taking inclusive design seriously. I want everyone to get on the bandwagon.”

—Alexandra Grossi

As part of her thesis, Grossi utilized the data collected to develop unique personas to establish an understanding of the variety of CI users and their daily routines. The resultant user journey maps are intended to promote empathy and ideas in the design exploration process by addressing the question, “How can this experience be better for this persona?” Many of the ideas suggested by Grossi are for functions that are currently not available on CI devices.

She further researched and developed a user interface she calls SoundSpace, which could be connected to a CI remote control that is highly customizable and easy to use. It would provide quick access to control panels for volume and other settings with improved visuals. SoundSpace can seamlessly integrate with a smartphone, computer, or wearables like the Apple watch. Additionally, Grossi explored the opportunity to develop a private, built-in social media network called the SoundSpace Collective, which would be a unique forum for users of SoundSpace to be able to share ideas and new features, and to develop a community. The data generated by users would be invaluable to CI manufacturers, designers, and researchers in the field to help push the progress of the CI interface based on users’ needs.

For Professor Tsai Lu Liu, Head of the Department of Graphic Design and Industrial Design, Grossi’s thesis “is thoughtful and beautiful, a good inspiration for other designers.” He has encouraged her to publish it.

“Hearing aids don't have to be big and dull,” Grossi states. She wants to shift the paradigm of what it means to design for disability so that it can enable innovation that can be used for advancement in consumer markets. “I firmly believe that good design for many people is good for everybody. There are so many benefits to taking inclusive design seriously. I want everyone to get on the bandwagon.”
Over the last hundred years, two of the fastest-growing building types have been airports and tall buildings. According to the International Air Transport Association, in 2016 approximately 3.7 billion passengers traveled by airline, and even more passed through an airport. Due to the growth of the world's population and trends of urbanization, efficiency in space and energy utilization require the adaptation of tall buildings. These multi-purpose tall buildings are spreading across the globe at an ever-increasing rate.

Wayne Place, Alumni Association Distinguished Professor and a 2017 NCSU Outstanding Research award recipient, teaches advanced studios on these topics: ARC 503 Tall Building Design and ARC 503 Airport Design. Studios like these differentiate the College of Design from other architecture programs and expose students to the fundamentals of designing on the macro scale.

Both studios provide a platform of exposure, an introduction to new technologies, and the expanded understanding of design constraints students would otherwise not have. Place, who has been teaching for more than 40 years and focuses his research on the system integration of daylighting, building-energy efficiency, and architectural structures, believes designing such large buildings offers students “the opportunity to have a really profound impact.”

Place has an advanced degree in architecture, a PhD in physics, and is a registered structural engineer, all of which provide a multitude of fruitful experiences to students who choose to take his advanced high-tech studios. He hopes his students will become excited about the opportunity to redirect their career paths to concentrate on tall buildings or airports. By offering these studios, students learn “the issues of natural light and structure that they would not otherwise get in their careers.” He adds, “I think the studios also address issues of scale that are very important to us—as in the planet—as we move forward.” Place notes that there is a need for efficiency in designing and planning large structures as more and more people are moving into cities and density is becoming greater. “Tall buildings are incredibly important for human beings to inhabit the planet in an efficient manner that does minimal damage,” he states.
Place has been honing the tall buildings studio for five years and the airport design studio for four years. He has also added collaboration with two influential global firms that are thought leaders and experts on the topics and have become great community partners with the College: Fentress Architects and Skidmore, Owings & Merrill LLP (SOM). Partnerships like these offer practical and hands-on experience to students and layer the design education with invaluable insights.

Fentress Architects, an international design firm with offices around the globe, has been instrumental in the airport studio. Place acknowledges that what founding principal and CEO Curtis Fentress offers in terms of knowledge and legacy of airport design “is invaluable to students.” Fentress, FIAA, RIBA [B.Arch '72] is a 2010 College of Design Distinguished Alumni Award recipient and an expert in airport design and a wide array of other building types. He is recognized for the design of numerous iconic structures, including the Denver International Airport and the Incheon International Airport in Seoul, South Korea, both of which have received international acclaim. Fentress Architects has received more than 500 awards for innovation and excellence. The firm enhances the airport studio and has numerous associates who provide FaceTime and teleconference critiques for students. In addition to the generosity of their time, they share digital resources, including codes, rules and regulations, and technical requirements for airports that are key when embarking on projects. Place adds that both Joshua Stephens, AIA, and Ana-Maria Drughi, AIA, of Fentress Architects “were helpful in the initial conceptualization and creation of the studio. We would not have this airport studio if key personnel at Fentress Architects had not taken the initiative.”

Fentress himself is very active in the studio. “I come the first week and spend a day and wear the students out,” he says. He meets again with students at the end of the semester and has been influential in other ways: “I’ve gotten folks from the community Raleigh-Durham International Airport to be involved in the class so that students get the exposure of practical experience.” Fentress has also hired several students from the program.

SOM is the other important partner in Place’s high-tech studios, recognized for many projects and specifically for tall buildings. The SOM involvement in the tall-building studio has been possible because of the leadership of Mark Sarkisian, Chief Structural Engineer and author of Designing Tall Buildings: Structure as Architecture. Sarkisian has mobilized a team of ten reviewers with a wide range of expertise to contribute to the studio. These professionals provide feedback and support to the students during critiques and throughout the process. For the past five years, the studio has taken a trip to SOM’s San Francisco office at the kickoff of the semester so that students can interact with the team, tour completed projects, ask questions, and get a firsthand feel for the collaboration and process of designing and planning tall buildings.

Place acknowledges that numerous SOM members are active and influential to students, and during the visit the team provides tangible, hands-on training to students. Also on this visit, Leo Chow, Principal Architect, gives a lecture that Place describes as “so inspiring that
when you leave the room after his lecture, you feel like you can change the world.”

The experience was insightful and enduring for recent graduate Jeromy Clements [M.Arch '17], who participated in both studios. “I would encourage any students who are remotely interested in working on a project that is challenging and will test them to take Wayne’s class. They will certainly get more out of it than they put into it.”

Clements acknowledges that his exposure to these studios has changed his career path. “I originally pictured myself working on medium-sized projects; however, after Wayne’s class, I believe I’m cut out for working on large buildings such as hospitals or airports. The bigger the building, the bigger the impact you have as a designer.” He continues, “It is important to have designers that are thinking about sustainability, which is one of Wayne’s major focus areas, whether daylighting or implementing solar panels and water collection.” He also says that the use of technology encouraged by the studios is helpful. Both studios introduce Revit software, an industry standard used by many firms for building information modeling that includes features for architectural design, structural engineering, and construction. It is a great platform for multidisciplinary collaboration throughout a design project and provides leverage for students when applying for jobs due to their knowledge and real-world application of Revit.

In the high-tech studios, students are able to transfer knowledge gained earlier, whether in context or application, and implement it. “We have a major initiative, started by Associate Professor of Architecture Jianxin Hu, to introduce Revit to students during undergrad,” says Place. “I am trying to build on this and reinforce it during the advanced studio.”

Place concludes, “A studio like this is crucial for preparing students to find job opportunities in dealing with these types of designs. Even if they don’t intend to build huge structures, it broadens their capabilities and gives them a better understanding of their subject matter.” Big things continue to be on the way for his students, who are winning local, national, and international design competitions.

Elevating Student Work Internationally

In September, Professor Place was invited to present students’ work from these studios at the 4th US-China Tall Buildings Summit in Chongqing, China. The symposium was sponsored by CITAB, the Chinese counterpart to the U.S. Council of Tall Buildings and Urban Habitat. He also presented his lecture to the Architecture School of Chongqing University. During the tour of China, he traveled with Leo Chow and Mark Sarkisian, Principal Partners of SOM. According to Place, “Traveling in such illustrious company helps elevate the status of our School in the eyes of the international community. Without the sponsorship and promotion of our studio by SOM, we would not have had the same presence in China.”

Biennale Architettura 2018 | 16th International Architecture Exhibition
Venice, Italy | May 26 through November 25, 2018

The European Cultural Center has extended an invitation to the NC State University College of Design to mount a major exhibition of student airport design work for the 2018 Venice Biennale of Architecture. The invitation came after Fentress Architects sponsored a Symposium on Airport Design as part of the 2016 Biennale, featuring Professor Place as a speaker. Founded in 1895, la Biennale di Venezia is one of the most prestigious cultural organizations in the world. Fentress Architects will present a new exhibit of their firm’s work alongside NC State student design projects.

“Curtis Fentress’s support has been absolutely crucial to this grand opportunity being extended to NC State University,” emphasizes Place.
Seeing Possibilities
by Monique Delage

Losing the faculty of sight can have an indelible impact on one’s perspective. It became a reason for Alyssa Padmos to participate in the 2017 Art 2 Wear (A2W) fashion show. Padmos graduated in May with a degree in Animal Science with an industry concentration in agriculture and research and a minor in Art + Design. The theme of this year’s show, “Deja vu,” was particularly resonant to her. “All I know are things that I have seen before, and this is how I see the art of deja vu,” she says.

As a teenager, Padmos was diagnosed with Stargardt disease, a degenerative eye disorder that eventually results in blindness. “I am going blind, so I’m pulling things from my memory, as at some point I won’t be able to pull in new images,” she explains. Participating in A2W allowed her to implement a passion for design and making, as well as reflect upon personally significant and inspirational childhood memories.

Having loved fascinators, headpieces generally worn by royalty on the side of the head and embellished with veils and other touches, Padmos decided to venture out and challenge herself with new techniques, materials, and the hope of learning many new things. Her collection, “Enigmatic Daydream,” included six handmade headpieces. “The inspiration for this collection comes from memories from my childhood where I grew up. There are three types of plants and three types of animals represented, all of which can be found in rural North Carolina.”

Headpieces are a trend that she hopes to bring back, but with a different perspective. Her collection incorporates some unexpected materials, including plants, feathers, dried cherry tomatoes, and alpaca fleece. Padmos ventured to an alpaca farm to learn more about the cultivation process of the material. It is not often that a student outside the College of Design takes on the challenge of building a collection for A2W. The commitment is intense and requires hours of dedication. Padmos considered the endeavor a chance to prove that she could. “Doing this was a great opportunity—when people tell me that I can’t, it just makes me want to do more and prove to them I can,” she states. Her
confidence and determination to accomplish everything possible are infectious.

"I don't want to limit myself; instead, I think, what can’t I do?” she asks. "No matter what discipline, background, or issues you have, you can do it if you have a passion for it—especially if someone says you can’t.” Assistant Professor of Art + Design and Director of A2W Justin LeBlanc discusses A2W’s inclusive nature: “Art2Wear is an opportunity to celebrate the skills of students across campus throughout the different majors. In a way, Art2Wear is an accumulation of talented students who have a variety of interests, backgrounds, and skillsets that come together to create an amazing show.”

"I love theater and sewing and enjoy making my own clothes. I am self-taught, and it's a stress release,” states Padmos. "I’m glad I made this decision to do A2W—the stress is different. The design thinking process is like the scientific method. You have steps to follow, and if it doesn’t work out, you start at the beginning and you keep going until you get to the end result, and hopefully it meets up with your hypothesis, but if not, that is okay.”

The sunflower turban she made was special to her for several reasons. Growing up, her mom grew sunflowers, and Padmos remembers how amazed she was by their beauty, even when they were at the latent stage of life and the petals became brown and the stems slumped over. “I saw van Gogh’s famous 'Sunflowers,' in person, and this too was an inspiration.”

"The sunflower hat was my favorite in terms of a show piece. It was interesting from every angle, and each perspective looked different,” she muses. "It also looks different on every single person, because of the sizing adjustment.” Each of the fascinators were adjustable—an important element to her designs. “I wanted to make certain that there was a way to adjust the hats so they are sustainable to different people. I don’t want this to be a reason someone can’t have a hat.”

The making process required a lot of trial and error, not only on the sunflower hat, but on each project. Padmos hand-painted, dyed, beaded, braided, and used unorthodox materials. Her father offered up copper wire that she used like a vine, wrapping it around the model’s back and arm.

Padmos enjoyed the collaborative energy. “The greatest thing about the studio is to just be with these other designers and feed off of that. The experience was great. To be around peers going through the same process is important.”

“There was a lot of blood, sweat, and tears in every single one of my pieces,” she adds. “A lot of engineering feats—some easier, some harder. I learned so much. Many of my headpieces were completely different than I originally imagined.” The turtle shell, for example, was originally going to be like a traditional pillbox, but through many iterations and conversations, it became far more organic and sculpted.

At the end of the event, Padmos was moved by the number of people who approached her and inquired about her work. “I didn’t think it would receive as much interest, and so many people wanted to get a closer look,” she states. But the absolute best part was when a peer shared how inspired she was by Padmos. “She said she was an artist, and she too is losing her vision and thought that it was cool that someone from ‘our’ platform is being recognized on a larger scale and is bringing awareness to the disability.

"The fact is—this is not a hindrance—but a different way to look at things. You can still do art, even though you can’t see,” she concludes.
During a mother’s hospital recovery from giving birth, there are many emotional nuances and unforeseen adjustments to contend with. Being able to reach out to her newborn quickly and safely from her bedside—whether for breastfeeding or comfort—as well as being able to lay the infant down again, make a huge difference and are often overlooked. Side-car bassinets, which are widely used in Europe, provide distinct mother-child bonding opportunities, as well as offer maneuverable transport within a hospital setting. Last spring, a sponsored graduate studio focused on redesigning these bassinets for future use in the United States.

The studio provided real-world exposure to its students, including Pratik Bendale, a Track-3 graduate student in industrial design (ID). “This project is one of the best so far. It’s research intensive; in other projects we started earlier with design, but this one [focused on] research and user feedback first, and it’s been amazing,” he said.

The interdisciplinary collaboration was organized and managed by Dr. Kristin Tully of the Carolina Global Breastfeeding Institute (CGBI). She served as the principal investigator on the Improving Human Health Award, presented by the North Carolina Translational & Clinical Sciences Institute at the University of North Carolina at Chapel Hill. This, in addition to a Patient-Centered Outcomes Research Institute Engagement Award, made possible bringing together industrial design faculty and students, the design and engineering firm Trig Innovation, and a group of UNC medical specialists, including: Catherine Sullivan, MPH, CGBI director and clinical assistant professor at the Gillings School of Global Public Health; Dr. Carl Seashore, Professor of Pediatrics at UNC School of Medicine; and Dr. Alison Stuebe, Associate Professor of Maternal-Fetal Medicine at the UNC School of Medicine.

The objective of the collaboration was to use current data on side-car bassinets and gather additional research and discovery through various design methodologies so that new ideas and solutions could be considered for development. In essence, to better understand the experiences and maternity needs from end-users and care providers to inform the design process. Throughout the semester-long project, students collected data and conducted research to propose design solutions that were reviewed and critiqued by the entire team. The findings eventually led to Trig taking over the project to further develop actual prototyping and product solutions to be tested within UNC Hospitals, with the intention of refining these for widespread manufacturing.

Side-car bassinets are three-sided and lock onto the hospital bedframe, enabling mothers to have visual and physical access to their newborns. For Tully, “the current products that are available are not designed for the family. You need to understand their needs and concerns so that you can reduce stress on the situation and the environment.” Her hope is that this collaboration will “greatly improve the mother-baby experience and improve the interaction and safety concerns with the current designs.”
The ID studio was guided by Dr. Sharon Joines, Professor of Industrial Design, who is a passionate researcher and ergonomic expert with a focus on human-centered design, design methodologies, and interdisciplinary design solution development. A unique twist to this studio was that, in addition to the various partners involved with critiques and discussions, additional faculty members—Kelly Umstead, Assistant Professor of ID, and Carolina Gill, Associate Professor of ID—also were involved. "I've never had a studio project where we have one lead faculty and two other faculty who truly participated in each one of the critiques—for me it was a lovely experience to work with them," shares Joines.

Throughout the semester, members of the Trig team periodically dropped in to see the students' progress and to provide valuable feedback. Seth Teeples, an industrial designer at Trig who was involved in the project, says, "When students get to a certain milestone in the project, we come and provide judgment and suggestions." He hopes students will consider testing every angle of their projects.

This type of interaction is invaluable for students, who gain experience beyond the studio. "This is great real-world experience and application of the company-client relationship and the importance of the user experience to design," says Teeples. "They get to learn about the constraints of the project: the mother, baby, medical staff, and hospital setting that are touch points to consider."

In order to fully understand the variable complexities to be incorporated in the design process, students toured the UNC Medical Center's Maternity Care Center with the team and clinical professionals in order to observe patients and medical staff interacting with the bassinets in actual settings. This includes how a mother lifts her baby, her emotional state, her needs, how the bassinet attaches to the hospital bed, and how it is wheeled from one location to another within the hospital setting.

An actual hospital bed and bassinet were available in the studio so that students could analyze and better understand the functioning and mechanical constraints in order to develop design solutions.

Another interesting aspect of the project was that students had full access to data and survey results conducted by Tully and others. This information was derived from mothers and medical staff that have firsthand experience with side-car bassinets. Additionally, respondents to the survey had the opportunity to provide face-to-face feedback with the students, adding another level of understanding and empathy. One student noted that this interaction was one of the most important aspects of the project, as the user-feedback was critical and informative to the design process. For Joines, "The fun part is seeing design students be thrilled with research and collecting information and engaging with the end-users and opening up their designs."

"Having the right end-users is critical," adds Joines, who also shares that Tully had done an exceptional job of developing the project and making sure that all the appropriate partners were actively engaged.

In their final critique, students presented research findings and design ideations to Tully and her team, members from Trig, and ID faculty members. Several of the students developed prototypes of their projects to provide a deeper understanding of their concepts. Ten projects were presented, and the team asked questions, proposed additional scenarios, and offered feedback. The team tabulated surveys of each project in order to determine viable solutions that would move forward with Trig. "We pick up the project from here, pulling the best from the best of ideas and solutions," notes Ty Hagler ['11], Principal of Trig.

"This is a huge educational experience—the process of introducing design and design thinking in this way. The degrees of risk tolerance are very different, and to bring these two professions [design and medical] together is a lot of fun," Hagler adds.

At its conclusion, Joines believes this was a successful studio for her students on many levels. "Data-driven design can be freeing, and I think that the students were surprised that having so much information—collected for them and by them—really freed them to understand whether their design was solving the problem. And they learned you can have a unique design that is a failure because it doesn't meet the needs of the stakeholders, and you need to move on."

Tully sees the value of the collaboration and adds, "I think this is fantastic—I hope to partner with NC State on more projects like this."
For three years now, Dr. Traci Rose Rider, Research Assistant Professor of Architecture, and Elizabeth Bowen, University Program Specialist in Sustainability, have led students in a lab that examines buildings on campus and how they measure up to a set of standards presented by the U.S. Green Buildings Council (USGBC). Their students, who come from a number of different disciplines, are responsible for researching and making suggestions to get NC State buildings on track to receive Leadership in Energy and Environmental Design (LEED) certification.

Since 2008, NC State has made a commitment that all new construction and major renovations will receive at least LEED Silver status. But once a building exists, it continues to make an impact on water and electricity use, waste production and emissions, pest management, maintenance, and the human experience—for a minimum of half a century. Rider’s and Bowen’s class gives students the opportunity to partner with various NCSU operations and facilities to address these impacts on existing structures.

“Instead of just thinking about how to design a building for efficiency and use and occupancy, we’re actually looking at how buildings work,” says Rider, who also serves as Coordinator for the Design Initiative for Sustainability and Health at the College of Design. “Architecture programs across the board will teach you how to work toward completing a design and construction project, and hand the building over to a client; there’s not a lot of attention to what happens in those buildings after we’ve done our job.”

LEED additionally certifies Operations and Maintenance, or O+M, in buildings. Although these aspects, according to Rider, are “wildly less glamorous,” they are “absolutely important. Buildings are typically designed for 50-year lifespans, and decisions you make during the design, be they materials, mechanical zoning, infrastructure for trash and recycling leaving the building, or water use—all of that your owner’s going to have to live with for the next 50 or so years, and inefficiencies will cost them in both maintenance and occupant satisfaction.”

In its first year, the LEED Lab evaluated Nelson Hall with support from the Poole College of Management Sustainability Initiative. Then it evaluated residential Bragaw Hall with support from Campus Life. Last fall, they began considering how to make Talley Student Union the first building at NC State to become LEED O+M Certified. It is targeted as the first O+M certification in the UNC system and would become the second student union in the country to receive this certification. Talley already had LEED Building Design + Construction Silver certification, but now the lobby includes a LEED Dynamic Plaque, which uses an integrated platform called Arc to continuously monitor energy, water, waste, and other environmental impacts to track the overall performance of the building as it compares to others like it.

Doug Morton, PE, Associate Vice Chancellor of Facilities, says, “The installation of the Dynamic LEED Plaque in the Talley Student Center is the result of a thoughtful, collaborative effort between faculty, students, and staff at NC State. Each of us who understands the complexities of operating such an active building has a responsibility to share with our fellow Wolfpackers the significance of the plaque and the story it tells about the Talley Student Center.”
The interactive nature of the plaque allows visitors to see how the building is performing at any given moment.

This fall, Rider and Bowen are hosting the course once again, with the support of a $5,000 grant from the Appalachian Energy Summit. This time around, they are targeting the McKimmon Conference and Training Center.

“The McKimmon Center is oftentimes a face for the university. People come and engage at McKimmon but don’t always visit the rest of the campus. Helping the folks at the McKimmon Center strengthen their presence is really important for them and the students engaged in the course,” says Rider.

The course isn’t without its challenges. McKimmon, which was originally built in 1976, includes a number of large, open rooms without a lot of daylight due to their use for classes and meetings with audiovisual display needs. The course brings together students from civil engineering, the environmental sciences, and design and architecture. Rider and Bowen lead a number of team-building exercises and icebreakers to get these groups on the same page. “We ask students to give us three myths or stereotypes about each group, including themselves. Once they vocalize some of the myths about themselves and the others, they realize how ridiculous some of the baggage they bring in to these collaborations is about other disciplines, and we ask them to leave those preconceived notions at the door,” says Rider.

This cross-disciplinary collaboration isn’t common. Allison Menius [B.Arch '17], who participated in last year’s LEED Lab, said, “Even though I will be entering into a profession where I will work with these individuals (students from engineering and natural resources) on a regular basis, there are not many opportunities in school to make those connections and work collaboratively.”

The expected outcome, if last fall’s class is any indication, will be an even stronger analysis of each building. “Across three main fields of study—architecture, engineering, and environmental science—every angle of each of [Talley’s] weaknesses was analyzed and discussed, leading to innovative and unique solutions,” says Madison Bose (M.Arch student).

In addition, facilities employees work with the students to gather the data needed. “Our division [the McKimmon Center for Extension and Continuing Education] mostly serves working professionals and those who may be looking at changing jobs. We don’t have as much access to degree-seeking students, so it’s a great opportunity for us to work with students and involve them in what we do,” says Chip Futrell, CPP Director for Continuing & Professional Education.

Bowen, who has held a position in facilities for many years, observed a great deal of growth in last year’s student group as they worked with Talley: “My number one takeaway for students is how to work professionally with a client and to observe deadlines. The primary client for this course was campus enterprises and facilities division; recommendations were made to both clients, and the students needed to learn to own the project and interact professionally. They were challenged to be the experts and make recommendations; however, in this case, they were experts and were challenged to be consultants.”

By the end of the fall semester, the new crop of students will have analyzed the McKimmon Center—its strengths, as well as gaps that must be addressed to attain LEED O+M certification. Once these baselines are established, students will suggest tactics or strategies to meet LEED thresholds.

“These students, who have fundamentally similar interests, come together from drastically different perspectives or approaches and pull it all together to apply their collective knowledge in a real-world setting that impacts their environment, their home here at NC State,” says Rider. “They get so excited, and they’re so dedicated to what they are trying to find, because they know it has real impact.”

**Additional data and audit collections performed by students for the LEED assessment:**
- Waste Audit
- Preliminary Energy Audit
- Occupant Comfort Assessment
- Purchasing Evaluation for consumables and non-consumables
- Assessment of Grounds Management and Housekeeping
- Transportation Survey

*Top Left: Students engage in a waste audit at Talley Student Union.*
Lesley-Ann Noel (PhD candidate) is determined to change the educational model in primary educational curriculum to empower students and teachers to “be curious, and to learn in a different way using design thinking.” She earned her undergraduate degree in industrial design, a master’s in business administration, and had a successful career as a consultant, designer, and most recently as a lecturer at the Department of Creative and Festival Arts and the Arthur Lok Jack Graduate School of Business, both at the University of the West Indies, St. Augustine Campus. Noel is a native of Trinidad, a mother of a fourth grader, and a Fulbright Scholar who is working towards her PhD—with the intent of making a difference.

Noel’s research focus is design education and practice, specifically in the Republic of Trinidad and Tobago, and how design thinking can be used to improve primary-level education by engaging various types of learners through active problem-based learning exercises. “In my research, I am trying to use design thinking as a base for a different education paradigm for the fourth grade,” she states. She is substantiating her research through the lenses of critical pedagogy (CP). This teaching approach attempts to provide a platform for students or learners to question biased standards and practices and to explore options that are better suited to their personal needs and the community.

For more than 20 years, Noel has been involved in design education and has questioned standards and learning objectives she feels are biased. “Our elementary school system is rigid,” she emphasizes. “Students immediately have to come from curiosity and exploration in preschool into this rigid system where they have to start memorizing math facts, sit, and listen to a teacher—there are so many rules.”

This format is teacher-focused, and Noel would like to see students have more of a voice. “These questions concern me in my thesis and my practice as an educator. To deal with that, you need to empower curriculum.”

This past summer, Noel’s research took her back to Trinidad, where she conducted a voluntary three-week, hands-on design camp with a local school on
academic watch. The school is run by the Anglican church and located in a very rural area with an economically challenged population. The design camp was free and offered during the summer holiday, however, “the principal and a few teachers shared that as long as the school gates are open, there are children there, just looking for something to do. Children want to be there, as there are not a lot of extracurricular activities for them in this community,” Noel explains.

While developing the camp curriculum and activities, Noel was interested in learning about student empathy and critical thinking and how the introduction of design thinking and active-based learning can empower students “to identify problems in their community and in their schools using design thinking methods.” She piloted some of her exercises during last summer’s Design Camp, held at the College of Design. The activities included open discussions and conversations; the opportunity for students to develop their own design projects based on interviews; the creation of a persona to try and understand target groups; journey maps, brainstorming, journaling, and feedback.

“I’m actually describing the process and giving them the power to name the process, rather than just saying, ‘this is how we do design.’ Using design thinking in an empowering way, they [design camp students] will start with problems that may be related to themselves or how to improve their own lives. They first need to identify the problem, brainstorm the problem and develop solutions, possibly test the solutions, then collaborate and provide feedback with each other,” she says. “My hope—maybe a grand hope—is that the children will see possibilities they hadn’t seen before and filter these back into their school work and want bigger things in life. If schools start to do better, maybe it can impact national curriculum. I’m hopeful.”

Noel is back from Trinidad with completed research. “[Design camp] was a great experience, and it was challenging,” she admits. “Operating in a small school with limited resources, I got to understand why the current education system is what it is. I still don’t agree with it.” She believes the conditions of class sizes of 25 to 30 students can be problematic, and adds, “this is why they [school administrators and educators] use the top-down approach.” It can be difficult for an educator to manage and keep all students on the same task when there are some who learn differently or have variable skill levels and interests.

With the intent of empowering students, Noel organized the classroom with groups of tables instead of front-facing rows of desks. This promoted a more interactive classroom and encouraged conversation and collaboration among the students. The research assistant working with Noel, a special education teacher in Trinidad, was wary of this set-up. “From her perspective, the students had too much freedom and power,” Noel explains. But instead, “the students were able to manage all of the space we gave them. They were able to impart the curriculum, and by the end of the third week, they wanted a day off, and they voted,” she says. The students said that they wanted the freedom to paint instead of working on designing something specific. “This is the kind of empowerment that I was hoping for—they were able to say, ‘this is what we want to do,’ and to then actually see an action that happened as a result of their advocacy.”

The students were required to journal about their experience and express their feelings. At the end of each week, Noel engaged them in focus-group sessions where open dialogue and feedback were expected. Much of this will be included in her formal research in addition to observations, project outcomes, and input from administrators and educators who were involved. She looks forward to delving into all the research and feedback.

“This is just a starting point, and there is a lot more work that has to be done,” she acknowledges. She wants to return for further research and to seek collaborations to “scale the project up” and visit other schools “to understand how to make this type of intervention a lot more realistic.”

Noel also found evidence of low self-confidence in students’ willingness to share their ideas and provide input, as well as in their ability to draw. After three weeks, however, there was a noticeable boost. Empathy was also an area in which Noel would like to see intervention at an earlier age. In addition, she determined this was the appropriate grade level for critical thinking based on “the types of design problems they worked on and the way they did their research, and the way they broke apart problems and developed prototypes.

“I have data for six or seven papers, but I will only write three,” she says. “If I continue to work with the same school over a few years, we may be able to see what happens to their performance levels, what happens to the children as they progress in grades? We will be able to understand things better over a period of time, and future research has to be longer—not just three weeks—but maybe longitudinal studies, over time.”
Assistant Professor of Graphic Design Derek Ham, PhD, is always on the lookout for ways to incorporate virtual reality, or VR, into learning experiences for kids. His own children, ages 7, 4, and 2, are “consumers of VR,” he says, but what if they could harness virtual reality as makers? “They try my higher-end Oculus Rift and VR content, so I’m always thinking of activities to get them into it. How would they make their first composition?” He wants to offer them the chance to look through a pair of VR lenses and say, “I made that!”

When Ham paired up with doctoral degree candidate Payod Panda [MID ’16] for Panda’s master’s thesis, they began experimenting with “computational thinking, spatial thinking, and spatial reasoning.” Panda was already a skilled coder, and now the duo, along with Luis Zapata [BID ’11, MGD ’17], focused their resources on constructionism in VR—the topic of Panda’s doctoral research. He paraphrases computer scientist and educator Seymour Papert: “If a learner is creating something that is shareable and viewable to other people, then the learner can have a deeper understanding of the topic.” What came next was a surprise to both Ham and Panda—and a huge opportunity for educators everywhere.

The team developed an app called Panoform, a tool that converts two-dimensional drawings made on a paper grid into three-dimensional settings. These can be viewed through an inexpensive piece of hardware called Google Cardboard, which snaps onto a smartphone. “Panoform started as an experiment, almost; we were playing around with 360 photos and VR in general, and we wanted to find a low-barrier of entry way of creating VR stuff,” says Panda.

Anyone can visit Panoform.com, print a contoured, 2-D grid, and draw a setting. After a picture on the grid is complete, it can be photographed, cropped, and uploaded to the website, where the computer reads the curve of the lines and converts the drawings into panoramic settings. The software automatically wraps and maps from the grid.

“In essence, we’re teaching kids how to deconstruct a 360-degree panoramic image,” Ham says.

As Panoform developed, it became clear that in order for it to be accessible both to younger kids and to schools, it was necessary to cut costs and take into consideration the skills younger children are learning. “If we talk about lowering the bar for expense and for hardware, that’s where Panoform is born, because all you need is a phone and Google Cardboard, period,” Ham says.

Ham and Panda presented Panoform at the SXSW EDU Conference & Festival in March, which gathers teachers and innovators over new classroom technologies. Panda presented in June at the International Society for Technology in Education 2017 Conference & Expo in San Antonio, Texas. There have been discussions of best practices and collecting data and feedback to see how Panoform impacts learning. Some teaching professionals have even reached out on Twitter about Panoform.

Lindsey Own, the Makerspace Coordinator of the Evergreen School’s BIGLab in Shoreline, WA, discovered Panoform at SXSW EDU. She introduced it to kindergarteners designing frog habitats. “I thought Panoform would be a cool way of letting the kids immerse themselves in these environments, and a neat spatial reasoning exercise for them too, because kindergarteners develop skills in being able to manipulate shapes mentally.”

To introduce the concept, Own had her kindergarteners draw a class panorama on a giant sheet of butcher paper.
and then wrapped the paper around groups of students so they could experience how Panoform would adapt their drawings. The project, says Own, offered students “the opportunity to look at things through different lenses and different perspectives. It was a great spatial reasoning project for the kids, and it let them create these immersive environments, which is a big learning goal that we were aiming for in the classroom.”

Own adds, “Right now, so much of VR is just consuming other people’s content, and a huge component of technology education is in kids creating their own content—Panoform is the only VR platform I’ve seen for kids creating their own VR content younger than advanced high school students, and kindergarteners can do it. It’s a really incredible platform.”

Now that its reach is expanding, Ham hopes to grow Panoform.com into more of a community site. “Right now, it’s a tool. I want to grow it so the tool is a part of a site that has everything from the blog exchange of ideas to downloadable curriculum materials, pictures—you name it. It will become a full educational website surrounding this tool and the innovative use of it, and then as we evolve the tool, it’s all part of this network of users.”

He’s also working on coloring book sheets that younger children can interact with, as well as implementing the tool in local classrooms, including the Friday Institute for Educational Innovation’s annual boot camp for teachers. Educators at Weatherstone Elementary School in Cary, NC, wrote a grant proposal on the use of VR in the classroom based on Panoform and received several thousand dollars to buy Google Cardboard devices for their students.

San Jose’s Tech Museum of Innovation will feature Panoform in Reboot Reality: a digital experience lab, a permanent exhibit with rotating platforms, including those by Adobe, Google, Facebook, and Stanford University. Described as an "experimental space," the installation offers visitors a glimpse of many hands-on technologies, as well as workshops.

As “simple” a tool as Panoform is, “it proved really valuable to a lot of educators, which is something I was not expecting initially,” says Panda. The process of developing it has also proved invaluable to his growth as a designer, and being able to actually follow through on the creation of a design has been rewarding in a multitude of ways. “We could have had this really nice concept, but if we hadn’t been able to create it, it wouldn’t have had the response it has gotten from other educators, because nobody would have been able to use it.”

Ham imagines a future in which technology like Panoform will become ubiquitous in educational settings and beyond. As a parent and teacher, his hopes for Panoform’s reach are boundless.

“My refrigerator is covered in compositions from coloring sheets,” says Ham. “My kids made those. You go into the genre of VR, and there might be a point when a parent has a gazillion Panoform creations on their phone.”
Cementing a Partnership

How something is made can impact how it’s designed—a principle Assistant Professor of Architecture Dana Gulling impresses upon students in her studios, where young architects learn to bridge technology and design as they innovate ideas for new structures.

For Greg Lucier, Assistant Research Professor in Civil Construction and Engineering, understanding the broader impact of production details in building materials is key to the research he and his students perform as they test structures at full scale in the Constructed Facilities Lab (CFL).

These two disciplines—architecture and civil engineering—while tangential, often did not overlap in the courses at NC State until recently, when Gulling and Lucier teamed up to create an interdisciplinary endeavor that blended the studio learning environment with structural engineering.

Creations in Concrete, a new ARC 503/CE 675 studio that started in Spring of 2017, brought together architecture and civil engineering students to study precast concrete. It’s a type of concrete that, unlike standard concrete, is poured into a mold and cast before being transported to a building’s construction site. Its use in the industry is becoming more widely accepted because it allows for more efficient construction, better quality control, and greater design flexibility than traditional concrete, which must be poured and erected on-site.

The studio was sponsored by the Precast/Prestressed Concrete Institute (PCI), which provides grants to educational institutions like NC State in order to better familiarize students with precast concrete as a structural and architectural material. Peter Finsen, a member of PCI Foundation’s Board of Trustees, kicked off the studio with an introductory lecture. “Civil engineering typically teaches a prestressed concrete course, and [those students] are more familiar with it than architecture students,” said Finson. “But it’s a great experience that provides foundation in the industry.”

“I think precast, probably more than any other building system, requires a close link between design, fabrication, and construction,” Lucier explained. “Those disciplines have to be viewed holistically. With other types of construction, you can do the design and not worry about who’s going to build it, or vice-versa. But with precast, some of the things that make it very unique can also make it unforgiving.”

That link between design and practice made precast an optimal subject material for a studio that sought to fuse the worlds of civil engineering and architecture, worlds traditionally, but perhaps not deliberately, kept separate from one another despite their natural synergy. “Before integrated practices came up, you would get to a certain point in design development and then send it off to the structural engineer,” Gulling said. “But recent innovations in materials like precast have taken a process that was previously linear and created an opportunity for collaboration.

During the studio, nine architecture students and four civil engineering students collaborated on three projects that investigated precedent, component design and fabrication, and full building design concepts. Activities within the studio ran the gamut from reviewing case studies, to touring manufacturing
Preparing the mold for casting, from left to right, Research Assistant Professor Gregory Lucier, Meghan Strahler, Joshua Putman, Afsoon Kangarlouhaghighi, and Elizabeth Macias.

Perhaps the most impactful part of the studio, however, came from the time the students spent in the CFL, constructing and testing full-sized precast concrete panels as part of their final project: conceptual designs for a cidery in Upstate New York. Such a building appealed to Gulling and Lucier because the combination of small spaces nestled within large spaces offered an ideal challenge. And it helped that the site was accessible by the students, some of whom made the journey over Spring Break to assess it after attending the PCI Conference.

For Lucier and engineering graduate students like Meghan Strahler, the Creations in Concrete class was their first exposure to a studio-based environment outside of a classroom, where the emphasis was on creating a solution to an open-ended problem instead of listening to lectures and completing textbook-based problems.

"Working with the architecture students was a very eye-opening experience. Learning to cooperate and communicate effectively was critical," said Strahler. "Visiting precast concrete plants and participating in the casting of wall panels afforded me a feel for what was practical to achieve in construction beyond what design calculations may indicate."

Eye-opening: it's a phrase students and faculty alike used often during the course of the studio, working with a subject that Lucier believes one must witness firsthand to truly understand. "It's one thing to say, 'Weld a steel beam up there,'" he explained. "But if I say, 'I'm going to pour this concrete into this mold and it's going to look nice and it's going to have all the attachments we need to get it on the building,' that's a harder sell until you see it."

For Austin Corriher, who was a senior in architecture at the time he took the class, these real-world interactions with an interdisciplinary focus were both challenging and rewarding. "I've never actually gotten the chance to meaningfully interact with another non-design major in a studio before," he said. "The immediate feedback of someone grounded in the real world came back to help after every design decision, even if a lot of them told us, 'No, this cantilever can't be 60-feet long.'"

And giving the students the opportunity to work together on their designs in the CFL was a large part of the studio's impetus. "We really wanted to use this facility as an opportunity," said Gulling. "Especially in the school of architecture—we have such a great legacy and an interest in having the students make things."

Students and faculty alike came away from the studio with a greater respect for both design and engineering, and they were challenged in their own practices to optimize and innovate their approach to problem-solving. And Finson, who represented the PCI Foundation when he visited NC State for the final critiques, praised the projects and the participants. "Dana and Greg did a great job working together with the students," he reflected. "That kind of collaboration is what makes the studio a success."

A studio team with their second casted precast panel. From left to right: Meghan Strahler, Monique Kowalik, Afsoon Kangarlouhaghighi, Elizabeth Macias, and Joshua Putman.

facilities, to attending the PCI trade conference in Cleveland, to even working hands-on in the Materials Lab with US Formliner, a company that graciously provided rubber for molds which the students could cast on their own.

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It's only a year old, but already the Visual Narrative faculty cluster has come together as a team to find new ways of telling stories—and to offer their resources to community members. Its members are physically spread across campus, hailing from four departments. Of the 20 clusters hired so far by the Chancellor's Faculty Excellence Program, it is perhaps the most diverse.

The cluster includes Todd Berreth, assistant professor of design; Frederico Freitas, assistant professor of history; Tianfu Wu, assistant professor of electrical and computer engineering; and is coordinated by Matthew Booker, associate professor of history; Helen Burgess, associate professor of English; and Arnav Jhala, associate professor of computer science.

Jhala explains that the cluster concept was developed to give faculty members a structure that would support interdisciplinary research in teams that could encourage and support each member's ideas. By spanning several colleges, a cluster offers each member access to far more knowledge and approaches than if they were working alone. Berreth notes, "We each have our projects and our lines of research, including some problems we think are intractable. Someone from another discipline might say, 'I have this technique that might apply to that to solve your problem.' You know your own domain, but someone else's domain might have an application that might help yours."

"We all were committed to that kind of research already in the institutions we were at," he adds, "but here we want to take it to the next level. Rather than saying, 'Here's my project; I want someone to consult me on technology,' we are building a project that has a technological research component at
the same time as history, research, and art and design components.”

And indeed, when they’re all together, ideas and suggestions fly back and forth. The group meets weekly in the Games and Visual Narrative Suite to discuss their progress and brainstorm. Their ideas are varied, and multiple projects are being pursued at once. But what drives them as a unit is the concept of visual narrative: “Our society has increasingly become visual; the data that we get is exceedingly visual. We make sense of the world through narratives, and most of our communication is essentially media direct to technology,” says Jhala. The visual narrative group examines: “the ways in which we can develop new technologies that enable better communication through visual narratives, make technologies that actually understand at a deeper level the narratives that make sense to us and the meaning they provide to us, as well as understanding us through analysis of narratives that we generate.”

One completed project is housed in the James B. Hunt Jr. Library. It’s an activity called (Not So) Silent Movie that was developed last year by the cluster’s artist-in-residence, Hope Hutman. Accessed in the iPearl Immersion Theater, which includes wraparound screens, it offers passersby the opportunity to create short silent films using their choice of movie clips from old black and white Westerns and quotes drawn from Jane Austen’s Sense and Sensibility. Jhala intends to collect data from the installation that considers human-computer interaction.

The group’s largest undertaking so far is the Urban Panorama Project. It’s in the planning and research stages, but the group is pairing with the NCSU libraries and archives in order to develop a tool to geolocate historical photographs of Raleigh. Using images from the archive’s collection (and eventually, they hope, from the State Archives), technologies like Google Streetview, and computer vision and machine learning techniques, cluster members are developing an algorithm that will enable a computer to identify where old images have been taken. Everyone’s skills come into play—Berreth’s architectural knowledge and Freitas’ historical expertise can pinpoint features on buildings that give them a sense of when an image was taken; Wu and Jhala will engineer the algorithms that recognize physical traits of the buildings and landscape.

Booker, who helped make hiring decisions about the cluster, says: “When I look at this cluster, what I think about is how unlikely it is that we were able to do this; it’s not happening anywhere else. It’s a tribute to the Visual Narrative hiring committee that we exist, and frankly to [Professor of English/Women’s Studies] Laura Severin, who gave us practical advice throughout the entire process. It’s a huge, cool opportunity, and I think it’s already paying off because of this Urban Panorama Project, which did not exist in anybody’s mind or heart before the four hires came to campus. I’m genuinely impressed by their collaboration and desire to make things.”

With the help of Mike Nutt, Director of Visualization Services for the NCSU libraries, they are pursuing funding from the National Endowment for the Humanities for this project. Nutt also helped coordinate the installation of (Not So) Silent Movie. “The cluster is special to the libraries for several reasons,” he says. “It’s one of the only clusters that has a humanities component, and just because of what we do and the collections we provide, there’s a natural fit there in trying to uncover narrative-driven research. The other reason it’s important to us is the Hunt Library is a storytelling building; these spaces are made for faculty and students to tell the stories of their research and learning that’s happening on campus. In some ways, they’re a perfect fit for the technology we provide in this building and in D.H. Hill as well, so we recognize that their presence and their founding was a good opportunity for us.”

Jhala, Berreth, and Freitas also received a DELTA Grant for their proposal: “Visual Narrative Multi-disciplinary Project Studio.” The grant “allows us to explore different platforms so we can effectively engage students from all these different fields,” says Jhala. He explains that the tools used in each field, as well as the teaching methods, vary greatly. The grant gives way to opportunities to cultivate what most interests students. Berreth explains: “We could say, ‘bring me your most interesting storytelling idea using these technologies,’ and pitch it to our students, and then the students would pick projects they could get really excited about.” He envisions the outcome of these projects leading to internships, exhibitions, and future career opportunities.

Their goal is to hold classes across the disciplines of the humanities, design, and engineering at the same time slot during a given semester so students in those classes can benefit from cross-disciplinary exposure and collaboration.

Like cluster faculty, students will be learning to “respect other disciplines’ methods and outcomes,” says Jhala. “Through direct interactions with practical projects, they will develop the skills as they go. What I would want students to get out of this is not only the ability to be successful interdisciplinary researchers but also to understand the workflows and work ethics and values of the other disciplines. And more practically speaking, I want them to come out with portfolio projects so they are immediately attractive to industry, foundations, or grad schools, etc.”

In addition to collaborating with the library, the Visual Narrative group may pair with other clusters. Overall, Berreth is enthusiastic about developing solutions that can be shared not just across the university but with anyone: “There are a lot of people that are huge champions of the open source movement, the ideas of open design, certain realms in which you build capabilities and tools and things that you share with the community freely hoping that other people will do the same and everyone’s work can be helped.” Indeed, he’s already undertaken several projects with partners at Duke University, including a “smart trowel” and an interactive table that responds to 3-D objects.

Overwhelmingly, the members of the Visual Narrative cluster and their collaborators are excited for what the future holds. “We will come up with very interesting projects for sure,” says Jhala. “Whatever project we’ll take on, we’ll do very well because of the dynamics we’ve generated in the last year.”
What do you get when you combine the expertise of biology, engineering, natural sciences, and design? It's not a riddle: it's biomimicry. In plain terms, it is looking to nature to seek alternative solutions to human challenges such as food, shelter, survival, reproduction, and health. Finding inspiration from nature to solve problems isn't new; the concept has been around for billions of years.

In 2009, Janine Benyus, the co-founder of the Biomimicry Institute, gave a Ted Talk on biomimicry. In her opening statement, Benyus said: "...we live in a competent universe, ... we are part of a brilliant planet, and ... we are surrounded by genius. Biomimicry is a new discipline that tries to learn from these geniuses and take advice from them: design advice."

One of the earliest examples of biomimicry is the study of birds to develop possibilities to enable human flight. What if we approached design problems by first asking, "What would nature do to solve this?" Generally, biomimicry has involved either designers searching for a particular organism or evolved trait to solve their design challenge, or scientists taking their discoveries and data and searching for someone (a designer) to provide a human-use application. Yet, the two disciplines rarely work collaboratively. What would happen if designers and biologists combined their research processes to explore functional biodiversity? What if innovative design thinking guided the process of scientific inquiry, and design solutions were generated alongside scientific discovery?

This past spring, Associate Professor of Architecture Sara Queen set about exploring these questions in an undergraduate research course, Biologically Inspired Design. She partnered with research biologists Dr. Adrian Smith, Research Assistant Professor of the Department of Biological Sciences at NCSU and Lab Director at NC Museum of Natural Sciences (NCMNS); and Dr. Clint Penick, Postdoctoral Researcher in the Department of Applied Ecology at NCSU. Its focus was exposing students to the field of biomimicry and other intersections of design, engineering, biology, and ecology. More specifically, the students—a heavy concentration of design with a sprinkling of science students—leveraged current research on social insects currently being conducted in tandem with NC State and NCMNS. (Smith and Penick’s research interests are in the social behavior of certain insects, especially ants.)

Queen wanted to look at "how biologists understand natural systems and how design thinking can help scientists look at these systems differently." Her reasoning was simple: "Scientists will ask research questions in certain ways, but as soon as you get someone who doesn't understand that disciplinary language—to ask uncertain questions—you can get fruitful results," thus transforming biological inquiry by introducing design thinking and vice versa.

Because of the course's composition, its progression was more conducive to the approach of using design thinking to work through problem-solving in a research environment. Smith and Penick introduced students to the world of ants and the 16,000-described species, including information on...
the diversity of colony population, social and societal behavior, lifecycles, anatomy, nests, and some unique characteristics that help ants survive their particular environment. In addition, they employed research techniques based on analysis, observation, testing of hypotheses, and a myriad of established lab processes.

The students researched ants and were given a handful of under-explored topics related to their attributes that they were asked to pursue in groups. There are not a lot of scientists studying ants and there are many areas of ant biodiversity that are interesting, undescribed, and undiscovered. The students uncovered comparisons and results that could be applied to design problems and applications for humans. This led students to the Evolutionary Biology and Behavior Research Lab at NCMNS, where Smith and Penick are conducting actual research. For a month, the teams conducted research in the lab on topics that included ant architecture (looking at ant nests and how they build to live); collective behavior (ants are masters of collective living and do things cooperatively); brood care (how ants raise their colony and behavioral structure); and cuticle pattern (the skin pattern and texture of ants).

Each group dove into the information and research available and developed its hypothesis based on elements or characteristics of their topic. “Based on their findings, the students proposed opportunities to apply their insights to human systems,” says Queen. Instead of standard practice in which students are provided a design brief and required to answer specific questions to formulate solutions, these students were writing the brief for the design projects—they were question-seeking.

An interesting twist for Smith was that “this was an experimental course, and we placed designers in the lab and asked them to put a design lens on solving nature’s problems.” He further shares that, “it’s likely a lot of the students hadn’t taken biology since high school; however, they were doing science experiments—actually doing legitimate research projects. This may have made science more attainable when we put it in their language.”

The group who chose ant architecture, for example, decided to look at the correlation of how ants build nests and how humans build cities with the hope of finding potential inspiration for larger design challenges of density. Ants do not use a blueprint when building, and students wanted to better understand how the space in a nest is built to meet their needs, such as distance and location in relationship to essential resources like food and water. This is an untapped area of research, and there has been no data showing comparisons until now.

Based on the fact that nests are made up of tunnels and chambers, students identified several common city-form classifications and compared them to ant nest structures that use similar patterns. Using five different cities and five different ant species, they found several correlations. None of this data has previously been captured and can now provide future discovery areas for scientists and researchers.

With the assistance of Christian Krakow [M.Arch ’03], an adjunct faculty member in architecture, the class was able to create an aluminum cast of an ant nest (pictured at left). On a field trip to Pinehurston NC, the group used the material process of casting to cast the ant nest. The results were compared to many other casts of the exact species of harvester ants by internationally renowned ant scientist and Distinguished Research Professor of Biological Sciences at Florida State University, Dr. Walter R. Tschinkel. The two nest casts have no resemblance, which was a complete surprise to Tschinkel, Smith, and Penick.

Amazingly, the findings from this exercise opened up a broader understanding of ants. Up until now, research on ant nests has been done species-by-species; however, this casting suggests that scientists should also highly consider environmental factors in nest design and form. This, again, is another interesting finding that will benefit researchers as they move forward.

For Lisa Wong [BGD ’17], who participated in this course, “the interdisciplinary nature is what originally interested me, and it was a great way to become aware of other disciplines to broaden my horizons and open my mind to understand how others think.” Wong would encourage any students to consider taking this course and admits, “It was so much fun; even though it was a lot of work, it led to so many possibilities.”

What started as an experimental course has led to valuable advances for Smith, Penick, and other ant scientists, as each of the student groups uncovered untapped areas of fertile discovery. “What was really awesome is that all the questions by students were legitimately novel questions—for these ant scientists. The students jumped in...
quickly to question everything, something that, as designers, is encouraged. Over and over again, the students were working on questions that were on the edge of the field of known biological research,” Queen emphasizes. “The work wasn’t just done in isolation—it has changed the way Adrian and Clint are doing research in their labs.”

Another valuable outcome of this course was the opportunity for students to present their findings at the Science Café in early May. This public forum is an informational series for researchers and other experts to share topics related to natural sciences. The weekly event takes place in the Daily Planet Café, which is housed in the NCMNS. Students presented their projects to a large audience that led to interesting discourse.

“I think that the class explored the value of design thinking and design inquiry beyond the traditional bounds of practice,” shares Queen. And as a result, they learned quite a lot. “It is important for our students to understand how to work in interdisciplinary teams with different languages and processes—and collaborate for novel and transformative outcomes.”

New Leadership

The College of Design is proud to have David Hill at the helm as he leads the School of Architecture into a bright future.

This summer, Professor David Hill, AIA, was officially appointed as full-time Head of the School of Architecture. The appointment followed an internal search in which the School faculty unanimously recommended the change from interim to full-time appointment.

“The School of Architecture at NC State is well positioned to bring new vision and innovation to architectural education,” said Hill. “The school has a legacy of student success and excellence in design, research, and community engagement. We have gifted and dedicated faculty members, and our connections to professionals in the practice are strong. I am deeply honored, as an alumnus of the program, to have the opportunity to oversee the school’s future growth.”

“David couples energetic and collegial leadership with passion about design excellence and architecture’s role in creating a vibrant civilization,” Dean Mark E. Hoversten said in the announcement. “I look forward to working closely with him as we move the College to the next level of outstanding design education.”

Hill has led graduate and undergraduate design studios, digital representation courses, and seminars that focus on integrative digital simulation processes, architectural prototypes, and design strategies for coastal regions.

Prior to joining the Architecture Faculty, Hill worked for Hashim Sarkis Studios in Cambridge, Massachusetts, and Pearce Brinkley Cease + Lee Architecture (PBC+L) in Raleigh, North Carolina. Several of his projects at PBC+L—including academic buildings and bus shelters for Wake Technical Community College, entry signage for RDU International Airport, and classroom buildings on NC State’s campus—have won various levels of AIA design awards.

Hill holds a Bachelor of Environmental Design in Architecture and Bachelor of Architecture from NC State University, and he earned a Master’s in Architecture from the Graduate School of Design at Harvard University, where he was awarded the Faculty of Architecture Design Award.
Mary Hauser [BID '01, MID '04] made the most of her time while pursuing undergrad and graduate degrees at NC State. She took advantage of the many opportunities to gain exposure, learn new things, and meet others. "Having that exposure to the different areas of campus, whether it was the theater, music department, design, textiles, an internship—all of this was important to me, and still is. I would not trade these exposures or the time I spent on them for anything, because each of them has influenced where I am and how I can go back and interact with campus."

Today, Hauser is the Associate Director & Registrar at the Gregg Museum of Art and Design, a position she loves that perfectly combines all her interests. The Gregg is part of the NC State Division of Academic & Student Affairs and was recently relocated to the site of the Historic Chancellor's Residence at 1903 Hillsborough Street. This new location includes a major renovation and construction of more than 15,000 square feet. "The new location is going to have a lot of benefits. Being situated on a street that everyone knows the name of will be a help getting people here, and having our own face and front door will be another valuable change," says Hauser. Prior to its renovation in 2015, the museum was housed in the Talley Student Union, which posed challenges of awareness, location, hours of operation, and space.

As an undergrad, Hauser was encouraged by Vince Foote (FIDSA and Professor Emeritus of Industrial Design) to explore swing studios in textiles with Susan Brandeis (Distinguished Professor Emeritus of Art + Design), which evolved into a flair for handbag design. After graduation, Hauser continued to take courses, and Brandeis championed her to consider graduate school as a way of exploring additional options. She considered costume design, teaching, working as an independent artist, or museum work. "I was able to do internships with museums that enabled me to try out different areas, like curatorial and registration," she shares. One of those internships was offered through the Gregg. "An internship at the Textile Museum (in Washington, DC) solidified my interests, and I realized that was the direction I wanted to go in," says Hauser.

All of Hauser's exploration, experience, and commitment paid off when during her thesis show, two women she had worked with at the Textile Museum showed up. "They handed me a card that said, 'We miss you, and congratulations; how would you like to come back to DC and work?' It was pretty amazing, and I accepted the job. I always tell my interns now: Do internships. I can't promise you a job, but it gets your foot into the door and exposes you to the culture, the work style, and the people, and if they don't have a job there, they may know someone who does and can give you a reference."

As a registrar, Hauser keeps track of the museum's more than 35,000 objects, including items within textiles and clothing, ceramics, folk and Native American art, photography, design and decorative arts, and outsider arts. “These items range in size from a button to our largest piece, which is the fountain that was outside of Talley.”

When asked what a registrar does, Hauser says, “I like to describe it as the curator knows what the objects are and knows their stories; a conservator does more interactive, fixing, or preparation of the object; but the registrar is the person who knows where and how the object is stored.” This includes the physical location of the objects down to the shelf they are on, whether a piece is owned, and the condition of each item. “In our institution we try and keep track of everything within an arm span or within 50 objects—we break down the room in this hierarchy to get to a specific object. We should be able to find things within an hour.”

Every item in the collection is catalogued with a three-part numbering system that allows for meticulous tracking and identification. The system includes
the year of the gift, the donation group or donor, and an object number that distinguishes whether it is a single or multiple items, like a pair of shoes. These items then get catalogued in a digital database used by museums, another layer of identification including the artist’s name, the origin, the size, and where it is stored in the building. This may be the room, shelf number, or cabinet.

Another responsibility of a registrar is to understand the variable storage and environment needs of each piece for optimum preservation. “In a perfect world, we would have really diverse storage, but we actually have all unified storage,” says Hauser. Temperature and humidity are constantly monitored. “One of the biggest threats to a collection is when a system fails and you get immediate temperature change,” she explains. To diminish this risk, objects are buffered, or stored in boxes and wrapped in tissue or plastic, which protects them from mold, dust, and temperature changes.

The collection is vast and diverse. Roughly 85 percent of it can be researched online. With advance notice, the public can gain access to collections or items. “People come to look at our objects for different reasons,” Hauser says. “There is so much more when you see an object in person that you can’t get online. It is totally different in person.”

As a public institution, the Gregg offers educational opportunities, internships, exhibitions, film screenings, lectures, a library of more than 3,000 books related to objects within the collection, and collaboration with university faculty to enrich courses through visits, tactile experiences, and informative lessons. “We cannot show more than one or two percent of our collection at once,” Hauser notes. “We collect to help the University, whether through classes or cultural opportunities. It is a less well-known way of working as a museum.”

Hauser offers a unique perspective when working with faculty who want to incorporate objects from the collection into their courses. “We have had designers designing houses come in to see historic examples to inspire new work. We have some clothing construction classes that come to look at how garments are made.” Students have been able to learn from some of the textile collections how garment construction was done in the past. By learning from the technology of the past, they can focus on creativity.

As a student, Hauser took the Pre-Industrial World Textile seminar by Brandeis, which was an influential and hands-on introduction to the world of textiles and was cultivated for more than two decades with the Gregg. For the past few years, Hauser has been able to collaborate with Brandeis and provide valuable insight on items within the collection that can be included in the seminar. “My understanding of the collection has made this class richer,” Hauser says. “[Brandeis] brought her experience as a teacher and textile designer, and I was able to bring my experience as a student and museum professional to create a pretty awesome opportunity.”

Nearly all of the Gregg’s 35,000 objects are donated. Hauser says fewer than one percent of the collection is purchased. “Usually [collection items are] purchased by Friends of the Gregg, and then they donate them.” Anyone can financially support or donate objects to the museum’s collection.

Hauser has a hard time choosing her favorite part of the job. “I love organizing, but I like to be able to do that so that I can find the piece that will light someone’s eyes up—whether in an exhibition, a class, or a research visit, or through an internship—to show them something they have never seen before or that will change the way they think about themselves, the world, or their work.”

She reaffirms the Gregg’s commitment to working for all students on campus. The collections within the Gregg include items that enhance the interests and experience of a broad spectrum of individuals. “All of these things wrap together to make us who we are, and we are intent on being for the entire university and offering things that make all students from any background ask questions or think about their world differently.”

“It is neat to be in a space where so much of what Raleigh is becoming and the Triangle is becoming is influenced by a place I feel a connection to—the College of Design,” she says.

The Gregg Museum is now open, and it should be noted that the architecture and landscape architecture firms that led the design included many alumni.

Design of the addition began in 2011 by NC State College of Design alumnus Phil Freelon, FAIA. Kenneth Luker, AIA, of Perkins+Will was the lead designer, and the firm’s Derek Jones was the project principal overseeing the design team. Luker is an active supporter of the College of Design and is on the Designlife board.

Surface 678 was the landscape architectural firm whose President and Director of Design, Walter Havener, PLA, is also an adjunct of the College and active on the Leaders Council.
Marguerite (Peg) Gignoux [MID '04] was a non-conventional student when she attended the College and has evolved into a non-conventional artist. "Teaching artist," "textile artist," and "community artist" are a few of the terms she would likely use to describe herself.

"I work in community and make monumental work and believe art should be accessible, beautiful, and fun. I want to bring art to people that might not have it in front of them, and also defend my own art practice to prove this duality of being private and public," she emphasizes.

Gignoux came to the College to pursue graduate coursework in textiles and fibers. At the time, the Art + Design program did not offer a master's degree, so she, along with many others, enrolled in the graduate program of Industrial Design. (The Art + Design graduate program came about in 2005, with the first graduates in 2007.)

"It was thrilling to be in my 40s and intersecting with women in their early 20s who were at the start of their own discovery with the arts and themselves," says Gignoux. "They were fresh and buoyant, and I wound up really resonating with them. Today I maintain friendships with them, 20 or so years later."

The College and the program provided Gignoux with exposure to technology, the fibers lab, and faculty, which she says was invaluable. "I knew Susan Brandeis and her work, and I knew I would be supported by the many resources available at the College. I wanted people [faculty] at the highest level to have the language of textiles to help me grow as an artist."

After completing her graduate degree, she continued on a path of creativity. She teaches at numerous crafts centers, higher educational institutions, community centers, libraries, nonprofits, pop-up studios, works on large-scale commissions, leads community projects, has a robust personal art practice, and does exhibitions.

"I have all these partnerships. Some of them repeat every year." She teaches at Elon University during the winter term and does projects at Durham Academy with sixth graders. Recently she collaborated on a children's picture book project with a local nonprofit, PORCH, People Offering Relief for Chapel Hill-Carrboro Homes. This is an all-volunteer community organization that focuses on food relief.

The book was developed in collaboration with the afterschool youth and ESL students from a local middle school under the direction of writer Susie Wilde. Once the story was complete, Gignoux introduced the world of textile design to these students, using a myriad of techniques including dyeing, printing, and illustration to tell the story. Their creations were integrated into the book by designer Steve Godwin.

The final result, Planting Hope, is a beautifully vibrant "book for kids by kids." Sales proceeds support the mission of PORCH.

Another community art project Gignoux developed is Wrap Your Head Around It (WRAP), which unites a variety of partners, patients, hospitals, clinics,
artists, universities, and crafters to write, print, dye, sew, and create one-of-a-kind scarves that are given to cancer patients and the cancer community. The scarves are more than just wearable items, and for the artists and recipients, their meaning speaks volumes.

The project evolved through community involvement with youth poets that included dyeing and screen printing poetry on cloth. "That was thrilling, and I wanted to figure out how to keep getting text into textile, and coincidentally, I had a number of female friends and acquaintances who had been affected by cancer. I thought about the power of bringing words into silks and wrapping people—wrapping women's lives in that."

Through hard work, networking, and a strong commitment to succeed, Gignoux put the pieces together to launch her vision. The poet Grey Brown was instrumental in "creating a body of words based on the randomness of words." Together, they built up text through events open to the community.

"We built up language together, and words and comments. These women were fantastic in unpacking their sorrows, their fears, their laughter, and their humanity, and that prompted interesting wordplays—sometimes a distinct poem, sometimes just words. We made screens, and I built that language and then tapped into people I knew throughout NC who had access to fiber studios," Gignoux describes.

After the words were compiled, the textile work began. Gignoux gathered trained textile designers and untrained enthusiasts to introduce the artistic process of creating the scarves.

In this community setting, individuals gathered, learned from each other, shared stories, and made something special. Some had never dyed or printed on cloth before, she says. "They start out, and they may make a mistake—blips or blops—and sometimes they nail it, or other times they have some very odd pieces." She saves these extras and provides them to the next group, who may not see a mistake but a perfect addition. Gignoux considers this "unifying the cloth. It can be a teaching moment for me or a discovery moment for another."

"We save everything, and by hacking down some of these odd bits and joining them with quieter sections or vibrant strong pieces, the person actually creating the work gets to be a curator, to take things that wouldn't ordinarily live together and make their own expression," says Gignoux.

The project grew over a period of six months. "People contributed with dollars and with their time." She has been able to conduct WRAP twice thus far, with future plans to continue and grow it.

"We have made 400 scarves that have gone to 18 different states," she says—her tracking is imprecise, so it's possible other states—maybe even other countries—have received scarves.

The scarves are a symbol of hope, compassion, and strength. "Instead of making a massive thing that stays in one place, these go off and have their own adventure," Gignoux says. She has exhibited groups of scarves, and finds gratification in their "release." She adds, "this is one of the nice things about working with a textile that is an actual wearable. It has other actions and purpose." The wearers use these scarves in many ways and create their own meaning for them.

"I even have had scarves that were sent to people that were ill and passed, and then someone has brought that scarf back to me, and it's been worked on and then released again."

Each scarf is unique, and silk is always the predominant fabric. "Silk is the most comfortable cloth to wear. It is radiant, it takes color beautifully, it's warm and cool to the touch. It has this arc of usefulness and beauty that makes it important. Even though crochet hats keep you warm, often women don't feel beautiful in them. [Silk] is about wanting to find an expression of beauty with the cloth, and maybe some irreverence with color. Women wear these as armor, and in many ways, I think the silk matters."

In her next chapter, Gignoux hopes to bring this project to the Boston area by making connections with organizations like Dana-Farber Cancer Institute and other schools, private businesses, and creative communities.

Gignoux's project has brought together a community of people who've shared personal experiences, gratitude, empathy, and inspired those affected by cancer—that's a wrap.

If you are interested in supporting WRAP or would like to learn more, please visit: gignouxart.com.
Five years ago, when the leadership of Andropogon Associates, a Philadelphia-based landscape architecture and ecological planning firm, experienced a transition due to retirements, Emily McCoy [LAR '08] stepped up and suggested that they do something with the shelves upon shelves of research they had kept but left largely unexplored. This included specifications from the '80s on New York's Fresh Kills Landfill, standards and drawings from the '80s and '90s in Central Park, Prospect Park, and other sites throughout the country. “There was all this institutional knowledge that I feared was going to be lost,” says McCoy. She took the lead on formalizing, archiving, and digitizing the information that had been collected. Later, the process evolved into the creation of the Integrative Research group within the firm, which seeks to “embed information learned from our 40 years of past work into our process moving forward, and then making those lessons learned open source within the profession, which was at first hard to swallow for some folks, but we decided at the end of the day this was part of our mission.”

The firm hired researchers and is committed to partnering with clients in education who will support this mission of opening their findings to the public. At the University of Pennsylvania in Philadelphia, for example, members of the firm were working across the street from researchers in the field. “We said, ‘let’s work together to understand and learn from our project and then use this information to advocate for more green infrastructure in the city.’ Now in every project, we look for these research opportunities.”

McCoy serves as an Associate Principal and the Director of Integrative Research for Andropogon, which in addition to being a research-based firm promotes building for long-term sustainability. McCoy researches “high-performing landscapes” to foster sustainable best practices in landscape architecture. She didn’t originally set out in the direction of landscape design but discovered after college that it complemented her other skills.

McCoy completed a bachelor’s degree in ecology from Appalachian State University in Boone, NC. After graduation, research positions were scarce, and she ended up working in a nursery outside of Blacksburg, VA, for three-and-a-half years. As a horticulturist there, she met a number of landscape architects and was drawn to the field. “I was exposed to landscape architects. I talked to them and grew for them and realized that there was a lot of improvement to be made with regards to planting species and types, to where they could be improved upon from an ecological perspective. There were a lot of missed
opportunities.” She returned to school at night and took drafting and landscape architecture (LAR) classes. “I decided LAR was something that I felt passionate about, and it fulfilled the other side of my brain that I hadn’t been able to engage since I was an adolescent, looking at a more artistic way to express myself.” NC State’s College of Design (COD) caught her eye, especially for its service to the community. “They have gone to great strides to expose those in secondary education to the design disciplines with Design Camp and other programs, and promote the power of design thinking. It’s very awesome for the state of NC.”

McCoy completed a master’s degree in LAR and a GIS (geographic information systems) Certificate. Andropogon’s mission spoke to her. Among other things, it is “committed to the principle of ‘designing with nature,’ creating beautiful and evocative landscapes inspired by the careful observation of natural processes and informed by the best environmental science.” Andropogon was a contributor to the creation of the SITES rating system and uses its framework in their projects, focusing on ecologically balanced and socially responsible landscapes. It is becoming more widely-used and respected. SITES is like the Leadership in Energy and Environmental Design (LEED) rating system, only “more comprehensive for sites,” McCoy explains. The two certifications are integrated now, but “SITES addresses predesign and planning, design, construction, and post-occupancy. There are steps and performance aspirations for each of the stages of the design process, starting at the beginning credential for site assessment all the way through to, are you going back to the site to see if it is still performing to those goals set early on in the project? It is a step-by-step framework through the design process to help you as a designer and, with the client, you are pushing the sustainable goals in all aspects in a built piece of work.”

In most building projects, only five to ten percent of the budget is allocated for the site. “Communicating the value of what landscapes can do if they are done well is still a huge challenge,” she says. “Landscape interventions are undervalued or overlooked as opportunities to do a lot.” Nevertheless, she is a firm advocate of building for environmental and social resiliency and extends this philosophy to work with the federal government. Andropogon has been commissioned by the U.S. General Services Administration to write a white paper recommending approaches to renovations and new construction of government buildings such as courthouses, offices, and ports of entry. The recommendations state that “building and site commissioning don’t start when the project is done—they start during pre-design and planning as a part of this process. Having SITES credentials and/or being well-versed in a landscape commissioning process will give any design professional an edge on these federal government projects that now require SITES.” As a result, a commissioned building and landscape will be more affordable, with operational costs decreasing by about 20 percent over the life of a typical project. Not only is this a tax-payer incentive, but it would allow the government to reduce operating costs.

“For me personally, [SITES is] about proving that you have a high-performance system. There are so many folks in the industry who really throw around the words ‘sustainability’ and ‘regenerative design’ when, in fact, if you went back to assess this work from an objective standpoint, perhaps it wouldn’t meet that standard. But the great thing about SITES is that it does set a minimum standard,” McCoy affirms.

Andropogon remains a small firm, with a Raleigh branch established in 2014 that McCoy leads. While she would like to see more projects in the Southeast that support Andropogon’s mission, she’s had the opportunity to work on several exciting assignments like the University of Pennsylvania’s Shoemaker Green, the U.S. Coast Guard Headquarters, Wellesley College’s Global Flora Greenhouse, and the Phipps Conservatory for Sustainable Landscapes.

“Sustainability is different for every project. Our best clients are those with a shared mission, that have a very positive look to the future, that the future can be in the present. There are so many folks in the industry who really throw around the words ‘sustainability’ and ‘regenerative’ design and it can be regenerative,” she says.

More recently, she became involved with Georgia Tech’s Living Building, which utilizes an “integrated approach to thinking about the built environment” that requires a building to produce its own energy on-site and collect and reuse water so there is no runoff. “We have five Living Building projects right now either under construction, completed, or in documentation. We have become known as specialist landscape architects in the Living Building Challenge and achieving that accreditation.”

With all of Andropogon’s research and aims for accountable and sustainable buildings, the future looks beautifully curated.

“What we do is the blending of art and science. You always have to balance environmental, cultural, and economic sustainability performance metrics with the qualitative aspects of design like inspiration and beauty, the things we adore as designers.”
"For me, teaching was a calling," states Distinguished Professor Emeritus of Art + Design Susan Brandeis. For more than 35 years, she has been sharing her passion, know-how, talents, and wisdom for all things creative at the College of Design. She is an unforgettable teacher, and her continued relationships with alumni are a testament to her influence. "There is nothing better for me than to have these students be enthusiastic about what I am teaching and to have the lightbulbs go on as they say, 'I never realized that before.' This is a huge gift."

Alums from the '80s and '90s, as well as current students, attended a recent solo exhibition of Brandeis's work at the Cary Arts Center. "I have a firm studio practice and I love that, but the reward for me is that I love the students," she shares. "I see teaching as a lifelong personal relationship."

As early as 7, Brandeis was stitching, knitting, and crocheting. During her undergraduate experience, she realized she could do this for a living, which led her to pursue master's degrees in fine art in textile design from the University of Kansas and art education from Indiana University. "In my bones, I knew I wanted to teach. The symbiotic relationship between learning and teaching, and between making and teaching others to make, is really important to me," she emphasizes.

Brandeis was pivotal in developing the fibers and textile program at the College of Design. She was offered a full-time position by Professor Emeritus of Art + Design Charles Joyner. "I was lucky. I worked extraordinarily hard for a lot of years," she says. "I knew what kind of program I wanted in this context, broad and flexible, so that students—whether they wanted to apply their skills to art, craft, or design—had a place here."

The fibers and surface design program flourished under her efforts and guidance. The program has experienced tremendous growth since the days when the only resources were two print tables and a couple of looms. "One of the things I felt was important for the fibers and surface design students over the years was to have firsthand access to historic examples of textiles," Brandeis states.

This dedication to exposing students to "real objects" and providing "as much ammunition for their creativity as possible" resulted in a more than 20-year relationship with the Gregg Museum of Art & Design. "[Museum staff] worked with me to build a collection that I can use to teach the World Textile seminar from real objects every week," she explains (to read about the Gregg museum, see story on p. 33).

Additionally, Brandeis was a founding faculty member of the former Anni Albers Scholars Program, a dual degree with the College of Textiles that offered degrees in Art + Design as well as Textile Technology.

The special topics and techniques taught by Brandeis are vast. She has expanded her craft through exhibition, lectures and seminars, writing, and research. From screen-printing, surface embellishments, embroidery, dyeing, and design fundamentals to a Pre-Industrial World Textiles Seminar, she has shared her passion with students of all levels. "I am not a cognitive teacher; I am intuitive. I listen to the student and watch carefully and see what information they are ready for, because nobody learns until they are ready for the information," she says.

Throughout, Brandeis has maintained a constant and somewhat hectic pace. She has taught summer courses at Penland School of Crafts, Arrowmont School of Arts and Crafts, Haystack Mountain School of Crafts, and Oregon College of Art and Craft, among others. She is the recipient of three visual arts fellowships from the North Carolina Department of Cultural Resources, has published numerous articles, and is the founder of the Southeast Fibers Educators Association (SEFEA).

Her mentor, Budd Stalnaker, once told her, "I teach for the long-term," which Brandeis admits she didn't understand as a student. However, over the years as a teacher and mentor, it began to make perfect sense. Through many "aha" moments that students have experienced, Brandeis has shared the rewards. "If I can plant seeds that blossom throughout a student's life, that is what I am looking for," she says.

The next chapter in her illustrious career is quickly forming: "I am embarking on a new way of teaching—through authoring books," says Brandeis, who has just signed a contract that may provide a lasting legacy of teaching expressive stitching to a wider audience. "It is a way to articulate what I've done for 35 years in the classroom," she says.

"This is where I am focused now," she proclaims. Brandeis explains that in the art of stitching, "an aggregate of stitches comes together to make collective marks that are expressive." Even in retirement, Brandeis's career is like these gatherings of stitches—touches here and there, in the classroom, the studio, and in her future pursuits, that piece together an expression of her love for art and for her students.
Growing up in Detroit with a mom and grandfather who were professional artists, Kofi Boone always considered himself a creative. But a career in design—specifically landscape architecture (LAR), a discipline in which he now teaches as an associate professor—wasn't on his radar until he took an ecology class in high school, where he discovered a passion for the "relationship between art and nature."

Recruited to the University of Michigan for Mathematics, Boone instead chose natural resources and eventually LAR. It played a formative role in his studies, and during his internship at Carol R. Johnson Associates in Cambridge, MA, in coming to understand the history of public spaces and how environments impact societies. "I realized that I didn't know there were people who designed the outside world," he said.

While a student, Boone learned about the Environmental Justice (EJ) Movement, a field in which he later carved out a small niche of specialization within the broader scope of LAR. He saw a need to innovate, to engage new people and explore methods that could empower communities in the environmental change process. He worked at SmithGroup JJR as a site designer, and although he had not initially planned to pursue a career in teaching, the desire to combine his firsthand experience with his extensive studies eventually propelled him in that direction. As it turns out, mainstream EJ rose to prominence from PCB landfill protests in Warren County, NC, in 1982. And the first mainstream LAR publication to reference EJ was Community Design Primer in 1990 by Randy Hester, a former LAR faculty member.

"Environmental justice is an important part of the struggle to improve and maintain a clean and healthful environment," Boone explained. It's a movement that seeks to push landscape architecture beyond the common misconception that it's merely a means of beautification. He saw key leaders in the environmental justice movement spring up from the grassroots—through people of color and activists in direct proximity to areas of negative environmental impact—a contrast to many designers who chose to practice landscape architecture in part because they believed it was a risk-averse option.

"A lot of our profession is determined by people of power and money," said Boone. "A lot of those people are not people of color. For [those] facing these issues and taking a public stand, it can be politically contentious. But now we're in a new time."

Cities are growing, suburbanization is continuing, and creating fair access to healthy, safe places for all—the things many grassroots activists have advocated for—are becoming more attractive to mainstream LAR practices. The American Society for Landscape Architects now has an entire network of professional practices specializing in environmental justice issues—a network Boone himself helped found.

Now on the Board of Directors of the Landscape Architecture Foundation, Boone is part of ongoing discussions about environmental justice and social equity within the practice. He has seen more and more students approach the profession with ideas about how to use LAR to address issues of environmental justice. "Our students are coming from cities that flood a lot, have droughts, water restrictions, overcrowding, and air quality issues. Also, the wave of development reshaping American inner cities has attracted students that want to harness those forces to celebrate the cultural heritage of people and places through landscape architecture.

DesignWeek in the Spring semester of 2017 fell right in line with the goals of Boone's interest in environmental justice. Students and faculty in LAR, the School of Architecture, and other organizations within the state, studied the effects of Hurricane Matthew on negatively impacted communities in order to create a plan for future resiliency (learn more on p. 4).

"We can't rely on the same ways to solve problems," Boone explains. DesignWeek positioned LAR as a means of helping with the health, safety, and survival strategies needed by communities to stay out of harm's way or to repair and recover quickly in times of crisis or disaster. That includes working with human and ecological systems to protect homes and community spaces, essential services, food, increasing environmental benefits, and protecting habitats. "We're creating opportunities out of the changes that are happening in the world today. For the first time, all these things are creating an interesting convergence that is helping to define what landscape architecture can be for the next century."

Boone will be presenting at the next Urban Design Conference, "Urban Disruption and the Equity Challenge," to be held March 14, 2018, at the Raleigh Marriott City Center.
For Distinguished Professor of Industrial Design (ID) Bryan Laffitte, life changed in high school when his now wife of nearly 40 years, Lucy, and her family moved to Tallahassee, FL. Laffitte grew up mostly on his grandparents’ farm in a very rural area near the Gulf Coast. He spent a lot of time fixing farm equipment and tools. “Everything was coated with rust, and everything broke. Everything was exposed to the elements, and everything was used, because to buy a new tool was not an option,” he shares. But this was the life he knew and remembers fondly.

Lucy’s family moved from Boston, and immediately Laffitte realized they were special. “Her dad was an MD from Harvard and had gotten his undergrad from MIT, and wow, these people were different,” he states. “I was attracted to her and her family, and something really clicked.” He was also drawn to Lucy’s brother-in-law, Sam Bush, and he felt that meeting the family was like “finding the thing that you were always hoping to find.”

Laffitte spent time in Pennsylvania with Bush, who taught woodworking at The Hill School, an influential boarding school. Bush was an alumnus of Hill and also a master woods craftsman who trained under Karl Pacanovsky in the true European apprenticeship methods.

There, Laffitte was introduced to an environment that he did not know existed. The woodworking studios were full of amazing, “gleaming” tools and machinery: “the condition of the tools and the knowledge of how to use them was so deep,” states Laffitte. “I was seeing something that I had wanted to see but not knowing I wanted to see.”

When the couple met, Laffitte was doing steel construction. When Lucy headed off to Middlebury College in Vermont, he decided to attend community college, where he buckled down and made straight As, with the intent of transferring and convincing Lucy to follow him. He settled on the University of Oregon at Eugene. “I needed a place she would like. She was studying natural history, botany, biology, and forestry—and there was no better place in the world than Eugene for this. All of the trees; the Cascade Mountains; the Pacific Range was 70 miles west, and you were in the middle of eco-nirvana.” And Lucy followed.

He took classes in fine art, metalsmithing, and jewelry making, which he didn’t love, but found himself interested in the forging and casting. He continued his studies at night at a local community college taking machine shop, while pursuing his undergraduate degree during the day.

Eventually, Laffitte realized he needed to go to graduate school to sustain his family. He decided on NC State, and was accepted into the Track 3 program.

There, he brought together his knowledge of working with machine tools and drawing. “I just started to draw like mad—I had never poured myself into something so much. Vince Foote was my teacher for four years, and I never met anyone so insightful and honest. He could pick out what was right and what was wrong.” Laffitte credits Foote, FIDSA and Professor Emeritus of ID, for keeping him motivated. “Nobody ever pushed me that hard, and I really loved it. He was a fantastic critic, and I learned what a blessing that can be—to have someone who can see what is wrong, and can and will tell you.”

After graduation, he worked at IBM until Foote told him of a friend at Arizona State University who needed an assistant professor. That was the beginning of his teaching career. His next position was with Carnegie Mellon University. Laffitte was not a fan of cold winters and, as luck would have it, he landed a position at NC State in 1993.

Laffitte reunited with his mentor. For the next 15 years, they worked as colleagues, collaborating and team-teaching studios. “I got some intense training,” Laffitte interjects. “[Foote] would let me go first and then come along behind me and correct everything I did, in front of the class. It was in good humor, and it took me 12 or 14 years to get where I wouldn’t totally miss something.”

Laffitte impresses students with his amazing drawing talent. A motorcycle is often the image of reference, which he effortlessly sketches with his signature grace and fluidity. “I do love to draw motorcycles,” he quips. “I sold my 1967 Triumph Bonneville 650 in order to go to college, and I still dream about it, with its exposed machinery, beautiful form, and all its metal.”

Mentoring and encouraging students is where Laffitte—and his students—find the most reward. “I get motivation if I am really focusing and really connecting with what the students are doing and pushing them exactly where they need to be in order for them to get where they want to go. When they graduate and get a job in the field that they always wanted to work in, this is something that the entire faculty contributes to,” Laffitte reflects. “That is the satisfaction that makes the difference.”
Denise Gonzales Crisp describes her career as “one big long-form improvisation.” The Professor of Graphic Design began her career as an illustrator, then became interested in typography, design, writing, and teaching. “I feel like I have a very powerful ‘true north’ that I just kept niggling at, my whole life,” she says. Despite “things that kept me veering off, I have always maintained a pretty powerful sense of what is important to me.” And it turns out that that’s making something out of all her passions.

Before attending college, Gonzales Crisp worked in a print shop that used A.B. Dick technology and was entranced watching a technician do paste up. Both the manual work and the engineering aspects appealed to her. She began her studies in fine arts and illustration, receiving a bachelor of fine arts degree from ArtCenter College of Design in Pasadena, CA.

Her first professional work experiences include illustration for top-tier clients, including Glamour and even Playgirl magazines. But the experience was “lonely.” Design, on the other hand, seemed vibrant and dynamic to Gonzales Crisp. “Designers assemble and direct a lot of different people, like the photographer, the copywriter, the printer, the typesetters—it’s more like being an orchestra conductor, whereas an illustrator is playing a particular instrument. I was fascinated by it.”

She was privately tutored in typography by a pupil of Josef Müller-Brockmann, a renowned Swiss graphic designer and teacher. Then she took a Photoshop course in 1985 and began to play with typography on a Macintosh computer. “I began to fall in love not only with type but with the idea of typographic systems and grids, and the logic of organizing the page. This was evidence that, ‘yes, Denise, you are a designer.’”

Gonzales Crisp enrolled in a one-year, non-degree seeking course of graphic design at ArtCenter to further explore all its forms. The experience opened up opportunities to teach night classes and a weekend class for high school students called Saturday High. She also taught at Otis College of Art and Design. Teaching allowed her to develop her skills and further explore the forms and systems of design.

Following the four-week De Program in the Netherlands in 1993, Gonzales Crisp enrolled in the MFA at the California Institute of the Arts. “I was intrigued by the work of the students and graduate faculty, and I knew that I needed to make a dramatic shift in my work. I believed that this would happen there, and it did.”

She opened her own independent graphic design studio, Superstove, working for clients including the ArtCenter Design Office, which offered her a position as senior designer in 1998. In 2001 she began full-time teaching in their graduate Media Design Program. When a chair position opened at NC State, Gonzales Crisp switched gears and made the move in 2002, maintaining a home in California with her husband.

“I love the freedom of teaching,” says Gonzales Crisp. She has introduced what she calls “improv critique” in her classroom, making it her own lab of sorts. She and a former student, Nida Abdullah [MGD ’16], who teaches at Michigan State University, explore pedagogy in a book tentatively titled, Circumstantial Methods in Graphic Design, which focuses on “methods toward open-endedness and introducing almost performative aspects to the design process.” The two will create and test more of these methods.

“We don’t know what we will find out. We have enough of a hypothesis to think that these methods will be effective, but we want to be more deliberate about collecting that data,” says Gonzales Crisp.

She has implemented a graduate student retreat with faculty to build camaraderie and encourage dialogue. She expects her students to take on autonomy and publicize their work and interests. This fall, Gonzales Crisp and students will present papers at the 1st International Conference on Food Design and Food Studies in Lisbon, Portugal.

She also established a publication program including YesAnd, a student blog; the And So: Graduate Journal of Graphic Design; So Then, a website on course outcomes; and the MGD Bulletin, featuring previous faculty and student work.

Seeing students take ownership of their work inspires Gonzales Crisp. She observed one particular student over several semesters “discover in herself possibilities that she hadn’t let out. That is very gratifying. She walked out of the class this semester with a personal connection to her work.”

A strong relationship to her craft, as well as “genuine curiosity” mixed with determination, has introduced twists and turns in Gonzales Crisp’s career, landing her in a place where she feels she belongs, having performed a number of roles along the way. “It’s important for students reading this [profile] to understand that there’s no ‘direct line’ or trajectory, no best way to get there.”
A Passionate Leader

by Monique Delage

"I approach each design as a new challenge, each one inspired by the community it serves, and by the context and culture rooted in place, pride, and people."

Curtis W. Fentress [B.Arch '72] is an international designer known for his influential work on several airports; closer to home, his philanthropy supports a College of Design endowed scholarship intended to support students from underrepresented populations. Fentress, FAIA, RIBA, is passionate about his profession and giving back so others may pursue an interest in architecture. He is a 2010 Distinguished Alumnus; a Leaders Council member; and a collaborator, partner, and contributor to several advanced architectural design studios (see p. 13).

"Ever since I learned what an architect was, I wanted to be one," says Fentress. Fentress excelled at the then School of Design, receiving scholarships and accolades and graduating at the top of his class. He is considered a protégé of I. M. Pei, who offered him a job at his firm out of college. There, Fentress was introduced to large-scale public design, and he honed his talents on "humanizing" the design process—drawing inspiration from the community and the people that a building serves.

Now helming his own design firm, Fentress Architects, he has made his mark across the globe. From the Denver International Airport to the Incheon International Airport in Seoul, South Korea, his designs stand out and receive accolades. He designed the Arraya Tower, the fourth-tallest building built in 2009. Throughout his life, he has been confident in his abilities. "My mom told me I could be anything I wanted to be and that I would come up against a lot of walls in life. She said, 'If you can't go over them, then go under them. And if it is something you want to do, take a running start and go through them.'"

Giving back is important to Fentress. "I have gained a lot at this place [the College of Design]—it has made a big difference in my life and helped me with a profession that I am still passionate about, and I feel that if I could pass this along to some other young people—who have this same passion and desire—it is a good thing to give back, and it's what I'm trying to do—to make this world a better place."

In 2010, Fentress received the highest award for public architecture by the American Institute of Architects, the Thomas Jefferson Award. He and his firm have also won more than 40 national and international design competitions. A good challenge is welcome. "We take on projects that are impossible and figure out a way to make them work and get them under budget and on schedule," he says.

Fentress's firm was recently awarded the 9/11 Pentagon Visitor Education Center, where his expertise in pushing boundaries will likely deliver yet another exceptional design.

"I approach each design as a new challenge, each one inspired by the community it serves, and by the context and culture rooted in place, pride, and people."
Influence

Always Giving Back

by Monique Delege

Named a distinguished alumnus in 1993 and recipient of the Design Guild Award in 2004, Richard A. Curtis ['72] continues to influence and support the College, the design community, and the University at large. He was twice on the Park Scholarships Selection Committee, participated on the Public Affairs Council and the Board of Visitors, is currently on the Alumni Association Board of Directors, is a founding member of the College of Design Leaders Council, and consistently donates to the Designlife Fund. Curtis is a true member of the Wolfpack. Time and again he has emphasized his "lifelong allegiance to the College and to NC State."

Curtis garnered a successful career in publishing and design. It began in 1982 when he helped construct USA Today, the multi-platform news and information media company from the ground up. Curtis has for almost three decades pushed the craft and development of storytelling through visual narrative. There are numerous additional accolades and accomplishments to his credit.

When asked why he gives back, he says, "It's the story you've heard a million times before: if it hadn't been for the contributions of others, I wouldn't be here. I'm from a humble background," he continues. "There are others out there just like me, and I'm in a position to give."

Curtis is gracious, and generosity brings him joy. Being a part of the Leaders Council has many benefits, but especially: "Two things, both of equal measure: The conversations with former alumni are interesting, as it's a collective group with people of interesting backgrounds. We have [much] in common in our bonds with the College. And then, the interaction with students. It can be very engaging."

Notes

Assistant Professor of Industrial Design Kelly Umstead, IDSA, has been appointed Chair of the IDSA's Medical Special Interest Section. Umstead also serves as the faculty advisor for the NC State IDSA Student Chapter.

Jinoh Park, PhD candidate, was a recipient of the Emerging Scholars Award for the 2017 Aging & Society: Seventh Interdisciplinary Conference.

Assistant Professor of Graphic Design Derek Ham, PhD, was elected to the Chair of the Association of Collegiate Schools of Architecture Education Committee (17-18) along with seven other university professors from across the country. Their charge is to help schools increase the diversity of faculty and student body.

The Caldwell Fellows Class of 2020 includes two design students, Katie Brooks (Art+Design) and Mara Lowry (architecture).

R.A. "Bob" Southerland was awarded the Order of the Long Leaf Pine by Gov. Roy Cooper. He was a former trustee of the N.C. State School of Design, where he raised more than $100,000 for Centennial Campus and the School of Design.

Traci Rider, PhD, Coordinator of the Design Initiative for Sustainability & Health and Research Associate Professor of Architecture, received the U.S. Green Building Council NC 2017 Sustainable Business Award for Volunteer Leadership.

Mary Farrell (MID '13) has been promoted to Research Director at GfK in San Francisco, CA.

Associate Professor of Landscape Architecture, Co-Director of Coastal Dynamics Design Lab, and University Faculty Scholar Andy Fox, ASLA, PLA, led a podcast with NC State Institute for Emerging Issues Director, Leslie Boney, on "First in Future: Where Emerging Ideas Take Flight." Fox discussed DesignWeek and the interdisciplinary student teams that researched and developed solutions for those affected by Hurricane Matthew (episode 23).
Charles Joyner delivered the Fall 2016 Commencement Address and encouraged students to go out and make a difference in the world.

The NC State AIAS Chapter of Freedom by Design (FBD), a student-led community outreach organization, received the 2017 Outstanding FBD Program award, the highest award for radically impacting the community with accessible and equitable design solutions. This group also received a $7500 grant from NCARB in partnership with AIAS. The funds supported a project in Cary, NC, where the students designed and built an exterior space for Life Experiences, Inc., a nonprofit that engages adults with varying disabilities while delivering services and products to the community.

Several rising senior ID students were among the 2016 Cradle to Cradle Product Design Challenge Winners! This year, the design challenge received a record number of entries, with 162 designers from 19 countries submitting 97 entries. Best Student Product was awarded to Mallory Barrett for “REX,” and finalists were Sophie Wiseman-Floyd for her project, “MUNDUS,” and Krista Smith for “Overarch.”

The American Society of Landscape Architects (ASLA) recently held its annual Diversity Summit in Washington, DC. Landscape Architecture graduates Wesley Brown, ASLA [BLA ’09], Courtney Hinson Cason, ASLA [MLA ’07], Melissa Henao Robledo, ASLA [MLA ’06], and Darneka Waters, Associate ASLA [BLA ’13] were among the 26 participants in this year’s “super summit.”

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Professor Emeritus of Art + Design Charles Joyner delivered the Fall 2016 Commencement Address and encouraged students to go out and make a difference in the world.

“Strong Winds and Powerful Currents” showcases photos that capture the coastal sands of NC and the intersection of the built environment and a fragile ecosystem.

Associate Professor of the Practice in Art + Design Precious Lovell was awarded an Instituto Sacatar Fellowship Residency in Bahia, Brazil. Lovell will spend two months making art, including continuing a series of African war shirts for Warrior Women of the African Diaspora.

Brian Wismann [BID ’02] was named vice president of Product development for Zero motorcycles, the global leader in electric motorcycle sales and technology.

Cheryl Walker, FAIA [BEDA ’79, M.Arch ’81], was awarded the 2016 William H. Deitrick Service Medal, which recognizes individuals who exhibit extraordinary service to the community, profession, or AIA NC.

Professor and Department Head of Graphic and Industrial Design, Tsai Lu Liu, and Dr. Shea McManus, Assistant Professor of Anthropology, spoke at the 2017 IDSA International Conference about the interdisciplinary studio that encouraged student designers to utilize ethnographic research to elevate the quality and effectiveness of problem solving.

Rising senior in Art + Design Jenna Young received an OUR (Office of Undergraduate Research) Grant and is the recipient of the Jay Purvis Scholarship. She is interning at Bart Hess in Eindhoven, Netherlands, this summer. Her research grant focuses on textile and fashion design in the Netherlands.

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Melvin Melchor [BID '17] and Christian Fuda (junior in ID) were selected to compete in the 2017 World Sneaker Championship, organized by PENSOLE Footwear Design Academy and sponsored by Footlocker. Melchior was included in the semi-finals.

Brian Gaudio [BEDA '13, B.Arch '14] and Abe Drechsler [B.Arch '14] spun off a documentary and gallery exhibit based on firsthand exploration of informal housing settlements in four countries. Gaudio has launched a startup company with Drew Brisley [BID '12] and earned a chance to pitch their innovative ideas for affordable, adaptable housing at the ninth annual SXSW Accelerator competition. They were finalists in the social and culture category.

The NCSU Graduate Student Association recognized graduate student teachers: Travis Klondio [MLA '17] won Recognition for Excellence in Classroom Teaching; April Maclage [MDG '17], Jessica Klink [M.Arch '17], and Rachael Paine [MDG '17] won Recognition for Excellence in Mentorship.

L. Franklin Bost, MBA, IDSA '66), professor in the Department of Mechanical and Nuclear Engineering, Executive Associate Dean of Innovation and Outreach of the Virginia Commonwealth University (VCU) School of Engineering and director of the VCU Institute for Engineering and Medicine, was inducted into the American Institute for Medical and Biological Engineering College of Fellows for outstanding contributions to design and development of novel medical devices and educating the innovators of the future. He is a leader in development and commercialization of medical devices, consumer, and industrial products. Bost received a $1 million grant from Altria Group to support a proposed Innovation Maker Facility for students from VCU’s engineering and business schools and the VCU da Vinci Center to practice creative analysis, design thinking, ideation, solution development, and hands-on learning.

Associate Professor of Landscape Architecture Kofi Boone, ASLA, has been selected as a 2016-17 Faculty Scholar. He is one of 22 faculty members who received this distinction and represent top early- and mid-career faculty who are pursuing research to solve society’s most pressing problems. University Faculty Scholars carry their title for a five-year period and receive a $10,000 annual award for supplemental salary and benefits or for programmatic support. Nominees are evaluated on their research and scholarship productivity, excellence in teaching and mentoring, and leadership in extension, professional societies, and public service initiatives.

Distinguished Professor Emeritus of Architecture Roger Clark, FAIA, was honored with the F. Carter Williams Gold Medal Award in 2016, which is the highest honor presented by the Chapter to a member of AIA North Carolina. It is awarded to an individual in recognition of a distinguished career or extraordinary accomplishments as an architect.

Traci Rider, PhD, Coordinator of the Design Initiative for Sustainability & Health and Research Associate Professor of Architecture, and Liz Bowen, who co-teach the LEED Lab, have received a $5,000 grant from the Appalachian Energy Summit to support the course this fall! Both have been co-teaching LEED Lab for four years.

Catalina Salamanca Mendez [MID '17] received first place for her master's thesis project, "Design and innovation for pediatric orthopedics: A study on orthotic devices used during treatment for developmental dysplasia of the hip (DDH)," at the Latin American Research Symposium sponsored by the Latin American Student Association (LASANC).

Art + Design graduate student Nicole Asselin presented her research, "Mycelium Composites: The 'Prima Materia' for Design in Aerospace and Outer Space," at the International Astronautical Congress 2017 in Adelaide, Australia.

Paul Davis Boney, FAIA [BEDA '77], from LS3P Associates LTD, has been appointed to the 2017 AIA National Ethics Council.

Professor of Graphic Design and Director of the Graduate Graphic Design Program Denise Gonzales Crisp was a keynote speaker and workshop presenter at San Diego State University's Design Week 2017 and was also invited to take part in the McKinney Visiting Artist series at the University of Indiana Bloomington.

Professor of Industrial Design and Director of the Graduate Program in ID Sharon Joines, PhD, was selected to receive the 2016 Graduate School Outstanding Graduate Faculty Mentor Award in the area of Humanities and Design. This award recognizes Joines for continued excellence in mentorship based on nominations from graduate students and a committee comprised of graduate faculty. This is the only university-wide award given in this category. She will also be included in the newly established Academy of Outstanding Faculty Mentors.

Professor of Architecture Thomas Barrie, AIA, has released another book, House and Home: Cultural Contexts, Ontological Roles (Routledge, 2017). Barry is also heading up a "Homes for Artists" outreach as part of the Affordable Housing project. Barrie was on the 2017 Jury of the Faith & Form/IFRAA International Award Program for Religious Art & Architecture. He will be a Visiting Scholar at the Key Laboratory of New Technology for Construction of Cities in Mountain Area, Chongqing University.


Lillian Wu (graduate architecture student) received the 2017 Kamphoefner Honor Fellowship.
Associate Professor of Graphic Design Helen Armstrong and Madeline Bone (BGD '17) wrote an essay on VR User interface that was featured in Design Observer.

Associate Professor of Architecture Patricia Morgado, PhD, was honored as a recipient of the university-level 2017 Outstanding Teacher Award to recognize her for commitment to creative and innovative teaching and learning practices.

Three faculty members presented at the 2016 College Art Association (CAA) annual conference in NYC with the theme, “The Shifting Landscape of Universal Design”: Associate Professor Russel Flinchum, PhD, Associate Professor of Graphic Design Scott Townsend, and Associate Professor of Graphic Design Helen Armstrong.

AIA Triangle announced the winners of the 2017 Student Competition. Congratulations to graduate architecture students Samuel Burner and Kelsey Morrison (shown) and sophomore Bergen Holloway.

Associate Professor of Architecture Traci Rider, PhD, received a Robert Wood Johnson Foundation (RWJF) grant, awarded for research studies to build the evidence base for how private-sector investment can help build a Culture of Health—promoting greater well-being and health equity for all. These grants were awarded as a part of the Engaging Businesses for Health project, an RWJF initiative managed by Academy Health.

Students and alumni were finalists in the “Place and Displacement: A Marketplace in Refugee Settlements Architecture and Public Administration Competition”: Jake Heffington (M.Arch '16), Eli Simaan (M.Arch '16), Jennifer Smith (current M.Arch student), and Anne-Lise Knox Velez (M.Arch '14, PhD '16). Their project, “Eisenbahnmarkt,” is an environmentally and economically sustainable cooperative marketplace network in Berlin’s railway archways.

In the 2017 LuLu E-Games, “Ataristicians,” a venture aimed at combining video games with artificial intelligence research and statistical teaching, won first place in the Art Venures category, third place in the Built on Cloud category, and third place in the Social Impact category. The project team includes Lisa Wong (BGD '17) and graphic design student Tea Blumer.

The following faculty members have advanced their careers through tenure and/or promotion. Tenure and promotion are especially important milestones in an academic career because they represent the endorsement of colleagues:

- Helen Armstrong, Graphic Design, Associate Professor with Tenure
- Dana Gulling, Architecture, Associate Professor with Tenure
- David Hill, Architecture, Promotion to Associate Professor
- Sharon Joines, Industrial Design, Promotion to Professor
- Sara Queen, Architecture, Promotion to Associate Professor with Tenure
- Kathleen Rieder, Art + Design, Promotion to Associate Professor with Tenure
- Marc Russo, Art + Design, Promotion to Associate Professor with Tenure

Also, congratulations to Assistant Professor Emil Polyak on his reappointment in the Department of Art + Design.

Associate Professor of Industrial Design Carolina Gill and Associate Professor of Architecture Jianxin Hu have been promoted with newly tenured faculty appointments; tenure signifies a faculty member’s significant accomplishments in their discipline and promotes the academic freedom of the faculty.

Associate Professor of Architecture Bryan Bell was a member of the Best Graduate Diploma jury for UNC Charlotte School of Architecture. He was also a jury member for the international Dencity Competition, which focuses on improving living conditions in urban settings, presented by Shelter Global. This competition fields entries from architects, planners, students, engineers, designers, thinkers, NGOs, and organizations from all over the world to foster new conceptual ideas to better handle the growing global density of unplanned cities.
For the second time, studio work was accepted to appear at SIGGRAPH, the most well-known and respected conference in the world of animation and interactive media. Paper Town VR, a project developed in ADN 460 (Spring 2017), was included in the Digital Art Community WebVR Online Exhibition—Immersive Expression. Students: Simon Park (BAD '17), Connor Shipway (BAD '17), Hilary Smith (BID '17), Julia Ann Lineberry (BAD '17), Nattanun Sumpunkulpak (A+D rising senior), Monica Nguyen (BAD '17), and Lucas Gargano (BAD '17). Faculty mentors: Assistant Professor of Art + Design Emil Polyak and Associate Professor of Art + Design Patrick FitzGerald. The project also took third place in the NCSU Libraries Code+Art Visualization Contest.

Junji Kawabe [MID '08] won an IF Gold Award for Veraview X800 Dental 3-D X-ray. IF Design Awards are recognized as a symbol of excellence around the world. Kawabe is designing for f/p in Kyoto, Japan.

Jesse Arnett [BEDA '06] started White Oak Residential Design in Greensboro, NC, in February 2016.

Matthew Ingalls [EDL '88] is project manager and newly awarded shareholder with Hart & Hickman in Charlotte, NC.

Michael Morse [BEDA '95, M.Arch '98] founded M2 Architecture, PLLC, in Raleigh, NC, and is celebrating 12 years in business.

Gary Collins [MLA '94] is Director of Client Services at SeamonWhiteside, a multi-disciplinary firm with four offices in South Carolina.

Sharon Marcussen [BAD '03, MAD '05] is now working at Double Negative, a film and video studio in Vancouver, BC, Canada. Marcussen presented a lecture, “A Compositor’s Journey,” to Art + Design students.

Marty Maxwell Lane [MGD '08], serves the J. William Fulbright College of Art and Sciences as assistant professor of graphic design at the University of Arkansas.

Michael A. Nieminen, FAIA [M.Arch '83], is a partner at Kliment Halsband Architects in New York City, where he has been for over 30 years. He is Co-Chair of the AIA/CAE Subcommittee for Higher Education and has lectured at the AIA National Convention, AIA/CAE Learning Environments Conference, and Society of College and University Planning.

2017 AI/NC Chapter Awards:
- Associate Professor Sara Glee Queen, AIA, receives the new Emerging Professional Award;
- Tonic Design was honored with the Kamphoefner Award;
- Clark Nexsen, including many alumni and Professor of the Practice Dennis Stallings, FAIA, received the prestigious firm award;
- Chuck Travis, FAIA [B.Arch '86], was awarded the AIA NC William H. Deitrick Service Medal; and the F. Carter Williams Gold Medal, the chapter's highest honor, was awarded to Harvey Gantt, FAIA. Gantt was awarded the 1999 Design Guild Award by the College of Design.

Several graduates were honored as Wings on Wings Award recipients at the 2017 Spring Commencement for their commitment, achievements, and contributions to the College of Design: Annie Gray Gibbs [BAD '17], Sarah Lower [M.Arch '17] (shown), and Allison Press [BGS '17].

Robert Carson Mataxis [BAD '02] received his second Emmy Award in Animation. His first was in 2004 for video editing.

Juniors in architecture: Bergen Holloway and Natalie Williams won Top prize in this year’s annual Shawcroft Hand Drawing Competition.

Jessica Weiner received Merit recognition. Jurors were Erin Lewis of in situ, Brad Burns of Gensler, Emerita Professor Georgia Bizios, and Professor of Architecture Tom Barrie.

Nicholas Serrano, PhD candidate, has been awarded a Junior Fellowship with Dumbarton Oaks Research Library and Collection, where he will conduct research on "Ideologies of Nature in the Landscape Architecture and Urban Development of the Postwar American South, 1955–1975.”

The Annual NC Masonry Contractor’s Association sponsored Sigmon Memorial Scholarship competition included jurors Bob Gates, President of Gates Construction, Caroline Towns [BEDA '16], and Executive Director of NCMCA, Lynn Nash. The first-place team included: Nickolas Lash (fifth-year architecture), Brooke Grayson (junior architecture), Cassidy Putnam (senior architecture), and Clint Ronsoni (graduate architecture), who will share one semester's in-state tuition.

Four student teams submitted work completed during LAR DesignWeek for peer review and received Awards of Honor or Merit in Analysis and Planning from the 2017 NC ASLA Southeast Region:

- ASLA Honor Award in Analysis and Planning: "Connecting Kinston’s Assets for a more Resilient Future, Kinston, NC." Students: Yu Chun Chiu [MLA '17], Brandon Dupree (grad in LAR), Sharna Chowdhury (grad in LAR), Andrew Holliday (grad in LAR), Jessica Klink [M.Arch '17], and Ashton Rohmer (UNC)

- ASLA Honor Award in Analysis and Planning: "Adkin Revival, Kinston, NC." Students: Karli Stephenson [MLA '17], Zek Krautwurz (grad in LAR), Virginia Fall (grad student LAR), Wentao Gue [MLA '17], Giti Kazerooni [M.Arch '17], Sarah Johnson (grad student LAR), and Abby Moore (UNC)

- ASLA Honor Award in Analysis and Planning: "Staying Above the Backwater, Windsor, NC" Students: Elizabeth Moss [MLA '17], Jaquasha Colon [MLA '17], Anna Grace FitzGerald (grad student LAR), Daniel Flyody [M.Arch '17], and Chris Bendix (UNC)
James Stevens, AIA, B.Arch '07, who is an Associate and Design. Jeld-Wen Windows & Doors Training Department. Is now content specialist for Architects, a Raleigh, NC-based firm that was just founded.

Mahan Kick, M.Arch '06, is a project manager at SfL+a Architects, a Raleigh, NC-based firm that was just founded. She is also owner and founder of Alloy Designs, Inc. in Boulder, CO.

Clayton Johnson, MAD '14, recently graduated with a Master of Science in Historic Preservation from Clemson and the College of Charleston (May 2017).

Archie P. Gupot, B.Arch '71, recently retired after a fulfilling career in architecture, most notably in the Cumberland and Wake County school systems.

Joyce Watkins King, BGD '79, graduated in May 2017 from the University of NC at Greensboro with an MFA in Visual Art, concentration in installation, sculpture, and mixed media.

Mahan Kick, M.Arch '06, is a project manager at SfL+a Architects, a Raleigh, NC-based firm that was just founded. She is also owner and founder of Alloy Designs, Inc. in Boulder, CO.

Mandy Alfaro, BEDA '08, is now content specialist for Jeld-Wen Windows & Doors Training Department.

James Stevens, AIA, B.Arch '07, who is an Associate Professor of Architecture at Lawrence Technological University, has recently been named the Chair of the Department of Architecture and Design.

Julie McLaurin, BEDA '89, B.Arch '90, Designlife board member and past President, has accepted a new position as Community Studio Principal at Little Diversified Architectural Consulting in Durham.

John W. Brown Jr., AIA, B.Arch '69, principal of Brown and Alexander, PLLC (formerly Biberstein, Bowles, Meacham & Reed), closed on June 30 after 50 years of working on projects. Brown will retire.

Kelly Whittenburg, BID '01, opened Raleigh-based Retro Modern Furnishings, which focuses on vintage and new products that support local and up-and-coming makers and craftsmen.

Lucas Van Dyke, BID '11, MID '13, is Design Director at Tetrafab Custom Cases in Floyds Knob, IN.

Deanne Beckwith, BID '65, is the Secretary of the Board of Directors for Better Place International, president of Deanne Beckwith Design Associates (since 1989), and has been R&D consultant for Herman Miller for 26 years.


Ashley Kubley, BAD '05, who is assistant professor at the University of Cincinnati College of DAAP, is engaged in design practice and research into the conservation of traditional textile techniques in Mexico's Yucatan Peninsula and is also the principal investigator in various research projects that incorporate and marry wearable technology with their historic textile roots in weaving, knitting, embroidery, and pattern-making.

Laura Allred, BAD '79, is a Product Manager of bedding at AEC Narrow Fabrics in Asheboro, NC, where she oversees designing for and selling into the bedding industry. She has several customers that are also Anni Albers scholars.

Glenn Simmons, MLA '81, retired from the Winston-Salem/Forsyth County Planning and Development Services Department after 28 years and recently completed the Forsyth County Farmland Protection Plan as consultant.

Professor Emeritus of Industrial Design Haig Khatchatoorian wrote the forward/preface for the recently published book by Axel Wendelberger, Willi Gutmann: Form-Movement-Sculpture.
George Masumoto Dies at 93

George Matsumoto, FAIA, one of the most iconic members of the College of Design’s faculty, died on June 28, 2016, at the age of 93. Matsumoto taught architecture at the (then) School of Design from 1948 until 1961, after which he went into practice full time. He came to North Carolina from San Francisco, and, along with Dean Henry Kamphoefner and the founding faculty of the School, led the state to the forefront of the modernist architecture movement. Many faculty members, including Matsumoto himself, were in practice while teaching, and the residences and commercial buildings they designed are still celebrated today. Matsumoto’s legacy buildings include homes designed for faculty members, a Gregory Poole showroom for tractors, and the IBM building on Hillsborough Street, now Brooks Bell.

Most notably, Matsumoto designed an addition to Brooks Hall—the “Matsumoto Wing”—which houses the studios, offices, and other design workspaces that have been integrated into the daily lives of the students, faculty, and staff here at the College (pictured at left).

Angelo Rudy Abbate died on September 8, 2017, at the age of 87. Angelo taught graduate and undergraduate courses in landscape architecture at the NC State College of Design. He left a legacy of small town revitalization plans in North Carolina. He took interdisciplinary students on trips to introduce them to citizens while also introducing landscape architecture to residents. He addressed economic issues, supplied trail designs for towns, designed waterfronts, revitalized sites, and reminders the public of the environmental responsibilities humans have for their landscape. Abbate was also a Japan Center Fellow and a visiting research fellow with the University of Tokyo Landscape Design Lab. He was an Army veteran of the Korean War. His legacy at the College of Design will remain in the hearts and the works of the students, faculty, and community he influenced.

S. Scott Ferebee, Jr., FAIA, died November 19, 2016, at the age of 95. A graduate of NC State in 1948 with a Bachelor of Architectural Engineering, Ferebee was a leader in the architecture community in North Carolina. He served as President of the American Institute of Architects in 1973 and was also Chancellor of the College of Fellows in 1987 and a delegate to the International Union of Architects. Ferebee and Herschel Walters founded Ferebee, Walters, and Associates in 1958, a successful architecture firm in Charlotte, NC, known today as the FWA Group. In addition to his passion and innovation in architecture, Ferebee was a paratrooper in World War II who later rose to the rank of major general in the reserve and commanded the 108th Division.

Richard Alan Moore, FASLA, died in January of 2017. He taught architecture and landscape architecture at the NC State School of Design while operating a Raleigh-based landscape architecture firm, Megatech Inc. In 1962, he was appointed Associate Professor and Head of Landscape Architecture—a position he held until he took a leave of absence and then formally resigned in 1968. He was a fellow of the American Society of Landscape Architects and a leader in the landscape architecture community in North Carolina and across the United States. Herb Schaal, formerly of the Department of Landscape Architecture at NC State, remembers Moore as someone who “taught us that landscape architects were not trivial decorators, but shapers of spaces of all scales for people, and that we had a long heritage of significant works throughout the history of civilization.”
Ms. Wuff with Turi and Dean Hoversten enjoying the annual Back-to-School BBQ.

Chancellor Woodson and Phil Freelon, FAIA ['75], at NC State University spring commencement. Freelon was recognized for his amazing achievements with an honorary doctorate degree.

Our 2018 Distinguished Alumnus, Chris Downey, AIA [BEDA '84], is one of the few blind practicing architects in the world. With 20 years of architectural practice before unexpectedly losing all sight in 2008, he is dedicated to creating more helpful and enriching environments for the blind and visually impaired. "As a consultant who lost all sight in 2008, I draw upon my experience as an architect to help design teams and client organizations to create enriching environments for the visually impaired and, not coincidentally, the sighted as well."

2017 Designlife Award recipient Dean Emeritus Marvin Malecha with Assistant Professor of Art + Design Tania Allen [MGD '10] and Alberto Rigau [MGD '09], who introduced him at the Gala. Both are Marvin's former teaching assistants.

Design Ambassadors ('17-'18) group photo with Sarah Brewer, Undergraduate Student Services Coordinator (second row, first on left), Tameka Whitaker, Assistant Dean of Student and Academic Services (in red jacket), and Kathleen Fenner, Director of Career Advising (to right of Whitaker).

Opening of A2W 2017: The Art of Déjà vu, FYE paper wearable project.

Fred Taylor, recipient of Wings on Wings, with Professor of Architecture and Head of the School of Architecture David Hill, AIA, and Dean Mark Hoversten, PhD.

Reception honoring Distinguished Professor of Architecture Patrick Rand, FAIA, DPACSA, for 40 Years at the College of Design. Thanks to Clark Nexsen for hosting the event.
THANK YOU! Listed below are donors to the College of Design (individuals, firms, companies, and foundations) who contributed $25,000 or more between July 1, 2016, and June 30, 2017. The list includes in-kind donations and planned gift commitments. Please accept our deepest apologies for any errors or omissions.

### Endowments Established

- Claudia Gabaldon-Cotrim
- Landscape Architecture Endowment Fund for International Students
- Curtis W. Fentress Scholarship
- Fred Taylor Scholarship
- Fred W. Butner Jr. Scholarship
- Jimmie Haynes Kluttz Landscape Architecture Graduation Award
- KieranTimberlake Scholarship
- Richard L. Rice and Richard W. Gold Scholarship
- Steven D. Schuster and Mary Ann Howard Architecture Scholarship Endowment Fund

### Other Major Gifts and Pledges

- $150,000+ John Rex Endowment
- $100,000+ Blue Cross Blue Shield of NC Foundation
- $100,000+ The Robert Wood Johnson Foundation
- $100,000+ Mr. Michael R. Lemanski
- $75,000+ Mr. Greg Hatem | Empire Properties
- $50,000+ Mrs. Yvonne S. and Mr. Mark B. Templeton
- $25,000+ PCI Foundation
- $25,000+ Mrs. Turi K. and Dr. Mark E. Hoversten

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**SAVE THE DATE:**

15th Annual Urban Design Conference

**DATE:** Thursday, March 15, 2018

**LOCATION:** Raleigh Marriott City Center

"Urban Disruption and the Equity Challenge"

design.ncsu.edu/urban

**SAVE THE DATE:**

21st Annual Designlife Award Gala

Honoring: Frank Harmon, FAIA

**Saturday, April 21, 2018 | 6:00 p.m. | Angus Barn Pavilion, Raleigh NC**

design.ncsu.edu/designlife-gala

Thank you to our 2017 Designlife Gala sponsors:

**Reception Sponsor:** Oldcastle + Adams an Oldcastle Company

**Entertainment Sponsor:** Bida Manda Laotian Restaurant

**Floral Sponsor:** Surface 678

**Dessert and Coffee Sponsor:** Coaly Design, PC
An Influential Experience

Reach Out is an innovative program developed by the College of Design that strives to make connections and build relationships with teachers and students in underrepresented areas of North Carolina. Bringing this project to life is a team from the K-12 Design Lab and the Office of Student Services with assistance from current design students.

The program introduces design, the process of design thinking, and an introduction to the available disciplines at the College of Design. This past Spring and Summer, Reach Out worked with four high schools: South Granville High School, Garner High School, Hillside High School, and East Wake High School. Additionally, they engaged with 150 students who take part in NC State’s Emerging Scholars program.

The team introduced the various design disciplines available and initiated a hands-on design challenge with students. The goal was to share the process of design thinking by developing a deliverable for a certain user in a given context. As a part of the project, students went through a rapid ideation exercise, sketched their ideas, and built prototypes with simple materials they were provided.

Many of the high school students found the experience to be not only enjoyable but also enlightening, as most had no sense of the importance of design and its influence in all facets of life. Most importantly, they learned that design is a discipline that can lead to a sustainable career path.

Jecori Owens-Shuler, a junior in industrial design and a member of the Multicultural Design Students Association (MDSA), assisted with the Reach Out event at South Granville High School and was thrilled with the opportunity to encourage design as a career path. “You get them to experience what it’s like to be a designer, and I thought that was really cool,” says Owens-Shuler. “I kind of wish I’d had that experience, as I had no idea what design was. That wasn’t really introduced at my high school.”

This fall, the Reach Out team has plans to continue to build relationships with these same four high schools as well as expand the program’s reach and impact. In order to outreach efforts to high schools, additional funding is needed. Contact the College of Design Development office for information on supporting this initiative.

Design initiates Corporate Partnership Program: The NC State Design Corporate Partnership Program will develop a more connected relationship between companies and the College, delivering high-impact programs to students, supporting value-added educational opportunities, strengthening links, and broadening recognition and brand awareness. Program gift amounts begin at the $10,000 annual level.

Many thanks to our founding CPP donor: CLEARSCAPES

For more information, please contact Jean Marie Livaudais at jmlivaud@ncsu.edu or 919.515.8320.

Jean Driscoll, new Executive Director of Development

On November 27th, Jean Driscoll will be taking on the role of the Executive Director of Development for the College. She joins us from the University of Illinois at Urbana-Champaign, where she has been an integral part of the community as student, athlete, and professional fundraiser. Most recently Driscoll has been senior director of development for the UI College of Liberal Arts and Sciences.

Prior to entering the field of advancement, Driscoll was a professional speaker, coach, and accomplished professional athlete. She is an eight-time winner of the Boston Marathon, two-time Olympic silver medalist, 12-time Paralympic medalist and is the holder of a world record in the 10,000 meters. She was inducted into the U.S. Olympic Hall of Fame in 2012. In 2008, she was appointed by George W. Bush as one of seven Presidential Delegates to represent the U.S. at the Beijing Paralympic Games. Driscoll is a member of the Wheelchair Sports, USA Hall of Fame and has been awarded honorary doctorate degrees from the University of Rhode Island in 1997 and the Massachusetts School of Law in 2002.

“I know Jean will bring her fundraising success, competitive spirit, and inspiring background to her new role in the College of Design,” says Dean Hoversten.
Fresh Catch
by Meghan Palmer

Since 2003, College of Design students have carved out a space of their own in downtown Raleigh—the Fish Market Gallery—where the atmosphere and exhibitions pack an eclectic energy into a small venue. The name is a tongue-in-cheek reference to the acronym for the College of Design (COD). And while over the years they haven’t scaled back on their fish-related themes, the gallery continues to call for submissions in a variety of concepts and mediums through uniquely themed graphics and posters.

The gallery is fully funded through Designlife donations and predominately curates work by students, though it has included the work of faculty and alumni. From the open call to the final clean-up, the gallery is a student-run initiative, with support from a faculty advisor—most recently, Associate Professor Russell Flinchum. It typically opens for Raleigh’s monthly First Friday celebration and runs throughout the weekend, featuring upbeat music, refreshments, and sometimes hands-on activities, like screen printing or fiber dyeing. In the past, the Fish Market has also collaborated with organizations like SPARKCon to expose the public to a range of student work and digital installations, such as virtual reality demonstrations.

The downtown space—graciously donated and maintained by College of Design Leader’s Council member Greg Hatem ['85], Owner and Managing Partner of Empire Properties—has maintained a reputation as an “uncensored, unfiltered, and uninhibited” place for students to express themselves by providing the creative freedom to experiment with their artwork and sell it to the public. For many students, showing work at the Fish Market is their first opportunity to publicly display their craft. Sharing that excitement and experience with friends and fellow designers is just one of the many reasons the gallery has cemented itself as a time-honored tradition.
Associate Professor of Art + Design Patrick FitzGerald was one of 11 artists chosen to participate in Art-on-the-Move 2017, which is hosted by the City of Raleigh Arts Commission in partnership with GoRaleigh. FitzGerald’s design adorns buses traveling the city of Raleigh. The first Art-on-the-Move buses were unveiled in 2007, and this year’s bus designs were officially unveiled as part of the Artplosion Festival in May.

Alumna Joyce Watkins King’s [BGD ’79] recent MFA exhibition, “Fast Fashion Fiasco: The High Cost of Cheap,” explores the consequences of the current “fast fashion” trend. Works ranging from mixed media to sculpture to installation comment on its effects on garment workers, the environment, and consumers.

A child of the South and ancestor of Eli Whitney, Watkins King grew up with a mom who sewed her clothes, as did her mother before her. Learning to sew while she was in middle school was her introduction to soft sculpture. As a lifelong artist and designer, textiles have always featured strongly in her work.

“80 lbs. of Dazzle: Impulse Buy or Key (In)vestment?” is made from more than 4,000 keys and garment labels. The interactive sculpture, which was on display at UNC Greensboro’s Project Space, allowed participants to feel the weight on their bodies equivalent to the clothing the average American annually discards.

In last year’s issue, we highlighted Phil Freelon, FAIA, for his array of achievements, including the Smithsonian National Museum of African American History and Culture on the National Mall in Washington, DC. The Washington Post noted in March of 2017 that in its first six months, the $540 million, 400,000-square-foot structure had welcomed more than 1,200,000 visitors, placing it among the four most popular Smithsonian museums.

An image of this crowning jewel was on the cover of Designlife magazine, and we regret that we inadvertently skewed the photo. Above is the cover with the accurate representation of the image.
Little Grey Line, founded by Jessica Johnson Moore [M.Arch '03], is a sustainable clothing line for children handmade in Raleigh, NC. Each custom design showcases how no-longer-used button-down shirts can be repurposed into sophisticated, yet playful heirloom-quality garments. By following her own design rule to only use what each shirt has to offer, the resulting designs are truly one-of-a-kind and feature unique details that are treasured by her clients.

Custom orders can be made via the website: www.littlegreyline.com

Matt McConnell [BEDA '94, BID '95], American Sculptor, b.1972
“Lamina” | 2016 | Stainless Steel, Iridized Glass
www.mattmcconnell.com

Commissioned by the Research Triangle Park Foundation, this piece was inspired by the technology, growth, and complexity of the Research Triangle, with imagery connected to biology, engineering, and mathematics, including marine plants and fossil forms. It is meant to imply both animal and plant life, with a colorful skin that changes in light and reveals the core structure within.

“Lamina” measures 14' x 4'8" x 4'8" and is composed of an engineered stainless steel spiral truss and iridized glass that reflects the sun at different angles depending on the season and time of day.

Associate Professor of Architecture Dana K. Gulling has a new book, Manufacturing Architecture: An Architect's Guide to Custom Processes, Materials, and Applications, published by Laurence King Publishing in May 2018. It is the first reference guide to customizing repetitive manufacturing for architects. Clear diagrams, photographs, and narratives explain 20 of the most common manufacturing processes for typical building components. Case studies show how these processes can be customized in order to create variation, lower costs, decrease production waste, and use a wider selection of materials. Available Summer 2018

Professor of Architecture Thomas Barrie, AIA, has released his fourth book, House and Home: Cultural Contexts, Ontological Roles, published by Routledge (2017). This book challenges predominant definitions and argues that domesticity fundamentally satisfies the human need to create and inhabit a defined place in the world. How the search for home in an unpredictable world led people to create myths about the origins of architecture, houses for their gods, and house tombs for eternal life. Available on amazon.com