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CONTENTS

INTRODUCTION 6

STUDENT EXPERIENCES 9

DESIGN STUDIOS
Praxis Studios 20
Graduate Studios 30
MLA Final Projects 34
Undergraduate Studios 36

FACULTY SCHOLARSHIP 47
Landscape Architecture
Dear Friends,

Layer is an important opportunity to reflect on the 2014-15 academic year and share our experiences with our larger professional and academic communities. A lot happens during the school year – academic hurdles and achievements, community outreach, social events, and much more - and our outlook in September is usually very different from where we find ourselves in May.

As we began to plan this edition of Layer, we pushed ourselves to consider new approaches and formats. We’ve added more from the students’ perspectives, through excerpts from our new student publication *Contour Lines* and through quotes interspersed throughout. We’ve also highlighted faculty activities and added pages that summarize some of our research areas. Anita Bakshi was our fearless leader through this transformation of Layer, and has done a wonderful job working with faculty and students to tell our story from different perspectives.

In these pages, you will see design projects that range in scale from a garden to a watershed. Each studio involves a different approach to data collection, analysis, design, and engagement. The images in this publication represent our belief that landscape architects must be as skillful with sketching and drawing as they are with GIS and 3D modeling programs, and they need hands-on experience with construction in order to understand materials and their capabilities. I hope you can appreciate our students’ passion for their work and the rich dialogue that occurs as students present and discuss their work with each other, faculty, community partners, and professionals during project reviews. As always, we seek to engage students with the complex problems and opportunities facing communities today. You will see examples of projects from many New Jersey communities, including Jersey City, New Brunswick, and Newark. This year one of our praxis studios also worked with the National Park Service in St. Croix, U.S. Virgin Islands. In addition, our students and faculty work with municipalities and non-profit organizations through the Center for Urban Environmental Sustainability (CUES) on innovative research and design projects that combine the best science, engineering, and design expertise to address urban environmental issues.

Our students and alumni know that being a student in this department is a 24-7 experience that engages learning inside and outside the classroom. We have very active undergraduate and graduate student clubs that serve as student chapters of the New Jersey ASLA. Our undergraduate club kick-started the year with an ambitious Parking Day event in New Brunswick – a video of the event is available on our website. They also acquired Rutgers student club funds so that over 25 students could attend the 2014 ALSA annual
meeting in Denver. The graduate club organized several graphic design workshops and presentations by designers. Our students also enjoy many opportunities to study other regions of the U.S. and international sites, thanks to study abroad courses and the Roy DeBoer Travel Prize.

Our department continues to grow and evolve. We run three degree programs: the Bachelor of Science in Landscape Architecture (accredited), the Bachelor of Science in Environmental Planning and Design (with four options available, including Landscape Planning, Landscape Industry, Environmental Geomatics, and Urban Forestry), and the Masters of Landscape Architecture (accredited). With our growth, we now have two Undergraduate Program Directors – Holly Nelson oversees the BSLA and Frank Gallagher oversees the BSEPD. After six busy years developing our MLA program, Dean Cardasis has handed off the torch to Wolfram Hoefer, who now serves as our Graduate Program Director for the MLA program. Our longstanding administrative assistant Pam Stewart has retired after over 25 years at Rutgers and 14 years in our department. Pam has been the heart and soul of our front office and, as she would say herself, our “institutional memory.” Thankfully, Gail McKenzie, who has worked in our office for four years, will continue and take on more responsibilities. Dr. Seiko Goto has accepted a position as Full Professor in the Faculty of Environmental Studies at Nagasaki University in Japan. I have also been given an opportunity to serve as Dean of the Office of Agriculture and Urban Programs in our School of Environmental and Biological Sciences, and will move into this position fulltime once we have a new chair for Landscape Architecture.

At the end of spring, we had the pleasure of seeing 43 undergraduates –25 BSLA and 18 BSEPD – and 11 graduate students complete their education and receive their diplomas. Congratulations to all!

As you can see, 2014-15 was a productive and exciting year. I hope you enjoy reading Layer and getting a glimpse into our activities. Layer is our opportunity to reach out to you, and we hope you also connect back to us! You can stay connected in many ways – be accessing our website (http://landarch.rutgers.edu/), the RULA list serve, and Facebook, attending reviews, and visiting us in Blake Hall. For those of you who are alumni, please keep your eyes open for information from our Alumni Advisory Committee, a group of dedicated alumni who are working to increase our department’s professional networks and financial resources. Thank you very much!

Sincerely,
Laura Lawson
New to LAYER in 2015, this section highlights student experiences in the graduate and undergraduate Landscape Architecture programs, as well as the undergraduate Environmental Planning and Design program. In addition to their coursework, students have opportunities for travel and study abroad experiences, internships, community service, and other volunteer activities. The online student publication Contour Lines, available from the Rutgers Department of Landscape Architecture website, contains many more excerpts about student life in Blake Hall and beyond.

Contour Lines Student Publication
Site Visit: Mapping & Drawing Passaic, New Jersey
Roy DeBoer Travel Award experiences
Student internships
Praxis Studio Visit to St. Croix, US Virgin Islands
Summer Study Abroad: Northern Italy
Environmental Planning and Design Student Activities
Launching the Department’s Inaugural Student Publication

Anita Bakshi, Instructor and Faculty Advisor for Contour

This year the graduate students came together to launch a new departmental student publication - Contour Lines. This biannual online publication highlights student work and describes departmental research and activities. It provides an overview of our design approach and the department’s engagement with professional practice and community work.

In a department as large as ours, this forum provides a vital conduit for information and inspiration among students, faculty, and researchers. We expect it to foster further collaboration and promote understanding of the incredibly rich and diverse work that our students do.

Ellen Oettinger and Donna Dahringer worked tirelessly on collecting and editing content and formatting the first issue, which was published online this spring. Meghan Collins and Jennifer Ryan signed on to the editorial team for the second issue. Many other students have contributed descriptions of their work, short photo-essays, and writings about their interests and the state of the discipline. The following pages in this section are excerpts from Contour Lines.
MLA 1 Walking Exploration of Passaic, New Jersey
Jennifer Ryan, 1st Year Graduate Student

The MLA Visualization 1 class led by Dr. Anita Bakshi took a field trip to Passaic, after reading Robert Smithson’s “A Tour of the Monuments of Passaic, New Jersey.” This essay, published in Artforum in 1967, is noted as a first for exhibiting art outside of a traditional gallery. Smithson photographed monuments of a postindustrial landscape as he traversed a swing bridge, followed the Passaic River, skirted used car lots, and ended in the city of Passaic, “an unimaginative suburb.” We compared the scene described by Smithson in 1967 to today’s landscape. Smithson’s route is now inaccessible by foot—the sidewalk across the new bridge ends abruptly at a ramp to an elevated highway, and heavy traffic deters the most intrepid pedestrian. The river can only be seen from a park and the edge of a used car lot. On Main Street in Passaic, glitz in the stores selling “Magic Sneakers” and “Paula’s—The Diva’s Store” contrasts with the boarded up windows of old buildings. The monuments are gone—demolished, rusted away, or hidden from view—exactly the type of entropy Smithson relished. My classmates and I combined text, drawing, photographs, and even thread stitching into composite drawings that recorded our experiences of the tour in comparison to Smithson’s. While some documented the decayed landscape of postindustrial New Jersey, others delved into the history of a piece of the journey. We all found something interesting, perhaps showing that Passaic, both the river and the city, has not completely faded away.
During my trip to the Netherlands as a recipient of the Roy Deboer Travel Award, I visited a wide range of hardscape, softscape and housing projects that address flooding in a country that has dealt with water innovatively since ancient times. Hardscapes, such as deltaworks - dams, sluices, and storm surge barriers - are used to shorten the Dutch coastline, and thus reduce the number of dikes that have to be raised. Softscape projects such as Noordward Polder and Plan Tide create room for the river; by removing or lowering dikes, the area becomes subject to controlled inundation. In the case of Noordward polder, the lowering of dikes creates a water detention basin and in the Plan Tide project, housing is developed in that basin.

After observing many types of projects in the Netherlands, it became clear that there is no one solution that addresses storms and sea-level rise. The Dutch are making room for flooding in certain places and simultaneously building artificial islands to overcome the housing shortage in Amsterdam. Solutions depend on many factors such as how the place is being utilized, the population, and the economy. The Dutch example provides us with a menu of different water problem solutions. It’s upon us to determine which solution is applicable in a specific scenario.
CUES Internship - Designing the Green Seam in Somerville, New Jersey
Theresa Hyslop, Senior

Last spring, students from Frank Gallagher’s Praxis Studio on Ecological Design had the opportunity to develop a new master plan for the Somerville Landfill. Students considered site access, local history, environmental remediation, and other issues. Final designs were presented to the Somerville Town Council, leading to continuing work with Somerville as part of a project with the Center for Urban Environmental Sustainability (CUES). CUES interns examined the site in more detail, with a main focus on developing the Green Seam – the stream along the middle of the site – and working within existing landfill regulations. This led to the creation of a novel terracing system along the Green Seam. The terraces increase flood storage and allow woody vegetation to be planted on top of the landfill liner instead of the herbaceous planting typically mandated by liner systems. This greatly enhances the ecological value of the site and creates a unique identity for the Green Seam.

The final CUES proposal represented a compromise between Somerville’s original Vision Plan and an ecologically ideal plan that, while still conceptual, addressed the main issues of the site. Strong connection points help mitigate the current isolation of the site. Ultimately, the site’s ecological function was enhanced through the restoration of the existing wetlands and the novel terracing of the Green Seam.
Sketching St. Croix: Tracing the Roots of my Crucian Design Concept
Andrew Schlessinger, 2nd Year Graduate Student

I embarked for Christiansted, St. Croix, USVI, with my studio peers and professors on January 9, 2015. I mentally prepared for the week to come - opening my mind to new possibilities and preparing myself with the tools to capture island experiences and the National Park Service’s Historic Fort Site in Christiansted, St Croix, USVI. I penned the first page of my St. Croix Design Journal. A blank canvas of 120 pages, this journal would quickly fill up over the next seven days of travel as I documented the places I visited, people I met, stories I heard, and reactions I experienced. Over the course of the next three days working with the National Park Service in Christiansted, the connection between hand, eye, and notebook lead to dozens of site sketches. Sketches ranged from 30 second line work to 3-5 minute sketches + color. The addition of color helped me later to remember the palette of the island, represented by vibrant building facades, tropical flowers, eclectic clothing patterns, and drenching sun light. As my hand and eye worked to capture and consume as many sights and places as they could, my notebook also began to capture another element of place - the sounds and stories of the people I met. Whole pages were devoted to documenting the stories of neighborhoods and the people that lived in these streets. These stories helped to further inform my sketches, guiding my eye to look for nuanced details that connected with the island’s history, present, and future. As the days of documentation continued, my notebook’s pages grew to contain entrepreneurial stories of the Freegut neighborhood, stories of struggle and government skepticism from Watergut, stories of disappointment mixed with island pride from local factory managers - stories which augmented my limited ability to see the island through my own eyes. As the week of study began to come to a close, preparing for our presentation to the National Park Service and to the residents of Christiansted, I worked with my group to organize our sketches and feedback into a presentation of site documentation. In rehearsing for our presentation, we realized that we could flip our presentation approach to be less about telling the audience about what we learned during the week and more about using the presentation night as a final opportunity to listen and document audience feedback.
In Italy, you walk. The best parts of the cities and towns are to be found where most vehicles can’t go, and the pace allows you to see the intricate details that make Italian architecture so fascinating. The 2014 summer abroad course on the Landscapes and Townscapes of Northern Italy was an opportunity to see and study some of the most incredible and historic buildings, piazzas and gardens in the region at a personal scale. Together with our American expat professor, Carla Tiberi, and our patient Italian guide, Roberto, eleven students—six graduates and five undergraduates—walked six different cities over the course of two weeks. Ostensibly we were there to study the architecture and use of space; in reality the lessons we all took away from the class were much more about the people and the culture. One piazza begins to look a lot like the next, until you add in the uniqueness of each city and the people who occupy each place. One of the most notable characteristics was the obvious presence of thousands of years of civilization. Sprinkled between the most modern buildings in Milan and Turin were Roman ruins, and the hill towns we passed through could have been drawn straight from the 13th century.
Rutgers Water Resources Internship in Camden
Eliot Nagele, Senior

The Rutgers Water Resources Program (WRP), directed by Dr. Chris Obropta, is a program through the Rutgers Cooperative Extension that focuses on water quality issues throughout the state of New Jersey. Primarily working with different municipalities and non-profit organizations, the WRP helps design and implement green infrastructure projects that aim to help better the quality of the state’s waterways. As an intern with the program since the summer of 2014, I have had the opportunity to work on many different projects. These projects range from writing tree canopy assessments and watershed management plans to conducting rain barrel workshops and constructing green infrastructure projects.

Throughout the summer, a large portion of my work was concentrated within Camden. Camden, a city which has experienced a lot of disinvestment and crime over the past couple decades. The city also has many water quality and water access issues. For example, Camden uses a combined sewer overflow system (CSO) like many previously industrialized cities along the east coast. With this system, in the event of a heavy rainstorm, stormwater and sewage are disposed of into the Delaware River, causing a serious health threat to the river and nearby communities. Additionally, many of the lower income residents of Camden do not have direct access to the waterfront and lack the resources necessary to water private and community gardens.

The WRP works to address all of these water quality and environmental justice issues in Camden. For me, in addition to acquiring many new skills such as learning GIS and AutoCAD, the most rewarding part of the job was having the ability to work directly with the community. Through constructing local rain gardens and leading rain barrel workshops, I connected with the people of Camden in a way that cannot be done through visiting Battleship NJ or the NJ Aquarium. Having the ability to work with these communities showed me that people of all backgrounds are affected by and concerned with environmental quality. Similarly, it showed me that no matter the city or town, people are intrinsically good and care about their environment.
Revitalization of the Arbor Trail
Eliot Nagele, Senior

Beginning in the spring of 2013 originally as an effort to clean a local creek, the Arbor Trail project has now become a 3 year initiative to restore the nature trail and tree collection located on the historic Carpendar Estate, now the Rutgers University Inn and Conference Center. At first, I worked on raising campus awareness about the site through meeting with students, faculty, and staff. Then, through the support of the Landscape Architecture Department and SEBS Office of Academic Programs, I acquired an independent study doing trail clearing and a tree inventory of the site for the summer of 2013. Since then I have held two staff and faculty meetings to discuss the site’s progress, organized an invasive tree species removal, planned an Arbor Day tree planting of 200 trees, and hosted three trail cleanups with various student groups on campus. In the fall of 2014 I started a G. H. Cook Honors Thesis focusing on the sites restoration and prolonged maintenance. This thesis will be in the form a management plan and will be completed in the fall of 2015. As one of the only forested areas on Cook Douglas campus in the city of New Brunswick, this site has great potential to be a valuable teaching resource for students studying the natural environment. Additionally, the Arbor Trail can act as a passive recreational space for the students of Rutgers University and the citizens of New Brunswick.
DESIGN STUDIOS

During the spring semester of the second year of the MLA curriculum and the junior and senior years of the undergraduate program, students have the opportunity to select and participate in a Praxis Studio based on their own interest areas and the offerings provided by the faculty. Praxis studios focus on project design at various scales, utilizing problems of a wide range of complexity and subject matter. Often, the offerings align with faculty research areas, funded projects, or timely concerns. The offerings are intended to be distinct and are labeled according to broad categories including: open space design, service-learning, urban design, design/construction. The intentionally open labels contain a flexibility that allows new categories to emerge in the future. Praxis Studios are vertically integrated, allowing undergraduate and graduate students to benefit from working together and sharing a wide range of experiences and skill sets. This section starts by highlighting the work from the three Praxis Studios, and then moves through the sequence of required studios.

Praxis Studio St. Croix Landscape & Memory 20
Praxis Studio Newark Design Build 24
Praxis Studio Liberty State Park Jersey City 28

3rd Year Graduate Studio: Lower Raritan Watershed Geodesign Studio 30
2nd Year Graduate Studio: Housing and Open Space, Roebling 32
MLA Final Projects 34

Senior Studio: Housing and Urban Space 36
Junior Studio: Regional Planning & Visualization III 38
Sophomore Studio: Introduction to Environmental Design II 42
Material Techtonics 44
Praxis Studio
St. Croix: Landscape as Memory | Christiansted Slave Market
Instructors: Holly Nelson and Anita Bakshi

The Spring 2015 St. Croix Praxis Studio engaged students in an exploration of cultural meaning in public space through a project to develop a new National Park Service Transatlantic Slave Trade commemoration site in St. Croix, U.S. Virgin Islands. Students spent one week in St. Croix collecting data, visiting historical and contemporary sites, and talking with experts and residents. They spoke with multiple stakeholders to gain an understanding of how residents and visitors use the site and how they imagine its future. Site information was collected through mapping, photography, sketches, and interview notes. After returning to Rutgers, students worked on the initial study and development of design alternatives for interpretation of the slave market site based on recent archaeological studies along the waterfront in Christiansted. The analysis of the original data collected—the mapping and documentation of the site’s many facets (ecological, social, political, historical, and economic)—led to the development of conceptual site plans and design proposals for a memorial to be located at or near this site.
The purpose of this design is to create a space in Christiansted that recognizes the impact that the slave trade had on St. Croix through the juxtaposition of the abstraction and the reality of the landscape. Upon colonization, the Danish mapped out the island into an abstract grid system that divided the land into commodities, though in reality, the landscape is much more complex, with a series of undulations and extreme variations in topography. In a similar way, the slave trade removed Africans from their homes and sold them as resources for profit. However, the reality of the situation was that these slaves were actually human beings, with individual cultures, personalities, and identities. Creating this space within the boundaries of the original Slave Trade Market is representative of how powerful of an impact the slave trade had on the island and on the global economy, as well as on modern day culture and what it means to be Crucian.
Having developed my own connection to the history of slavery through the course of this design studio has inspired me to dig further into my own family roots, to define our connection to the Moravians and possibly the slave trade. But if nothing else this studio has shown me that diversity exists where you least expect it, especially if you have lived your entire life believing that Ellis Island was as far back as you could go. I have learned that few things in life are as valuable as knowing the people that came before you, your roots.

Josh Rodriguez, Junior

I felt like I was ready to tackle the challenge for designing to remember slavery, but the reality is that I was not ready. The beauty of the St. Croix studio was being able to step back, learn more about the history of slavery, and to learn about myself. Midway through the semester I shifted my focus back onto the memorial design. The effects of slavery are still being felt to this day. While in St. Croix we were conscious of the Transatlantic Slave Trade, but I think that many of us were equally as conscious of the conflicts in Ferguson, Missouri, and later on in Baltimore, Maryland. These are problems that are in part rooted in the continued trauma of slavery. My hope is that the St. Croix studio will have a lasting impact on my understanding of race and space.

Teddy Aretakis, Senior

This studio has taught me about the importance of one’s culture and how living it is really the only way to preserve it. I believe the knowledge of the slave trade that I gained is also priceless. It will become something I can teach about and even become even more educated in as time goes on. I have also learned to design in a more appropriate way when the question of ethics and culture come into play.

Chelsea Beisswanger, Senior

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It is easy to imagine yourself as a minuscule isolated moment in time separated by the twists and turns of society, but once you become aware of your own place in the universe of things you begin to realize how you act as a string in the network of justice and injustices. I've found that how society has come to this point in time is extremely important in understanding why police brutality is so prevalent in the United States and why women can't have full ownership of their own bodies. That's why I think memorials are so important.

Stacy Martinez, Junior

Coming into the program, I was immediately surrounded by people, students and faculty alike, of many cultural backgrounds. And while I did learn about subjects relevant to landscape architecture at the time, outside of studio I gained even more knowledge and historical information than I would have had sitting in a lecture filled with over 100 students. The St. Croix Praxis Studio has offered me much insight on the many cultures of my fellow classmates and professors, as well as those living in the past and present of St. Croix.

Sarah Korapati, Senior

The St. Croix Praxis Studio started conversations, conversations about things that not many want to discuss, on color and race and discrimination and where we all come from. These conversations were important especially at a time like this in American history when there is so much controversy in the area of race and racism. I took this studio with an open mind, understanding that I would learn something about a different culture. I would have never expected to learn so much about myself, my classmates, the Cruzan people and the lives of all those slaves that have been forgotten. This studio has brought to my attention the lack of awareness there is of all those slaves who gave their lives to building and making American and many other countries what they are today.

Michelle Lim, Junior

Amber Betances, Junior
Proceeding from analysis and design to actual in-ground projects is an ongoing challenge for Landscape Architectural practice, education, and service alike. A salvage and reuse green infrastructure project sited at a community garden was designed and built in connection with Rutgers Water Resources Program’s “Green Infrastructure for the City of Newark” an environmental justice 319 (h) grant from the US EPA/NJ DEP. Green Infrastructure projects in Newark are currently addressing legacy issues of environmental pollution, aging infrastructure, and vacancy.

To establish the context for the building project, the studio used an abridged process of mapping and inventory of sites and flows corresponding to the research areas: water, soil, food, building materials, and social spaces/structures. Working from an initial analysis, the studio developed adapted green infrastructure, garden infrastructure and social space plans and details using locally responsive material and design strategies.

The community envisions Ujimaa Garden as a neighborhood oasis for social space, healthy food production, and green infrastructure. The studio worked with the community to design elements that layer these uses in the small site, constructing two rain gardens, connecting swales, a deck over the rain garden, terraced steps up a steep slope to a future cistern, planting beds, a central social space with a reused concrete bench, additional seating, a structure for compost, and signs for the planters.

(Left) The community had created a memorial wall in the garden for residents who had passed before their time. We realized that the memorial wall was a sacred space to the neighborhood, it and other existing garden elements should remain untouched. (Right) Progressing from final plan design to buildable projects was accomplished through copious amounts of detail sketching, prototype building, models and mock-ups. Sketches carried the design through multiple iterations and proved to be the design drawing of choice as material and site conditions would challenge the feasibility of many studio-designed intentions.
Final As-Built Plan. This plan resulted from individual design exercises, community input and group synthesis work. Four group plans were then presented to the community for additional input, after which the studio as a whole created a final working plan, similar to that shown above. (Top right) Model diagram of water flow on the site. At the site scale the analysis further honed in to the potential for intervention in the larger networks of systems. In the water analysis group the potential for capturing runoff was revealed at the site scale, while also connecting back to the city-wide scale to show the wider potential impact of green infrastructure practices. (Bottom) Existing conditions at the site before the creation of the Ujimaa Community Garden.
As we moved the process along and had completed several of the projects, we had received positive feedback and immense help from members of our partner community group, It Takes a Village Inc, and their re-entry training program. Children helped us dig, and also enjoyed their imaginations running wild in the garden. Community members wanted to be a part of our process, but in reality, we were a part of theirs.

The build process was difficult to start when we found that the site used to be an old junkyard, and during the excavation process for the various projects, we had found several license plates, old bricks, and windshield wipers.

During the build process the class focused on reusing as many materials as possible. The main sources of materials were reused pallets, old tires, and reused concrete. The only materials that were not reused were the top soil and gravel that were delivered to the site. It was moving to see members of the community pass through the garden in a curious manner to see what our class was up to.

The garden’s 2015 Harvest Season Kickoff on May 9th was the day that all members of the community were welcome to help build and participate in giving the garden its final touches to our beginning projects. With a DJ, a fire truck to fill up the rain gardens, and several members helping to dig and make planters, our class had a successful outcome of understanding that the community appreciated our efforts, but we had appreciate the opportunity to be welcome and make an impact in their lives.

Karaia Livshits & Alexis Schenker, Juniors
As demographic transition is rapidly resulting in the growth of cities, an increasing number of people will establish their ecological identity within the context of “urban wildlands.” Such systems are dominated by novel plant assemblages consisting of combinations of native and non-native species. Since they are relatively new and lack the historic legacy associated with “text book” climax vegetative assemblages we assume them to be of lesser value. Such assumptions should be challenged.

**Design Intent:**

Students developed proposals that investigate various methods of altering vegetative trajectories to maximize ecological function while creating a resilient landscape. Such systems are self-organizing to the greatest extent possible, given the limited regional species pool from which recruitment is possible within this urban context. In addition, proposed design interventions will foster an awareness of the site’s industrial past as well as its current vegetative assemblages, cultivating a novel urban ecological identity. In addition, the proposed design must strike a balance among several factors, including: the risk of contaminant transfer, the value of existing ecologies and their anticipated trajectories, and the need for public access and appreciation.

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**Praxis Studio**  
Liberty State Park - Jersey City  
Instructor: Frank Gallagher

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Group work by Bo Young Park, Megan Pillia, Longjun Ju, and Breanna Robles. Plant studies shown at left; design work shown at right.
Our concept, therefore, is the synthesis of these three ecological missions, overlaid with the social fabric of the surrounding city.

1. To encourage and support priority wildlife species
2. To create spaces that invite visitors to safely view, learn about, and interact with the unique ecologies
3. To establish an organizational structure for the site that counteracts the damaging effects of storm events on the ecosystems within the site.

Simultaneously, we seek to accomplish three ecological missions within the park:

- To protect outer habitats and maintain and increase habitat diversity
- To create ecological corridors and support priority wildlife species
- To allow natural processes to respond to sea level rise and surges

As an urban forest, the interior of Liberty State Park is a treasure for Jersey City. We have a responsibility to protect and enhance the existing ecology of the site, but we also believe it is important to share that ecology with the people who inhabit the surrounding city, to provide them with an opportunity to experience nature and to learn its value in the urban context. We must strike a balance between preservation and conservation that allows the ecological functions to flourish while also supporting the social interaction of the communities to serve three purposes:

- To provide a natural oasis from the urban environment.
- To exhibit of plant profiles and animal habitats.
- To go vertical for sustainable educational opportunities and minimal maintenance.

Let it grow and let it flow. After careful consideration of the natural resource inventories for the site, Bo Young Park, Megan Pillia, Longjun Ju, and Breanna Robles, presented a design concept that includes habitat improvements for species of special concern. The concept then brought the city into the forest with walkways constructed at a scale that urban visitors would be comfortable with. Team member Megan Pilla wrote, “The aspect of the site that I love is the balance between its proximity to the urban environment and its remoteness. Its location in the center of the park, buffered by the more designed park spaces along its edges, creates a unique opportunity for the combination of ecological integrity and urban use that could provide valuable ecosystem services, educational opportunities, and a natural oasis from the urban environment.”
Graduate Geodesign Studio
Lower Raritan Watershed
Instructor: David Tulloch

As Rutgers’ Alma Mater proudly declares, the University sits on the banks of the Old Raritan. In the Fall of 2014, the 3rd Year Graduate Students embraced that relationship. Working with the nascent Lower Raritan Watershed Partnership (LRWP), the Geodesign Studio spent the fall semester learning about the 350 square mile watershed and developing alternative design solutions addressing long-terms issues across the watershed. The watershed includes notable landscapes such as the front range of the Watchung Mountains, Edison’s Dismal Swamp, and the mouth of the river between the Amboys, but it is also plagued by lingering contamination problems tracing back to the industrial revolution and large areas of sprawling development since World War II.

Working with Heather Fenyk, the leader of the LRWP, the students heard from various experts while visiting important sites across the region. Building on those experiences, the students developed a comprehensive GIS database about dozens of factors impacting the built and natural landscapes of the watershed, and conducted a series of spatial analyses studying transportation, buildable areas, conservation priorities and potential impacts of climate change.

Finally, the students developed a series of design strategies addressing different issues that emerged from the analyses. To test their concepts and illustrate their ideas, they developed site-specific design solutions. Some pushed the envelope with innovative plans that would take decades to implement while others endeavored to develop plans that could be pursued almost immediately.
2nd Year Graduate Studio
Housing and Open Space for Roebling, New Jersey
Instructor: Kathleen John-Alder

The Roebling Steel Company, headquartered in Trenton, New Jersey invented steel cable wire, and became famous when it used this material in the design of the Brooklyn Bridge. In 1904, the Roebling family decided they had to produce steel in order to remain competitive. However, their land holdings in Trenton, New Jersey could not accommodate the proposed expansion. After a short search, they selected a site four miles south of Bordentown, New Jersey in the Duchy of Kinkora. They constructed an open-hearth steel furnace, a rod mill for cable wire, laboratories, machine shops, offices, railroad connections, and a company town to house their workers. The Kinkora Works stayed in operation until 1973, when equipment obsolescence, high operating costs, environmental regulations, the OPEC Oil Crisis, and a declining stock market forced the closure of the plant. The factory site was subsequently listed as a Superfund Site by the Environmental Protection Agency, and it is currently under remediation. The town, with its worker row houses, brick duplexes, management mansions, firehouse, banks, school, community center and parks remains. The town has commanding views of the Delaware River, is easily accessible by car, and is connected to Trenton and Camden via the Riverline Light Rail.

The Roebling, New Jersey graduate housing and open space studio was tasked with understanding Roebling's rich historic legacy and re-imagining its future.
Teddy Aretakis - Visualizing a Timeline: Spatializing the History of Slavery in St. Croix. The design intends to reveal the Layers of History in St. Croix by means of a three-dimensional timeline. A series of spaces capture the emotion of the stages of slavery, through capture, transport, arrival, labor, death, and freedom. Preserved buildings on site from the Danish colonial era add the layer of Danish history to the space. Finally, landform modifications enhance the contemporary use of the space, primarily through the influence on sound. Overall, the design aims to reveal history through abstract, emotional means, while improving existing use and structures.
MLA Final Project
Independent student work led by a committee

Jacquelin Abeltin  Growing Resiliency: The Social Landscape of a Food Pantry Garden Built in the Wake of Superstorm Sandy

Jennifer Burkhalter  Understanding Community: Designing an Interactive School Landscape for Individuals with Symptoms of Autism


Kara Lugar  THE LIVING SEA EDGE: An ecological approach to coastal protection at the Chapel Site on Sandy Hook, Gateway National Recreation Area

Miloni Mody  Jersey City: Waterfront Past and Future

Tekla Pontius Courtney  A Story of Two Tangents and a Salt Flat: Bristol Dry Lake and Amboy, California

Ty Triplett  Living Coastal Infrastructure: An Investigation into Ecological Enhancements on Engineered Coastal Infrastructure

Xiaoxia Wang  Redesigning an Abandoned Industrial Relic of Liberty State Park

Han Yan  Visualizing Ecological Services: Bridging Land Recovery

(Top Left) Analysis of Jersey City by Miloni Mody. (Middle Left) Early representations of the Salton Sink, a study by Tekla Pontius Courtney. (Bottom Left) An analysis of food production by Jacquelin Abeltin. (Top Right) A design intervention to halt erosion currently threatening the Fort Hancock Chapel on the Sandy Hook unit of Gateway National Recreational Area in New Jersey by Kara Lugar. (Bottom Right) Exploration of meadow establishment and potential applications across the urban gradient by Ty Triplett.
Preparing for a resilient future is among the big challenges for the design professions. Landscape architects, architects, urban designers and planners are working on visionary concepts to master that challenge. The Rebuild by Design competition, for example, has produced long-term goals and planning parameters for a resilient future. But when does that future start? What happens in the meantime? The focus of this semester-long studio was on creative interpretations of the urbanized Meadowlands landscape, addressing possible rebuilding and reorganization in the context of housing opportunities, smart streets, and green infrastructure. The students explored the cultural meaning and identity of the landscape considering existing uses, buildings and open spaces, while proposing new building masses that provide spatial framing for (sub)-urban public life. Housing and mixed use zones were considered as possible uses that support public open space activities. A main goal was to develop housing and mixed use concepts in accordance with ideas of sustainability, smart growth, appropriate tourism and, last but not least, resilience.

The second half of the studio developed open space concepts for residential zones and recreational areas at a site design scale. A brochure documents the acquired data of the inventory and analysis. Further it includes research papers addressing questions that occurred within the design process and that became of particular interest for individual students. That research and intellectual investigation helped the students to assess their progress throughout the design process and informed the final solutions.

Senior Studio
Little Ferry: Resilient Housing and Open Space
Instructor: Wolfram Hoefer

Preparing for a resilient future is among the big challenges for the design professions. Landscape architects, architects, urban designers and planners are working on visionary concepts to master that challenge. The Rebuild by Design competition, for example, has produced long-term goals and planning parameters for a resilient future. But when does that future start? What happens in the meantime? The focus of this semester-long studio was on creative interpretations of the urbanized Meadowlands landscape, addressing possible rebuilding and reorganization in the context of housing opportunities, smart streets, and green infrastructure. The students explored the cultural meaning and identity of the landscape considering existing uses, buildings and open spaces, while proposing new building masses that provide spatial framing for (sub)-urban public life. Housing and mixed use zones were considered as possible uses that support public open space activities. A main goal was to develop housing and mixed use concepts in accordance with ideas of sustainability, smart growth, appropriate tourism and, last but not least, resilience.

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LITTLE FERRY BRIDGE

Group Project - Peter Chang, Eugene Fernandez, Mike Young: This team’s primary goal for Little Ferry, New Jersey was to create a resilient waterfront identity through storm water management, ecology interventions and architecture. The design is focused on reduction of flooding from low-lying geography. Further it addressed pollution, vehicular and pedestrian circulation, urban form, and the 100-year predicted Sea Level Rise. The proposed density of this urban design includes: 79 units per acre, 2 parking spaces per unit, 800 square feet of open space per unit, and 220 people per acre.
Based on an Environmental Resource Inventory (ERI) produced by the entire class, students worked to identify potential opportunities to improve the environmental condition of Jersey City through design interventions. Students worked in groups to develop design interventions that address specific questions related to the opportunities they identified. Designs were based on analysis of the ERI, associated data, and additional research. Students were expected to evaluate their designs for their anticipated impacts—both direct and indirect—and to make adjustments accordingly. Finally, designs were expected to provide a benefit to the city as a whole.

One group of students focused their design question on the idea of preserving the historic identity of a rapidly changing Jersey City. Understanding that the historic identity of the city is tied more to individual neighborhoods than to the city as a whole, they chose to focus their design on a single neighborhood: the Journal Square area. This neighborhood, which is currently composed of commercial and primarily row home residences, will soon be home to several new high rise apartment buildings. The hope of the design team was to provide a physical link to the neighborhood's history so that it is not lost among the sweeping physical and social changes that will soon be taking shape here.

Junior Studio
Jersey City Environmental Planning Studio
Instructors: Jean Marie Hartman and David Smith

Based on an Environmental Resource Inventory (ERI) produced by the entire class, students worked to identify potential opportunities to improve the environmental condition of Jersey City through design interventions. Students worked in groups to develop design interventions that address specific questions related to the opportunities they identified. Designs were based on analysis of the ERI, associated data, and additional research. Students were expected to evaluate their designs for their anticipated impacts—both direct and indirect—and to make adjustments accordingly. Finally, designs were expected to provide a benefit to the city as a whole.

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During the first phase of the course, students performed an Environmental Resource Inventory (ERI), a collection and analysis of spatial and non-spatial data characterizing the natural and cultural resources within the city. Through this process, students identified opportunities for improvements to the physical and social conditions of the city through design. These opportunities served as the basis for individual design questions. (Left) Map of soils within Jersey City. (Right) Map of land use and land cover within Jersey City. Both maps created by Karina Livshitz, Christie Saliba, and Alexis Schenker.
Group Project - Michelle Lim, Karina Livshitz, Alexis Schenker: This program diagram shows how one group sought to enhance historic aspects of Jersey City while allowing for re-development of adjacent areas. They took existing commercial and residential streets and applied their stylistic choices to them in order to better tie residential areas to commercial streets. This included elements such as pocket parks, better lighting, and more pedestrian friendly streetscapes. A series of historical clocks embedded in sidewalks in front of historic landmarks throughout Jersey City aim to provide residents and visitors with a better understanding of the history in Jersey City and its many architectural landmarks. (Right) From the ERI: an analysis of the distribution of street trees across Jersey City by Joshua Rodriguez, Austin Scott, and Kevin Taylor.
Visualization III
Computer-Aided Design for Landscape Architects
Instructor: Anita Bakshi

This course is an introduction to the fundamentals of computer-aided design and drafting as a design and communication tool in the practice of landscape architecture. Intended as a continuation and progression beyond the fundamental drawing principles and graphic design tools introduced in earlier courses, Vis III is designed to further students’ understanding and application of the standards of visual representation in the practice of Landscape Architecture using software platforms such as AutoCAD, Adobe Illustrator, and 3D Studio Max.

This year, the course was taught in conjunction with Juniors’ Environmental Planning Studio focusing on Jersey City. Students worked as a group to create drawings of urban systems and components. Similar to a professional office, their drawings were Xreferenced into shared drawing files to create a complete ACAD sheet set. These base plans could then be used for various studies, analyses, and design proposals for their studio work in Jersey City. Working individually, students measured and drew significant landmark buildings in Jersey City. These were initially created as 2D AutoCAD drawings, which became the base for 3D computer models of these buildings.
(Top Left) Transportation Systems in Jersey City by Kevin Taylor and Alex Thesing. (Bottom Left) Canco Lofts Drawing by Breanna Robles. (Right from Top) 3D computer models of Jersey City Buildings: The Powerhouse by John Foss, The NJCU Campus by Shaun Thompson, and the Tea Company Warehouse by Michelle Lim.
Introduction to Environmental Design II

Instructors: Kathleen John-Alder, Assistant Professor
Andrew Opt’Hof, Part Time Lecturer; Han Yan, Teaching Assistant

Introduction to Environmental Design II explored the concept of site. Students were asked to see the landscape as an amalgam of the existing and the designed, and as a terrain of action for environmental processes and social interactions. Exercises, projects and discussions examined different approaches to site interpretation and design, which they then illustrated in plan, section, diagram and model.

Project I: This studio exercise explored the sculpting of the land. The proposed earthworks had to be economical in form, appear monumental in scale, subtle in expression, express time, and exploit the proximity to the river. The forms could be architectonic (uniform, crisply defined slopes and grades), or naturalistic (stylized and abstract imitations of nature).

Project II: This studio exercise involved a courtyard design for the Bloustein School. The intertwined themes of enclosure, material and program guided the design exploration.
Study propsals for the redesign of the courtyard of Rutger’s Bloustein School of Planning and Public Policy. (Above) Section by Samantha Dreher. (Bottom 3 Images) Plan, section, and perspective with model by Marta Goraczniak.
This course confronts the conventional concepts behind modern building science and material applications, re-applying the processes of fabrication and methods of construction to investigate materiality, particularly in relation to tectonics, critical regionalism and sustainability. Over the duration of this course, students were provided the opportunity to develop both a fundamental understanding of material principles and to demonstrate their application to the analysis and design of material processes. Focused on building a working knowledge of traditional and contemporary building materials, their current applications, and limitations, this investigation focused on materials and their relationship to form.

Throughout the semester we explored the formal implications of material composition, its physical properties, and its fabrication processes at different scales (ultimately arriving at a full-scale application). We worked with a wide palette of tools for representation and fabrication (digital modeling [Rhino, AutoCAD, 3DStudio, etc.] and fabrication [laser cutter, 3Dprinter, and CAD/CAM tools, etc.]), all towards the production of physical models.

This course was a part of a larger project that involved the design and construction of a hinged bench that can be opened to different configurations as desired by the users. The bench was designed to be a functional piece of furniture that also showcased the principles of material tectonics.

Material Tectonics
Instructor: Heather Wilkerson, LEED AP BD&C

This year Material Tectonics students designed and built a hinged bench that can be opened to different configurations as desired by the users.
Study proposals for the redesign of the courtyard of Rutgers Bloustein School of Planning and Public Policy. (Above) Section by Samantha Dreher. (Bottom 3 Images) Plan, section, and perspective with model by Marta Goraczniak.
Rutgers landscape architecture faculty consider the landscape from the intimacy of the private garden to the expansiveness of the geographic region, have published and practiced widely, and have received national and international recognition for both research and built projects. Areas of expertise include landscape remediation of post-industrial landscapes, regional landscape planning of the built environment, ecological site and regional design, community design, and more. We are committed teachers whose experiences as scholars and practitioners inform our instruction, grounding theoretical explorations with practical understanding of what it takes to make a difference in the world. Our position within the School of Environmental and Biological Sciences provides students with access to some of the nation’s top ecologists who have worked together with landscape architects on some of the country’s most innovative projects.

Richard Alomar, Assistant Professor  48
Anita Bakshi, Instructor  50
Luke Drake, Research Associate  52
Frank Gallagher, Instructor and Undergraduate Program Director  54
Jean Marie Hartman, Associate Professor  56
Tobiah Horton, Assistant Professor  58
Kathleen John-Alder, Assistant Professor  60
Laura Lawson, Professor and Department Chair  62
Holly Nelson, Instructor and Undergraduate Program Director  64
David Tulloch, Associate Professor  66
Wolfram Hoefer, Associate Professor and Graduate Program Director  68
CUES - Center for Urban Environmental Sustainability  68
Richard Alomar, ASLA, RLA

My work engages the understanding and practice of design in our everyday world. In an urban state like New Jersey, this model allows for engagement with both design and non-design communities in an effort to impact public policy, urban development, education and civic wellbeing. This work has a particular focus on the integration of green infrastructure and the practice of sketching in the design of landscapes. How can the space between buildings be more effectively designed and used to promote learning, exploration and encourage social interaction? How can sketching and observation build a stronger “mental scaffolding” for generating ideas across disciplines and decision making in design? These are two questions that inform my teaching, research and service.

When faced with problem solving or creative idea generation, people turn to sketching as a way to document, map, and explore physical and emotive aspects of space. Sketching as a visual notation practice is distinct from artistic drawing or rendering in that its primary purpose is to document observations of a particular place, event or process. This practice in visual literacy informs the sketcher on the physical, social, cultural and emotional characteristics of place and initiates the engaged design process.

Through repetition sketchers are able to document and articulate their observations and bridge the gap between immediate impressions of space (the cognitive mental map) and the formal representational drawings (map, plan, section) used to propose cultural, social and design changes in a community.

My teaching engages students in the designed and social world around them. Direct engagement in local settings with university and city officials, and local residents involves students in the practice of solving real world problems with the knowledge acquired through class lectures, studio projects, and personal experience. These projects often introduce students to bigger issues associated with good planning and design, helping them explore and understand personal perception, bias, and the limits of physical design in the engaged design process.
Anita Bakshi, Ph.D., M.Arch

My research investigates new and dynamic approaches to commemoration and memory in the urban landscape, focusing on divided cities as well as the local heritage of New Jersey. Preservation and commemoration have been accused of freezing particular interpretations and creating the fixed and static in opposition to dynamic environments. I explore how heritage practices can more effectively tell complex stories rather than polarized versions, and propose alternative approaches that involve bottom-up participation and flexibility of form and structure.

This includes work that I have done in Nicosia, the divided capital city of Cyprus, to create collective maps of an area that has become a United Nations-controlled no-man’s land. This work resulted in a 2012 exhibition entitled “Nicosia: Topographies of Memory.” I worked to uncover the memories of this area, now enclosed within the Buffer Zone, where all communities in Cyprus traded and shopped together. This area is an important resource, containing a wealth of information about the nature of coexistence or conflict between diverse communities. The exhibition brings this information to light by reconstructing this site – using maps that were created from memories and narratives provided by shopkeepers who once worked or lived in this area. The exhibition reveals that memories are incomplete and oftentimes in conflict with each other, raising the question of how we may seek to grapple with complex and varied portrayals of the past.

Here at Rutgers, I also teach classes in the Cultural Heritage and Preservation Studies Program (CHAPS), such as: “Shifting Cities: Cultural Heritage and Community Organizing Workshop.” This focuses on the methods used by community organizations to protect and promote urban heritage and cultural practices. The goal of the course is to move beyond theoretical discussions of heritage and engage directly with local community organizations. Final student projects for this course - based in Perth Amboy, New Jersey - include a landscape design for the city’s main entryway, a proposal for a mural project, and research on the permitting process for a proposed farmers market at a municipal park.

(Top Left) The process of creating the maps of memory involved collective map-making with many Cypriots over the course of several years. (Middle Left) An exhibition visitor writing on one of the maps. (Bottom Right) A visit from the Cimarrones to the department. The Cimarrones are one of the community organizations I have been working with in order to develop and teach an alternative approach to cultural heritage work. (Right) The Topographies of Memory exhibition, held in the Home for Cooperation in Nicosia in 2012.
Recent Publications


Broadly, I am interested in the links between socio-cultural analysis, geographic information systems (GIS), and community participation. As a Research Associate in the Department of Landscape Architecture, I have focused on research and community outreach with the Gardening the Garden State program. This project explores the spatial and social aspects of community gardening and urban agriculture in order to better understand how these sites function and how they can be planned and managed more productively. Through site observations, interviews, and GIS analysis, I have worked with colleagues in the Department of Landscape Architecture and in communities across New Jersey to provide better information about this growing phenomenon. Since 2012, this work has included a national community garden survey in collaboration with the American Community Gardening Association, identification of best practices for urban, suburban, and rural community gardens across New Jersey, and collaborations with local organizations in New Brunswick and Trenton.

Over 2014-2015, this work has resulted in academic publications as well as community-based outreach. I worked closely with the New Brunswick Community Garden Coalition on planning workshops. Additionally, I was an invited participant at the U.S. Forest Service NYC Urban Field Station, which held a workshop on urban nature research. Such research and outreach informed my teaching of the Spring 2015 course, Social and Cultural Aspects of Design. As the school year came to an end, I also had the honor of participating as a grant reviewer at the U.S. Department of Agriculture in Washington, D.C., where I worked alongside other panelists to evaluate grant proposals for the USDA’s Community Food Projects program.

Over the past year, I have also engaged students in research. Through the Rutgers Center for Urban Environmental Sustainability (CUES), we worked with Isles, Inc., a non-profit organization in Trenton, New Jersey on a project to integrate vacant properties and food system planning. As part of this work, we worked with 14 students to conduct a citywide inventory of vacant properties, conduct focus groups and questionnaires of community gardeners, and provide GIS analysis to identify suitable locations for food production, distribution, and retailing. This project was funded by the Rita Allen Foundation and the New Jersey Agricultural Experiment Station.

(Top Left) CUES intern Danny Rico and Iana Dikidjieva of Isles, Inc. work from a Trenton field office to link GIS data with smartphones, which other interns then used to gather data on vacant properties. (Bottom Left) Volunteers help build a community apple orchard in New Brunswick, funded in part through the Department of Landscape Architecture’s 2013 Rutgers Community-University Partnership Grant. (Right) Luke Drake (pictured to the right) and students from the Dept. of Landscape Architecture during a training session to conduct field surveys of vacant properties in Trenton, June 2014.

Recent Publications


Sometime during 2008 an unprecedented global demographic transition occurred, the majority of us now live in cities. This fundamental change in where we live will undoubtedly change who we are and how we come to understand natural systems. While urban areas are generally considered the home of the best creative and artistic talent, the pioneers of ground breaking public policy and considerable economic drivers they are often simultaneously the sites of abject poverty and extreme environmental degradation. If sustainability is truly a human goal then the development of a functional land ethic must be possible within the paradoxical context of the urban environment.

For over thirty years I have explored the connection between people and landscape through both land management and academic research. I have served as Chief of Interpretive Services, Administrator and Assistant Director for the New Jersey Division of Parks and Forestry. My current appointment as the Director of the Environmental Planning and Design program within the Department of Landscape Architecture consists of teaching, and working with academic administrators, and faculty to ensure the continued development and delivery of a cutting edge program.

Towards this end my research interest in urban ecological restoration has focused on the sublethal impact of soil metal contamination at both the species and assemblage level. As a member of the Urban Forestry Laboratory we have examined the resiliency of natural assembled or novel vegetative communities. We have explored the ecological risk associated with translocation and bioaccumulation of soil metals. We have looked at distribution, productivity, diversity and trajectory patterns. While soil contamination is undoubtedly a biological filter that results in limitations, the robustness within these novel systems is amazing. Understanding such filters, the resulting feedback loops and the potential for alternate stable states will allow for the development of realistic restoration objectives and sustainable design solutions.
Watershed planning and management depend on GIS based models that predict the rates of storm water absorption and runoff, based on landuse/landcover. These models treat woody vegetation as a single category – assuming similar absorption and runoff to occur in large and small patches, suburban vacant lots, and protected conservation areas. However, recent research indicates that many ecological processes are different in urban forests than in undisturbed or rural forests and that there is substantial variability. For this particular study, we focus on the portion of the urban forest that might be defined as a woodlot, rather than the broader definition that includes street trees, areas of managed vegetation such as gardens, or urban wetlands. This study investigates how urban and suburban forest structure and composition are related to soil water absorption and runoff.

We began the project by studying the relationship between forest structure and soil structure with a focus on how erosion and water absorption patterns can be predicted by forest structure. These calculations are important in the protection of drinking water resources as well as to our understanding of ecological functions of urban forests. Invasive plants and a variety of pests and diseases may also be related to these patterns and discovering repeated appearances or distributions that can be explained by forest landcover/landuse patterns will be useful in forest health management.

In ecological analyses, forests are often differentiated by dominant species. Forest types based on landuse/landcover may correlate with functions within the watershed more clearly than ecological types. So, in watershed studies, it may be more appropriate to differentiate forested land by soil types (e.g. xeric versus mesic), by position (e.g. interior versus edge conditions), by use (e.g. conservation versus residential), etc.

• Twenty forest patches were randomly selected for site work.
• Each patch is sampled using ten 50 meter long 2m wide belt transects, five transects at the edge and five transects at the interior of the forest patch.
• Each transect is sampled for plant community composition and structure so that species composition, leaf cover, canopy heights, and trunk diameters are measured. (Zhongming 2010).
• At one point along each transect, soil samples will be drawn.
• A 25 cm square is measured to record the presence and cover of organic material on the soil.
• Each soil sample is evaluated for texture, organic content, porosity, permeability and bulk density.

Jean Marie Hartman, Ph.D.

(Top Left) GIS map of buffer and forest (Center Left) Transect location in forest. (Bottom Left) Soil sample collection (Right) Students collecting samples in the field.
My research attempts to get inside the transformative process – to work within it. Looking at how a material changes from nature to resource; or from beloved architecture or public space to demolished rubble yields key insights into processes of change that will be essential strategies in transitional, adaptive and resilient ways of living and changes in behavior geared towards long term survival. The focus on change also leads back to instruction and ongoing growth in design – the observation and study of how things change in natural, built and composite systems informs my practice in design research.

My research investigates the material streams, or systems of materials handling that come to bear in the profession (broadly considered) of Landscape Architecture. The overarching objective is to tease out opportunities for re-imagination, intervention, adaptation, and redirection of the material streams within the long-term processes of building projects. Construction and demolition materials and stormwater are the primary areas of research, examining both as socially constructed material /flows. Seeing the built through the lens of the movement of materials utilizes this long view of the building process where material /flows in and out of projects (temporary uses) back out into a raw material category and potentially returned to use in new configurations. But between use, disuse, demolition, deconstruction, disposal or reuse – the path that materials travel is deeply influenced by the social constructions of meaning, especially around issues of contamination, residue, productivity, value and justice.

The early research while in practice with Rubbleworks and Margie Ruddick/WRT Design focused on proposals, planning, design, specifications and construction observation for reuse; while my current work investigates alternative modes of project delivery. The research is informed by theoretical research on participation, hands-on learning and demonstration landscapes; the work is grounded in physical interactions with and interventions into waste streams through design/build practices within the Extension and LA Studio, Construction and Seminar projects. To realize the triple-bottom-line benefits of reused materials and landscapes the design/build projects focus on participation, education, workforce training as well as waste stream diversion into reuse. The projects are structured as much for demonstration and practice of working methods for our diverse groups of participants such as LA students, High School students, volunteers, DPW workers, Recently Incarcerated Re-entry Program participants, Community Gardeners and contractors as they are of reuse strategies and green infrastructure systems.
My scholarship explores the transformative role of ecology and environmentalism in the discourse of mid-twentieth century landscape design. In particular, I am intrigued by the hyper-contextual design methodologies of the period and how they attempted to counter the ahistorical constraints of modernism through the merger of natural and cultural history. To date this work has concentrated on the process theories and systems thinking of the landscape architects Ian McHarg and Lawrence Halprin. I also apply this scholarship in studio teaching, where I seek to promote a productive engagement with history using contextual, layered chronologies. These chronologies, which can be read both synchronously and diachronically, create interwoven narratives that reveal how natural processes and human action play against each other over time to create the complex landscapes we inhabit. Both aspects of my scholarship shed new light on the contemporary practice of landscape architecture and its conception of stewardship, sustainability, and infrastructure systems.

Most recently, my scholarly investigation of environmentalism, ecology, and chronological narrative has led to my participation in a multi-disciplinary study of the territorial dynamics of the Svalbard archipelago in Norway. This mapping project, done in conjunction with the Future North research project of the Oslo School of Architecture and Design, and the Tromsø Academy of Territory and Landscape Studies, will imaginatively analyze Svalbard through the creation of three-interrelated chronologies. The chronologies will include the fluid relationship of land, water and climate change; the geopolitical agency of Svalbard monitoring systems; and the impact of resource extraction upon the archipelago’s pristine landscape.
My passion for urban agriculture continues to drive my scholarship into new directions. For over twenty years, my work has primarily focused on community gardens, which I have investigated through case studies, historical research, national surveys, and direct engagement. I have often heard gardeners talk about their love of gardening and desire to maintain cultural connections with their family farming roots. I’ve also heard critics of urban gardening associate it with negative histories of poverty-based necessity, inequality, and subjugation. This ambiguous association of current gardening efforts and cultural traditions, particularly in disadvantaged communities of color, has led to a current research collaboration with documentary/film-maker Will Atwater, entitled: “Gardens of Toil and Rebirth: African American Household Gardening Reconsidered.” This proposed video will focus on historic and contemporary practices and attitudes about household food gardening in African American communities, highlighting the ambivalence developed from agricultural cultural traditions and current concerns about sustainability.

One case study focuses on historical and current practices of subsistence and small-scale agriculture in St. Croix, U.S. Virgin Islands. St. Croix has a complicated history with agriculture and local food production. During the 17th-18th centuries, the island was dominated by a plantation economy that relied upon enslaved labor. Plantation managers provided the enslaved with kitchen gardens and provision grounds to grow food during their “free time.” These included root crops, tree crops, and some grains and legumes—all of which could be maintained with the limited time and labor. Industrious individuals sold extra produce at Sunday markets, allowing them to buy goods and sometimes even save enough money to buy their freedom. After emancipation, plantation owners sought to maintain worker dependency by providing gardening land as part of annual contracts while actively discouraging land ownership for small-scale market farming endeavors. Today in St. Croix, there is growing interest in revealing this historical legacy of self-reliance. This has become increasingly relevant as current changes in the economy have lead to a rise in the number of home vegetable gardens and some are proposing to recreate the provision grounds as a means to educate Crucians about agriculture, cultural history, and sustainability.
Holly Nelson, RLA

A professional design career enhances my ability to teach applied and professional aspects of the discipline. I maintain my studio practice in Princeton, employ student interns, and participate in American Society of Landscape Architecture (ASLA) activities nationally and at the state chapter level (NJASLA). In addition to winning several professional design awards, I also mentor students to win professional awards and to present at academic and professional conferences. My scholarship explores the relationship of landscape architecture to the agricultural landscape—in particular, land stewardship (from how Aldo Leopold defines it to sustainability and ecosystem services) and the integration of agriculture into the larger community. These issues, while not new, are of crucial importance to how we shape our landscapes; what is new is how a landscape architect can incorporate these ways of thinking in the design of agricultural landscapes. This area of scholarship has been important in my development of studio problems (two farm studios) and an interdisciplinary seminar (Ag and the Landscape), all of which demonstrate the value of the discipline of landscape architecture to the mission of the School of Environmental and Biological Sciences within a land grant university.

Two design studios had farm themes (Re-visioning Cream Ridge Agricultural Experiment Station at Rutgers; Cherry Grove Farm Education Center Studio) where students interfaced with farmers and farm researchers to create people-friendly on-farm experiences. The goal for the Ag + the Landscape seminar is to develop agricultural literacy while providing farm-related service learning opportunities. Two semesters focused on peri-urban farming, and three semesters have been focusing on urban agriculture—collaborating with Ag in the City, a non-profit committed to sharing knowledge, best practices, developing strategic partnerships and giving a voice to its advocates. Other partners include NJ Farm to School, Food Corps, Greater Newark Conservancy, and Isles.

More important than a particular subject of inquiry, I believe that landscape architecture can create connections between people, both within the studio and connecting to larger communities: The landscape becomes common ground to facilitate and deepen these connections. This collaborative, people-oriented design approach becomes a theme in my teaching. Three St. Croix studios have provided a continued collaboration with the National Park Service (NPS) St. Croix, USVI, providing us with four different opportunities to design cultural landscapes for people to discover and enjoy (the first Trans-Atlantic Slave Memorial for the NPS next to Fort Christiansvaern in Christiansted; Marine Research Education Center at Salt River Bay National Historical Park and Ecological Preserve; NPS Visitor Center design at Salt River; Education Center for St. Croix Environmental Association.) In addition to incorporating aspects of public history, these studios also investigated community narratives to make designs relevant to everyday use as well as to tourists.

(Left) Photographs and analytical work from the 2012 St. Croix design studio focused on designing a marine research and education station. The design studio contrasted and super-imposed site visit findings with cultural and historical readings and the study of GIS maps. Students utilized a humanistic geographical perspective in combination with analytical spatial geography to compound their understanding of place. (Right) The Cherry Grove Farm Education Studio.
Farmer Oliver and his crew do not grow many vegetables and do not use a lot of heavy machinery. By relying on energy from the sun instead, he grows pastures where grass fed cows graze the land and produce milk used to make some of the most delicious cheeses in the region. Undoubtedly his unique and low impact style of farming, the care for his animals, and the attention to soil fertility is evident in the high quality product created from proper care of his natural resources.

The proposal for the ecological farm trailhead is similar in this mentality; it pays attention to local resources and community. The trailhead highlights benefits and limitations while creating an innovative, highly sustainable, and creative design. The community is encouraged to participate and learn by actively engaging in a set of activities to contribute to the farm’s productivity.

As visitors approach the farm they are instantly greeted by a permaculture garden and a recycled pallet structure; a view that is only a hint of what is to come upon entering the farm.

The permaculture garden is an instant contrast between industrial agriculture and practices driven by natural and self-sustaining ecosystems. The trailhead design and activities send visitors around the farm and into the woods to gain agricultural and ecological literacy while collecting sticks and materials to weave into the fence.

The trailhead provides ample room for groups of all sizes and encourages interaction and agroforestry education by presenting a shared, tactile experience of what it means to be resourceful.

"Eventually everything connects - people, ideas, objects. The quality of the connections is the key to quality."

-Charles Eames

“Design is a response to social change.”

-George Nelson
David Tulloch, Ph.D.

The built environment shapes the health of its inhabitants with our cities as the frontlines of this conflict. Asthma is a global urban epidemic. In the US, asthma affects 21 million Americans, including nearly 9 million children. Nationwide, 1/3 of all children born in the US after 2000 will have diabetes. In the US, minority neighborhoods in cities have particularly high rates of childhood obesity. Limited healthy food offerings in many neighborhoods make chips more accessible than produce. American auto manufactures have started using a second crash test dummy, too. Today, obesity is our biggest killer.

David Tulloch has been increasingly involved in research investigating spatial factors influencing ways the built landscape can (and does) shape the health of its residents. There is a growing recognition of the geospatial dimension of healthy living and wellness and its relationship with the built environment. Dr. Tulloch is forming a Landscapes for Healthy Living Lab within the Center for Remote Sensing and Spatial Analysis where he also serves as the Associate Director.

Over the last few years Dr. Tulloch has been actively working with a team mapping factors impacting childhood obesity with support from the National Institutes of Health and the Robert Wood Johnson Foundation. Maybe you saw some of their early maps illustrating the spatial relationships between convenience stores and social characteristics in New Jersey cities like Newark, Trenton and Camden. Unleashing the power of spatial analysis, they showed a clear linkage between lower rates of obesity in children and living close to a large park.

Demonstrating that urban health is about more than just obesity and food, Dr. Tulloch has used GIS to map patterns of access to physicians and specialists, highlighting possible disparities across the Garden State. He is also investigating patterns of HIV/AIDS and comparing them with access to different interventions with partners from Rutgers-Camden. One of the research highlights of the last year was Dr. Tulloch’s role moderating a panel on Urban Health and City Planning and lecturing on spatial health issues at a meeting hosted by the Universitätsallianz Ruhr (UA Ruhr) at German Consulate in New York City. He also served on a panel with Harvard’s Chair of Landscape Architecture, Charles Waldheim, at the 50th anniversary celebration of GIS at Harvard’s Graduate School of Design.

In the next year the Landscapes for Healthy Living Lab will tap into the power of mobile mapping by integrating crowdsourced or grassroots geospatial data with existing databases to create constantly updated maps to support decisions about the urban landscape. By bringing landscape architecture into the conversation, the lab will emphasize the opportunities for design to improve the health of our communities.
The Center for Urban Environmental Sustainability (CUES) is a partnership between the departments of Landscape Architecture and Environmental Sciences at Rutgers. This collaboration provides a unique opportunity to integrate the best design, science, and engineering expertise to holistically address urban environmental challenges. CUES contributes solutions to a wide spectrum of urban environmental issues, ranging from designing the award-winning Voorhees Environmental Park on a former landfill, to leading research that supports the reintroduction of ecologically extinct Eastern Oysters back into the Hudson-Raritan Estuary. Several recent CUES initiatives and projects involving Landscape Architecture and Environment Sciences graduate and undergraduate students include:

**Urban Living Coastal Infrastructure:** The need for protection when creating resilient urban communities is often answered with hard engineered protective structures. Sea walls, revetments, and berms often have a negative impact on coastal flora and fauna – in particular in urban areas where space is limited. This graduate research project, supported by a grant from Stantec, investigated possible ecological enhancements to engineered urban coastal infrastructure. The design intent is to create, improve, or restore habitat lost due to the construction of the hardened edge conditions. (Right)

**The Perth Amboy Second Street Park:** This site is situated across the street from the Robert N. Wilentz Elementary School between Patterson Street and the Raritan River waterfront. CUES worked collaboratively with the City of Perth Amboy and the Middlesex County Improvement Authority (MCIA) to gather feedback from the community on what they would like to see in the park and to deliver concept designs of what the park would look like based on the feedback from the community. The final design is an open, safe and environmentally sustainable space that takes an old abandon industrial site and turns it into a community asset. (Bottom Left)

**Oyster Reintroduction Research:** The USACE Comprehensive Restoration Plan for the urbanized Hudson-Raritan Estuary includes re-introducing 200-acres of Eastern Oysters by 2020. The presence of oysters would improve water quality, provide habitat for associated marine species, and could contribute to shoreline protection. CUES is responsible for research design, data collection, monitoring and modeling activities, and data analysis related to NGO NY/NJ Baykeeper’s oyster reintroduction efforts.
A test section for Little Ferry incorporates the seven criteria for consideration.

- Swales and rain gardens filter runoff before it reaches waterways reducing turbidity and eutrophication.
- Secondary wall prevent runoff from passing and can be used as a second line of defense and exceed the proposed Rebuild by Design berm elevation of 13'.
- Waterfront access allows for visitors to interact with the water and opens the door to trash removal.
- Marine gabions are used to improve sedimentation and help absorb any wave velocity. External areas are packed with oyster culch to improve recruitment.
- Marine mattresses are filled with stone and oyster culch to reduce scour, improve recruitment, and allow for intertidal pooling at low tides.
- Waterfront access allows for visitors to interact with the water and opens the door to trash removal.

Mean High Water 5.9' Elev.
Mean Low Water .7' Elev.
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