Exposure to nature in childhood is essential for healthy development, yet self-directed outdoor discovery is waning. CMG and EHDD have collaboratively designed campus environments which create learning opportunities and inspire stewardship of the immediate natural environment through indoor-outdoor spaces that integrate natural systems and an interdisciplinary curricula, cultivating a campus culture of outdoor learning.

Learning Objectives
1. Understand the process of integrating class curriculum with campus planning and design
2. Learn tools for collaborating with stakeholders to cultivate engagement with project and site
3. Examine strategies for integrating natural and built systems
4. Gain insight into the potential and challenges of integrating learning opportunities within educational projects

Presentation Outline
1. Introduction
   a. State of Mind
   b. Basic Truths
3. Setting the Stage
   a. Marin Country Day School
   b. Marin Academy
   c. Nueva School
   d. Mark Day School
4. Curriculum
   a. Collaborating with faculty to integrate curriculum, site and building
5. Building Community
6. Inspiring Curiosity
7. Ways to Apply These Ideas Everywhere
8. Lessons Learned and the Next Big Questions
JAMIE PHILLIPS, ASLA | CMG Landscape Architecture
Jamie Phillips is a licensed landscape architect and senior associate at CMG Landscape Architecture, leading the design and management on a range of project types from site design and planning to storm water management systems and ecological habitats. Jamie has a passion for layering culture, ecology and practicable programming to generate an enduring sense of place in the educational projects to which she's had the privilege of contributing.

EMILY BELLO | EHDD Architecture
Emily Bello is a designer at EHDD Architecture in San Francisco with a focus on educational projects. Emily works on master plans and buildings that evolve out of the unique qualities of the site they inhabit and blur the distinction between built and natural systems. Her experience collaborating with exhibit designers on the Exploratorium at Pier 15 in San Francisco and educators on school master plans and buildings, has inspired buildings that integrate educational opportunities into inspirational learning environments that bridge the building and the landscape.

Sources:
http://www.cmgsite.com/projects/campuses
http://www.ehdd.com/work/markets/Educational

Twain, Mark. The Adventures of Huckleberry Finn. (Penguin Classics Hardcover, September 30, 2014)
The Marin Country Day School project included developing a 25 year master plan for the K-8 private school campus, nestled on 37 acres on the San Francisco Bay. MCDS's vision was to create a campus that would not simply be a structure for learning, but that would itself become a part of the curriculum.

Life at MCDS is close to nature; the entire campus is located within its own watershed. Students walk outside from building to building and the school's iconic image is a pair of colorful galoshes kindergartners use to tromp through the stream that runs alongside the campus. The new buildings, inseparable from their landscape, hold close to these campus traditions. The library and classrooms are integrally connected to outdoor learning spaces and fit within the existing campus footprint to preserve natural surroundings. The courtyards, including the terraced Step-Up courtyard, bring this landscape into the heart of the campus. A restored creek returns the east edge of the campus to a more natural state. Students are stewards of their campus creek, actively monitoring invasive species and tracking the restoration progress. The buildings and landscape connect to the ecology of their place; the same bioswales that provide Upper School students with a quiet retreat into the landscape also filter the sediments from surface runoff, cleansing the water, recharging the aquifer and reducing pollutants reaching the restored Creek and San Francisco Bay. Rainwater that falls on the roofs is collected and stored in an underground cistern that feeds rainwater to toilets and acts as a heat sink to cool the building. Strategically located overhangs shade the buildings, while thoughtful building orientation and operable windows enable the building to be naturally ventilated and passively cooled. All these natural systems are the result of careful engineering to provide exceptional comfort while maintaining connection to the outdoors. This project is recognized as the first zero-energy classroom building in North America and received its LEED® Platinum certification from the U.S. Green Building Council in April 2010.

Strategies: bioswales, creek restoration, farm to table program, rainwater cistern for toilet flushing, natural ventilation, daylighting, passive heating and cooling, energy monitoring, green roof, stewardship opportunities for students
Awards
2012  ASLA NCC Awards, Design: Commerical + Institutional, Honor Award
2011  AIA SF Design Awards, Excellence in Architecture, Honor Award
2010  Savings By Design, Award of Merit
2010  AIA SF Publication: Small Firms, Great Projects: Landscape Project
The site for the Science and Innovation Center and Garden at Marin Academy, a private high school in San Rafael, is located in place of an existing parking lot. This site was specifically chosen to reclaim the center of campus for students instead of cars, and to create a visible and vibrant presence for science learning in the heart of campus.

The project creates a pedestrian spine that connects the south campus to the north, academics to athletics. This spine separates pedestrian traffic from vehicular traffic on campus, improving pedestrian experience.

The site strategy will use a combination of bio-retention rain gardens and permeable pavement to treat and mitigate site stormwater runoff. A new science garden will create a vitalized, experiential learning space. Science learning will spill out of the classrooms into this court, supporting outdoor, hands-on science education. Natural science exhibits such as stormwater conveyance and treatment gardens, and native plant communities will be integrated in the court. Working with the faculty, students will grow the native plants that will be used to plant the science garden. Multiple outdoor classroom and gathering areas, such as a terraced seating area, will allow for outdoor teaching when weather permits. The new building is sited to preserve the existing redwood tree to the south of the proposed building. A redwood deck will connect the existing science building to the new Science and Innovation Center and provide a shaded place for the science community to gather.

Strategies: bio-retention rain gardens, permeable pavement, science garden, outdoor gathering areas, outdoor classrooms, native plant nursery, stewardship opportunities for the students, infiltration trench, guerilla student garden
The Nueva School is a nationally recognized Pre-K-8 independent school serving high ability students and emphasizing integrated studies, creative arts, and social and emotional learning. The campus is a heavily wooded parcel of approximately 33 acres at the top of a small promontory overlooking the Town of Hillsborough. The 2012 Master Plan Update provides a 15-year vision for the school, articulating the school’s vision and values into a physical plan for the campus. Through an open, thoughtful and inclusive process of listening and analysis, overarching goals were extrapolated that formed the framework for future campus development. The students created maps of their campus experiences.

Located on a woodland ridge, it was essential to preserve the elements most cherished by the Nueva Community. **Areas of play and creative engagement** with nature are an essential part of the culture of the school and were preserved while allowing for new program and **preservation and restoration of existing woodland areas**, enabling Nueva School to be a responsible steward of their cherished campus for future generations. The master plan strengthens and clarifies site circulation and reclaims the **heart of the campus as a pedestrian space**, improving campus safety. **Age-appropriate outdoor areas** outside of the middle school and lower school classrooms provide areas for outdoor play, teaching and discovery. An outdoor amphitheater, connects the lower and middle school areas of campus, weaving through the existing trees, and provides a gathering place to support the students mentoring programs. An **terraced food production garden** will link the café to the new environmental center. The framework focused on creating a resilient and regenerative Nueva School Community by focusing on water, carbon and nutrient cycles evident on site and built-upon in the Master Plan.

**Strategies:** outdoor gathering areas, outdoor areas for play and exploration, bioswales, bio retention rain gardens, outdoor classrooms, edible school garden, stewardship opportunities for the students, native plant restoration and preservation
Mark Day School inhabits a small Mid-Century modern campus with covered walkways and thoughtful courtyards which connect grade levels. Unfortunately, the existing buildings turn their backs on the main quad, and the students were discouraged from walking across the lawn. The proposed new Learning Commons, Creativity Lab & Administration Building is sited and designed to open up the classrooms to the quad, reclaim its purpose and create new school traditions in the campus heart.

The management of site water around the new addition building and quad will be achieved through the use of bio retention areas in the landscape that will retain site water that drains from the building roofs. The placement of rainwater leaders will be such that these bio retention areas receive most of the roof drainage in order to reduce site runoff and encourage infiltration of site water into the ground as opposed to hard-piped storm drains.

Strategies: bioswales, outdoor gathering areas, outdoor classrooms, use of municipal recycled water line for irrigation, campus heart