

POSITION DESCRIPTION

Civil Engineering Department Head

KULPER & COMPANY, LLC

Executive Search Consulting
Search #11-02-006

OPPORTUNITY SUMMARY

This is an extraordinary opportunity for a candidate with the right background and understanding of the job to make a major contribution in advancing the development of Polytechnic Institute of New York University (NYU-Poly) and the role of engineering throughout NYU and its global network university. The new Civil Engineering (CE) Department Head will work closely with the executive team and departmental colleagues at the Institute to implement the transformation of the CE department, help fulfill the Institute's broader strategic vision, participate in enhancing the role of engineering throughout New York University and cooperate with the Center for Urban Science and Progress (CUSP) that is now under development.

NYU-Poly is a 157-year-old institution of higher learning known around the world for its breakthrough research in the sciences and engineering and for preparing future leaders in a wide array of fields. It is well-acknowledged for seminal contributions to the field of civil engineering. NYU, founded in 1831, is now one of the largest private universities in the United States. Of the more than 3,000 colleges and universities in America, New York University is one of only 60 member institutions of the distinguished Association of American Universities. Enrollment surpasses 40,000 students attending 18 schools and colleges at five major centers in Manhattan and at sites in Africa, Asia, Europe and South America. The recent affiliation of Polytechnic University with New York University (NYU) is based on the premise that NYU's advancement in science and technology is greatly augmented by Polytechnic's rise to excellence. This has created a dynamic environment for professional growth for NYU-Poly's faculty, student body and other key constituencies. New faculty are being hired, new research centers are being built, new infrastructure for faculty and classrooms is being acquired and new programs are being implemented.

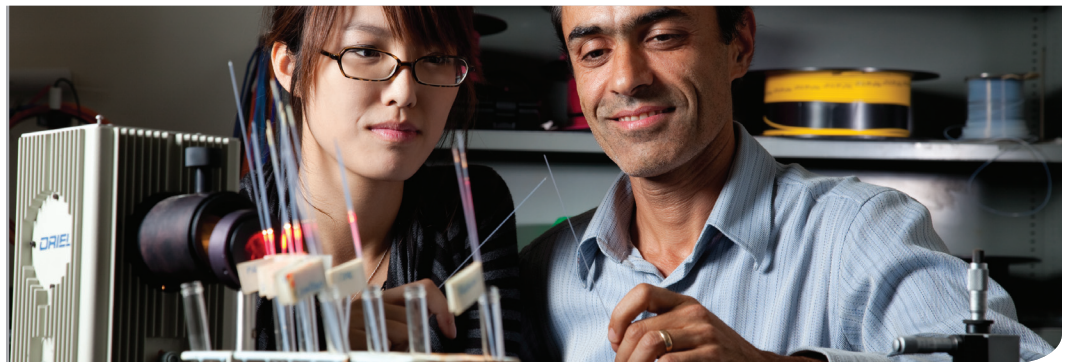
The Department of Civil Engineering is dedicated to advancing the body of knowledge and professional practice of civil engineering to meet the challenges of the coming decades. There are more PhDs engaged in all elements of civil engineering in New York City than anywhere else in the world. As one of the world's leading cities, New York City is a key "laboratory" for breakthrough advances to meet the needs of an increasingly urban world.

At the end of 2008, 50% of the world population lived in cities, 95% of which still dump raw sewage into their waters, and where the rapid rate of motor vehicle use (reaching 1.2 billion cars on the road by 2015) is creating severe bottlenecks to mobility. By 2050, the world urban population is expected to double. This rate of urbanization will result in massive expansion of hundreds of cities, each presenting new challenges in transportation, energy and power, environment, quality-of-life and security. Thus, there is a real need for universities with strong expertise in urban systems engineering disciplines to respond to these challenges with scientific, technological and engineering skill.

The key objective of the CE Department Head is to build a transformed department that can address these challenges.

THE PRIMARY GOALS OF THE POSITION ARE

1. Transform the Department of Civil Engineering. Define the priorities, create a research agenda that meets the urban and intelligent infrastructure needs discussed above, hire new faculty and encourage existing faculty to meet these challenges, attract top students, increase research/grant funding for the Civil Engineering department and build linkages to key disciplines, such as ECE and CSE, in NYU-Poly and NYU.
2. Refocus the core strengths of the Department of Civil Engineering to more closely align with the Institute's strategic vision and key initiatives, especially in the area of urban infrastructure and the future of cities.
3. Introduce and build the engineering and technology capacity, throughout NYU and its global network, to substantially expand NYU's ability to conduct science and technology research and development.
4. Play a key role helping NYU-Poly and NYU become a top-ranked leader (globally) in urban systems.
5. Take an active role in the development of the Center for Urban Science and Progress now under development under NYU's leadership, in close partnership with other universities and industries. The Center is intended to generate both educational and research programs to fulfill increasing technological and scientific needs of sustainable urban development. It is a part of the broad-based "future of cities" initiative of NYU.



Civil Engineering Lab, NYU-Poly

THE MERGER OF POLYTECHNIC AND NYU

In 2008, the trustees of both universities voted to affiliate. The impetus for this affiliation is that the combination of core strengths of the two institutions will accelerate the growth of both to the long-term benefit of each. With the resources and prestige of NYU now available to back the growth of the core engineering programs of Polytechnic, considerable advances are being made in program instruction, research and funding.

The strategic vision, specific to NYU-Poly, is to develop engineering at NYU through the development of NYU-Poly. This not only means making NYU-Poly's engineering and science programs highly attractive to the best faculty, students, foundations, corporations and government agencies around the world, but also extending engineering into the key schools and research activities of NYU. In order to do this, the quality of the talent on the NYU-Poly team must become world-class and able to meet the technological and engineering challenges of the 21st century.

**NYU-POLY
LOCATION
– Brooklyn,
New York City
and Global**

Brooklyn is a very special part of the most vibrant and important city in America. In the past two decades, Brooklyn has become a “hotspot” of creativity, growth and redevelopment. New restaurants, art galleries, breweries and other centers of culture abound. Young professionals and the “cognoscenti” want to be in Brooklyn because it is an exciting destination. Brooklyn offers many major cultural institutions such as the Brooklyn Museum of Art, Brooklyn Academy of Music, Brooklyn Botanic Garden and Prospect Park (designed by Frederic Law Olmsted over a century ago). Major real estate development, anchored by the MetroTech Center, of which NYU Poly is a prominent participant, has transformed the area around the main campus. Unique and affordable living accommodations can be found within walking distance or a short subway ride of the main NYU-Poly campus located in MetroTech Center near Jay Street. NYU-Poly is very active in leading the further development of the MetroTech Center through its many efforts involving new business incubation, continuous research and innovation: **i²e**.

New York City is America’s greatest and most influential city. It is the financial capital of the world and the home of thought and creative leaders in many fields. NYU-Poly and NYU work closely with the City of New York on key infrastructure projects involving transportation, security and multiple elements of urban planning and systems. Urban Systems research efforts are currently being conducted by principal investigators at NYU’s Wagner School and the CE Department at NYU-Poly. At the direction of Mayor Michael Bloomberg, the City of New York is actively working to create an entirely new/world-class applied sciences and engineering campus to be located in New York City, to be situated on available city lands and supported by capital grants. The vision is to create an entirely new engineering and business center in New York City similar in impact to Silicon Valley, but wholly in a New York manner and style. NYU-Poly and NYU will submit a response to the RFP.



Brooklyn Bridge, New York City

**NEW YORK
UNIVERSITY**

The main campus of NYU is located in historic Greenwich Village (about a 15-minute subway ride from the MetroTech Center), world famous for being a center of the arts and higher education since the early 19th century. In the areas of medicine, law, business and the arts, NYU ranks in the top tier globally. Over the past 25 years, NYU's growth has been among the fastest for top tier universities. The University Development office has attracted close to \$3 billion through capital and annual fund efforts highlighted by a gift of \$100 million from the Druckenmiller family. In addition, the University is a major recipient of sponsored research grants in support of principal investigators from the NYU Medical School and other programs throughout the University.

NYU has established itself as the first global network university, with comprehensive liberal arts campuses in Abu Dhabi and Shanghai, which include engineering programs supported by NYU-Poly. Other sites in the global network for study and research include: Accra, Ghana; Berlin, Germany; Buenos Aires, Argentina; Florence, Italy; London, England; Madrid, Spain; Paris, France; Prague, the Czech Republic; and Tel Aviv, Israel, among other locations.

**NYU-POLY:
STRUCTURE AND
KEY STATISTICS**

Founded in 1854, NYU-Poly is a comprehensive school of engineering, applied sciences and technology with a tradition of invention, innovation and entrepreneurship: **i²e**. NYU-Poly enrolls nearly 3,000 graduate and 2,000 undergraduate students. Among its alumni and faculty are Nobel laureates, notable inventors, world-class scientists and successful entrepreneurs. NYU-Poly is playing an integral in the ongoing development of NYU's Abu Dhabi campus.



Jacobs Academic Building, NYU-Poly

**DEPARTMENT
OF CIVIL
ENGINEERING
SYNOPSIS**

The Department of Civil Engineering currently has 550 students in total: 300 graduate and 250 undergraduate students. The department offers BS, MS and PhD degrees in civil engineering; BS and MS degrees in construction management; MS and PhD degrees in transportation planning and engineering; and MS degrees in environmental engineering and science. The Department of Civil Engineering is ABET accredited and is not due for reaccreditation for several years. There are no "online" instructional components at this time, but NYU-Poly is supporting increased online offerings.

The CE Department has a distinguished history of research in transportation engineering and planning. Many research efforts are underway at this time including special projects for the Metropolitan Transit Authority. Historically, research has been motivated by key infrastructure initiatives for New York City. For example, the department is considered a leader in building information modeling, use of recycled materials in construction and in remediation of tar-contaminated soils. Current research efforts are concentrated in advanced measurement methods such as modeling of soil structure interaction and flow using transparent soil surrogates and advanced sensors made of fiber optic materials and environmental systems.

**KEY CURRENT
DEPARTMENTAL
STRENGTHS AND
OPPORTUNITIES**

STRENGTHS:

- Student enrollment size: the CE Department is one of the largest in the country in terms of total student enrollment.
- CE Academic Research Areas: Measurements—Smart Structures, Instrumentation, Transparent Soils and Fiber Optic Sensing.
- Urban Infrastructure: Transportation Planning and Engineering, Building Information Modeling (BIM), Urban Geotechnology, Environmental Systems and Polymeric Piling.

OPPORTUNITIES:

- Attract new tenured faculty
- Attain national recognition in key areas of research/publishing
- Increase volume of research funding and its distribution within the department
- Increase enrollment of top undergraduate and graduate students
- Build urban engineering and technology with NYU in the new Center for Urban Science and Progress
- Build urban engineering and technology in Abu Dhabi and Shanghai

**KEY
OPPORTUNITIES
FOR GROWTH
AND
DEVELOPMENT**

As a result of the merger of NYU and Polytechnic University, NYU-Poly's Department of Civil Engineering is considered an area of strategic emphasis by the executive leadership of the combined institutions. As described earlier, there is a great opportunity for the new Civil Engineering Department Head to be a key new team member leading the way to fulfilling the fundamental vision of the combined institutions. As the Department of Civil Engineering is transformed under the direction of the new Department Head, there will be an excellent opportunity for departmental faculty to support the development of Institute-wide urban systems initiatives designed to create new knowledge and attract significant research funding as well as top faculty and students.

Civil Engineering Lab, NYU-Poly



**CIVIL
ENGINEERING
DEPARTMENT
HEAD**

The new Civil Engineering Department Head will report directly to the Provost of NYU-Poly. The Department Head will be responsible for a diverse faculty and student body and be a key driver and leader of transformational change for the department and more broadly, across the entire Institute.

CANDIDATE EXPERIENCE:

- 10+ years progressive accomplishments in civil engineering academic leadership and departmental change/transformation. Commercial civil engineering practice/consulting experience in advancing urban technology and engineering is a plus.
- Demonstrated successful leadership in academia or industry judged through successful transformations in other organizations evidenced by growth in student enrollment, increased research expenditures, awards of patents or creation of new companies or similar accomplishments in an industrial setting.
- Thought-leader and excellent professional reputation judged through publications, membership in the National Academy of Engineering, leadership in civil engineering societies or editorship of leading journal(s).
- High-quality research and publications in one or more civil engineering core areas including urban engineering, as well as emerging areas, judged through high citations, research prizes, invited talks and keynote lectures.
- Strong record of external research funding. Preference will be given to candidates who bring research funding to NYU-Poly.
- Genuine commitment to improving teaching excellence as evidenced by mentoring, professional service and student and faculty comments.
- Solid record of multidisciplinary collaborations with academic departments or sectors that impact the CE core areas related to intelligent urban infrastructure and the future of cities, including energy, information technology, robotics, chemistry, finance and policy.
- Reputation of leadership, collegiality, hard work and integrity.



Washington Square, Greenwich Village, NYC

**KEY
PERFORMANCE
INDICATORS (KPIs)
AND MILESTONES**

The KPIs are indicative of what we expect the hired candidate to accomplish in the job “by when;” the final version of the KPIs will, of course, be discussed and adjusted accordingly with the hired candidate.

YEAR 1:

- Review of current departmental activities, strengths and weaknesses. New plan for transformation of the CE department in line with the strategic objectives of the Institute completed. Approval and funding of the departmental transformation plan by the Provost and other key constituents accomplished. Take a key role in the future of cities initiatives of NYU and NYU-Poly.
- Key message/deliverables of the transformation plan of the CE department well-understood and accepted by key constituencies: students, faculty, alumni, university administration and outside supporters. Actively align CE departmental growth objectives with key global activities of the University including: NYU Washington Square, Abu Dhabi and Shanghai. Mutual confidence and respect established; stage is set for smooth implementation of transformational initiatives.

YEAR 2:

- New faculty members are being recruited and hired.
- Current academic programs are being strengthened; direct links with Electrical and Computer Engineering and Computer Science and Engineering and Materials Sciences have been created as well as other **i²e** strategic initiatives.
- Student enrollment/quality is being improved.
- Research/grant funding is being steadily increased.
- Collaboration with and support of broader Institute-wide strategic initiatives such as urban systems is vigorously underway.

YEARS 3-5:

- Tangible improvements in departmental faculty, research, quality of students and impact across the University are being increasingly noted.
- USNWR ranking of the Department of Civil Engineering is steadily improving.
- Positive impact on the strategic development of the Institute is well-acknowledged through such metrics as CE departmental funding, research initiatives, student enrollment, faculty number/quality and alumni/corporate/governmental support and engagement.

**ATTRIBUTES/
SKILL SETS**

- PhD degree in Civil Engineering
- Proven administrative and leadership abilities
- Recognized as a technical leader in research specialty

**KEY PERSONAL
QUALITIES/
WORK STYLE**

- A natural leader who knows how to bring teams of people together and support them in their efforts to accomplish important tasks on time and within budget.
- Proven ability to work well with executive-level decision makers, colleagues, students and alumni in a highly collegial and effective manner.
- Reputation for taking action and executing agreed-upon initiatives.
- Ability to work well with senior administrators in support of the strategic initiatives of the University and to support the goals and objectives of key faculty, outside advisors, including key alumni, trustees and students who come from diverse cultures and environments.
- Will possess a reputation for being a change agent who can work through ambiguity, balance opposing views and then move programs and projects forward in a highly effective manner.
- Share real affinity with the vision and mission of NYU-Poly and NYU and contribute significantly to realizing the vision through the transformation of the CE Department, fostering the growth and development of urban systems initiatives and other key activities working in conjunction with colleagues, key constituents and the executive leadership team of NYU-Poly and NYU.

**INTERVIEW AND
CANDIDATE
QUALIFICATION
PROCESS**

FIRST, SECOND AND FINAL INTERVIEWS:

A combination of phone and in-person interviews will take place as qualified candidates move through the interview process. Qualified candidates will meet with the search committee and then with senior-level administrators during the course of the process; finalists are expected to make a presentation of their research/professional interests.



View of Main Campus, NYU-Poly: MetroTech Center

COMPENSATION

The compensation and benefits package for this position is highly competitive. Further details on compensation will be provided to qualified candidates.

INTERESTED CANDIDATES:

Please respond by sending CV and cover letter expressing interest to: CEHEAD@Kulpercompany.com

THIS IS AN EQUAL EMPLOYMENT OPPORTUNITY OFFERING
which is subject to change at the sole discretion of the client.

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