Position Specification

University of Pittsburgh
US Steel Dean, Swanson School of Engineering

September 2017
The University of Pittsburgh invites applications and nominations for the position of U.S. Steel Dean of the Swanson School of Engineering, who will advance the mission and reputation of the School in the United States and around the world. The next Dean will accelerate the Swanson School’s prominence in engineering excellence by building on key collaborations with the UPMC Health System, partnering with national and global academic institutions, supporting outstanding faculty, staff, and students, and embracing the dynamic growth of industry in Pittsburgh and the region.

The Swanson School of Engineering has 178 full-time faculty, 118 staff, nearly 3,000 undergraduate students, and over 900 graduate students. The School is comprised of six departments: Bioengineering, Chemical and Petroleum Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Industrial Engineering, and Mechanical Engineering and Materials Science. The Departments of Bioengineering and Industrial Engineering are ranked in the top 25 by U.S. News and World Report. The Swanson School is home to innovative programs for faculty, students, and the community, which support its mission to produce highly qualified engineers and useful, creative research and technology through academic excellence.

The University of Pittsburgh (“Pitt”) is ranked among the top 25 U.S. public universities according to U.S. News and World Report, and 39th in Thomson Reuters' list of the world's 100 most innovative universities. Pitt is a member of the prestigious Association of American Universities, and is one of the top ten most active universities in terms of federally funded research. The University is composed of 16 undergraduate and graduate schools and colleges, including nationally recognized schools of health sciences, engineering, law, and business, as well as four regional campuses.

U.S. Steel Dean, Swanson School of Engineering

The U.S. Steel Dean of the Swanson School of Engineering reports to the Provost and Senior Vice Chancellor. The Dean will provide visionary leadership to continue to build the School's national and international reputation while fostering and diverse and inclusive environment. The Dean will play a key leadership role in advancing the mission, operations, and service of the School, with responsibility for personnel, budget, general administration and management, and academic and development functions.

Key Priorities (not in rank order):

- Provide and execute strategic vision and leadership for building the School and advancing the School's and the University's national and international reputation;
- Engage University leadership and the School on evaluating expansion, and manage future growth effectively;
- Enhance the financial resources of the School, especially through fundraising from public and private sources;
- Recruit and retain outstanding faculty and staff, and enhance their career development;
- Strengthen research infrastructure to further enable and promote productivity;
- Support student academic, research, and personal development opportunities that enhance the undergraduate, graduate, and professional student experience;
- Build upon strong collaborations across campus, with industry partners, and within the city of Pittsburgh;
Position Specification

Commit to diversity and inclusion and lead a collaborative culture that values the strength of differing views and experiences; and
Advance the School’s standing among national and international peers, research organizations, and accrediting bodies.

Specific Responsibilities:

Visionary Leadership: Establish a bold and forward-looking vision to ensure that the Swanson School of Engineering takes a creative approach to developing new, innovative ideas that will stretch the School and University, with a focus on impact, excellence, and entrepreneurship. Provide leadership in establishing the School’s strategic objectives, align with the University’s strategic plan, and develop and manage all resources essential to the achievement of these objectives. Work with faculty, academic leadership, and University leadership in pursuit of broader institutional goals. Effectively balance the desire for change with an understanding of the organization’s capacity to change, to create ambitious goals and implementation plans that are achievable and successful.

Academic Oversight: Recruit, retain, and promote top faculty who will attain high standards of excellence and enhance the diversity of the School and University. Evaluate faculty for appointment, tenure, and promotion. Support, enhance, and promote faculty research and productivity. Strengthen excellence in programs, curriculum, and classroom teaching.

Collaborations and Fundraising: Lead the development and implementation of strategies to build strong relationships with a wide range of stakeholders, partners, and collaborators within and outside of the University. Articulate, communicate, and champion the School’s vision. Represent and promote the School through active participation at external events. Cultivate and solicit individual donors, foundations, and corporations. Lead the School’s fund-raising and development efforts.

Financial Management: Ensure a strong financial future for the School. Manage the financial resources of the School through an effective and transparent annual operating budget and long-term financial plan. Oversee School-wide resource acquisition and utilization.

Management and Administration: Oversee the organizational structure, policies, and procedures of the School with an emphasis on operational efficiency and promoting well-being within the community. Attract and recruit top faculty and staff and provide opportunities for professional development. Foster a diverse and inclusive educational and work environment. Promote a collaborative, collegial culture throughout the School.

Qualifications:

Leadership and Management Experience: An established record of effective, inclusive, and collaborative leadership. The capacity to formulate and articulate a shared vision, to persuade a wide range of audiences of its value, and to engage others in its implementation. Ability to recruit outstanding new faculty as well as retain and promote the School’s strongest faculty and staff. Capacity to motivate and inspire others to strive continuously for excellence. Self-reflective and aware of his/her own limitations; leads by example and drives the organization’s performance with an attitude of continuous improvement by being open to feedback and self-improvement. Strong interdisciplinary ethic. A builder...
with an entrepreneurial spirit and experience creating, growing, and expanding an organization or entity.

**Academic Credentials:** PhD degree required. Distinguished record of achievement and professional credentials consistent with appointment at the rank of full professor. Demonstrated success in promoting, fostering, and conducting funded research.

**Financial Management and Administrative Experience:** A well-developed record of operational leadership demonstrating excellence, growth, and financial effectiveness. Demonstrated experience in fiscal management. Proven success in managing a leadership team within a complex organization. Ability to manage resources strategically.

**Fundraising Ability:** Demonstrated success in strengthening philanthropic support from individuals, foundations, and corporations, and/or a strong desire to engage in such fundraising.

**Focus on Students:** Genuine understanding of the teaching mission and the importance of providing students with the highest quality educational experience as well as opportunities for experiential learning. Demonstrated commitment to student success. Must understand and value the importance of a diverse student body. Provide visible leadership to the students.

**Commitment to Diversity and Inclusion:** Demonstrated commitment to diversity and inclusion and promoting a collaborative culture that values the strength of differing views and experiences. Ability to foster a collegial, collaborative, inclusive, and respectful work and educational environment.

**Personal Qualities:** Unquestioned, unassailable personal and academic integrity. A commitment to academic excellence and the mission of a global public research university. Strong interpersonal, oral, and written communication skills. Innovative and creative problem-solver, with a willingness to take appropriate risks and make timely and difficult decisions. Adaptable, confident, and driven. A demonstrated openness to new ideas and an ability to execute. An exceptional listener who is visible and accessible to the Swanson School community.

**Swanson School of Engineering**
The Swanson School of Engineering’s current position as a world-class engineering school is built on a long and distinguished history of engineering excellence. The earliest engineering courses at Pitt were established in response to the growth of Western Pennsylvania during the early industrial revolution, with the first degrees of “Engineer” awarded in 1846, thereby establishing Pitt as one of the nation’s oldest engineering programs. In 1910, the School created the world’s first Department of Petroleum Engineering and one of the nation’s earliest undergraduate Cooperative Education Programs. The School’s continuing tradition of innovative programming resulted in the establishment of one of the nation’s first Industrial Engineering Departments in 1921. The 1990s saw the emergence of new centers of excellence, which promoted cross-disciplinary infrastructure and research collaborations between departments, as well as the launch of the Bioengineering Department and the Center for Biotechnology and Bioengineering at the Pittsburgh Technology Center. In 2007, John A. Swanson made a transformative gift of over $42 million to enhance the School. His contribution led to an expansion and renovation of Benedum Hall, the home of the Swanson School, as well as undergraduate scholarships.
and graduate fellowships, endowed faculty positions, and support for the Swanson Center for Micro and Nano Systems, Swanson Center for Product Innovation, and the RFID Center for Excellence. The Swanson School continues to be in an exciting period of rapid growth in enrollment, student quality, research productivity, research expenditures, and rankings.

Students in the Swanson School excel both inside and outside of the classroom. Since FY2010, undergraduate enrollment has increased 43% to almost 3,000 students, and in the fall of 2016, the average SAT score of the entering class was 1,407. In 2016, well over 1,000 undergraduate students participated in a co-op, and close to half of the graduating class had participated in an international experience during their time at the Swanson School. Student retention from freshman to sophomore year is 93.6%, and the six-year graduation rate is 84.4%. Swanson School students have received numerous national awards, including Fulbright, Rhodes, Truman, Goldwater, Churchill, and Whitaker Scholarships.

In 2013, the Swanson School led a University effort to create a joint institute with Sichuan University, one of China’s premier engineering schools. With emphases on advanced sustainable manufacturing and educational innovation, the institute has initially offered three undergraduate degree programs: industrial engineering, mechanical engineering, and materials science and engineering. The program combines research with education, professionalism with academics, and Eastern with Western approaches. The institute welcomed its first class of 100 undergraduate engineering students in fall 2015, and enrollment is projected to grow to 1,600 within a few years.

Each department offers multiple graduate degree programs. In addition to participating in co-op programs and international opportunities, graduate students can pursue joint degrees with other schools, including the School of Medicine, the School of Health and Rehabilitation Sciences, and the Katz Graduate School of Business. The Swanson School also offers online graduate certificates in Electric Power, Nuclear Engineering, and Safety Engineering, as well as Master of Science degrees in Nuclear Engineering, and Civil Engineering with a construction management focus. In the last seven years, graduate enrollment has increased almost 39% to over 900 students.

Diversity is ingrained in the very structure of the Swanson School through the Engineering Office of Diversity, established nearly two decades ago. The Associate Dean for Diversity leads efforts to support graduate and undergraduate students within the School, as well as high school students in the greater Pittsburgh area. In 2015, Pitt was awarded nearly $1.6 million from the NSF to improve the success of underrepresented doctoral students through enhanced faculty-student interaction. In 2014, the NSF also supported a five-year grant for the Global Engineering Preparedness Scholarship Program, which supports the recruitment, retention, and graduation of low-income students. Pitt EXCEL is a comprehensive diversity program that contributes to the success of over 250 undergraduate engineering students each year. The award-winning Pitt program, INVESTING NOW, annually provides training and professional development to approximately 175 underrepresented high school students to promote their matriculation and success in STEM fields at the college level.

The Swanson School of Engineering has 178 full-time faculty (130 of whom are tenured or tenure-track), 85 part-time faculty, and 118 staff. In addition, over 100 Pitt faculty hold secondary appointments in the School, the majority of whom are School of Medicine faculty affiliated with the Department of
Bioengineering. The impactful achievements of Pitt’s engineering faculty have led to prestigious awards such as: the NSF Career Award (four in FY2016-17 alone), the Polymer Physics Prize from the American Physical Society, the Borelli Award from the American Society of Biomechanics, the SF Boys-Rahman Medal from the Royal Society of Chemistry, the Van C. Mow Medal from the American Society of Mechanical Engineers, an Olympic Gold Medal for Sports Science, the Y.C. Fung Early Career Award, a NASA Public Service Award, the Albert G. Holzman Distinguished Educator Award from the Institute of Industrial Engineers, a Presidential Early Career Award for Scientists and Engineers from the White House Office of Science and Technology, a DARPA Young Faculty Award, an American Institute of Chemical Engineers’ Young Investigator Award for Modeling and Simulation, and a Journal of Materials Chemistry A Emerging Investigators award.

Faculty in the Swanson School thrive in an environment of support and mentorship that crosses departmental boundaries and benefits from the unified efforts of the Center for Faculty Excellence (CFE), the Office of the Associate Dean for Research, and the Engineering Education Research Center (EERC). Through a CFE program, tenure-track faculty members meet bi-annually with a personalized mentoring committee consisting of four to five tenured faculty members. Twenty seven individuals are currently enrolled in the program and are supported by 76 faculty mentors. Innovation in education within the Swanson School is led by the EERC, which carries out research in engineering education and provides assessment and evaluation services for proposals and grants, one on one consulting with faculty, and training in new teaching practices. The EERC also directs Pitt’s involvement in the Center for Integrating Research, Teaching, and Learning, an NSF center that engages the cooperative efforts of 43 research universities to train the next generation of STEM faculty to advance effective teaching practices for diverse learners.

The Swanson School excels in basic and applied research and is on the forefront of technology in several important areas, including energy systems, sustainability, biomedical engineering, nano-engineering, computational modeling, advanced manufacturing, and engineering materials development. Research expenditures in FY2016-17 were almost $30.9 million, and over $80 million when including interdisciplinary research. Over the same period, NSF research expenditures were $9.1 million and NIH expenditures were $7.8 million.

The Swanson School of Engineering hosts three prestigious NSF Centers. The NSF Center for Space, High-performance, and Resilient Computing focuses on research in mission-critical computing, including space computing, high-performance computing and data analytics, and resilient computing. The recently awarded NSF Center for Chemo-Mechanical Assembly will use catalytic reactions as “chemical pumps” via gradients in chemical concentrations and fluid densities that spontaneously give rise to net flows. Pitt is also a partner in the NSF Engineering Research Center for Revolutionizing Metallic Biomaterials whose objective is to transform current medical and surgical treatments by creating the technology for "smart" implants to improve treatment of orthopedic, craniofacial, and cardiovascular conditions.

In 2012, the Swanson School received a $22 million grant from the Richard King Mellon Foundation to accelerate the research and education efforts of the Center for Energy, create new faculty positions and graduate fellowships, and establish a fund to spur innovative research. In 2016, Pitt and the Swanson School announced an expansion of engineering, energy research, and entrepreneurship at the Energy Innovation Center (EIC). The 18,600 square-foot laboratory and incubator supports Pitt’s initiatives to
provide more flexible, large-scale space for energy research, and to encourage direct partnerships with industry. The EIC is designed to engage corporate and community leaders, align workforce development and education, develop and demonstrate technology, and incubate businesses to support emerging clean and sustainable energy markets.

A pioneer in the field of sustainability, the School established its cutting-edge green construction program in 1999. The School’s research and education programs in sustainability are spearheaded by the Mascaro Center for Sustainable Innovation, established in 2003 to promote the incorporation of sustainable engineering concepts and practices. The Mascaro Center has a holistic approach to sustainability, and its mission is to create and nurture innovations that benefit the environment, positively impact the University and community-at-large, and improve quality of life. Through the integration of curriculum, groundbreaking research, and social engagement, the Center engages students, faculty, and staff, as well as everyday citizens, to explore and experience sustainability in practice and performance.

Advanced manufacturing is a central, and growing, area of focus for the Swanson School, the University, and the region. Since 2013, substantial investment has been made to acquire state-of-the-art advanced manufacturing and materials characterization facilities. Through a partnership with ANSYS, the Swanson School recently opened the ANSYS Additive Manufacturing Research Laboratory – a 1,200 square-foot lab equipped with some of the most advanced additive manufacturing systems for printing metals, polymers, and other materials. In 2017, the School opened a new, 9,000 square-foot facility for the Manufacturing Assistance Center, which assists manufacturers and individuals in gaining a competitive advantage in the global economy via the use of advanced manufacturing technology and training.

The Gertrude E. and John M. Petersen Institute of NanoScience and Engineering, within the Swanson School, provides world-class resources for both nanofabrication and nanoscale characterization. This includes the Nanoscale Fabrication and Characterization Facility, a 4,000 square-foot cleanroom with tools for fabricating and characterizing materials and devices on the nanoscale. Faculty and outside collaborators use the space for projects ranging from basic materials science to the development of energy storage and biosensors.

Researchers in all six departments are working on studies and solutions for a broad spectrum of grand-challenge, big-data applications, in terms of novel algorithms, architectures, systems, tools, and insight. This is also an area of emphasis for Pitt. The University established the School of Computing and Information in 2017. In addition, computational science, high-performance computing, and data analytics at Pitt leverage the Center for Research Computing and the world-class machines in the Pittsburgh Supercomputing Center.

The Swanson School has outstanding programs in biomedical research, innovation, and translation. The University of Pittsburgh, a top-five institution in terms of NIH funding, provides a rich environment for interdisciplinary biomedical research. Faculty from several Swanson School departments collaborate with individuals from the Schools of Health Sciences, the UMPC Health System, and various biomedical research centers and institutes. For example, the McGowan Institute for Regenerative Medicine, established by Pitt’s School of Medicine and the UPMC Health System, focuses on the development of technology to address tissue and organ insufficiency. In addition, the Clinical and Translational Science
Institute, the Coulter Translational Partnership II Program, and the Center for Commercial Applications of Healthcare Data, provide biomedical innovation and translation opportunities.

Regional and alumni support for the Swanson School is strong. In 2012, the School exceeded its $180 million campaign goal and announced that over $200 million had been secured for the full transformation of the School, both physically and academically, to establish it as one of the leading engineering programs in the world. That goal was part of the University of Pittsburgh's comprehensive $2 billion campaign, which also was reached in 2012.

For more information, please visit http://www.engineering.pitt.edu/.

The University of Pittsburgh
Since its founding in 1787, the University of Pittsburgh has established itself as one of the finest public research universities in the nation. With an enrollment of more than 34,000 students, the University is one of the largest and oldest institutions of higher education in Pennsylvania and is a member of the Association of American Universities. The University is internationally respected as a center for learning and research that supports the needs and interests of its students and more than 13,000 faculty members, research associates, and staff members. The University is composed of 16 undergraduate and graduate schools and colleges, including nationally recognized schools of health sciences, engineering, law, and business, as well as four regional campuses.

The 132-acre central campus is located in the city of Pittsburgh, a few miles from the city's downtown business district. The University's four regional campuses are located in Western Pennsylvania in Bradford, Greensburg, Johnstown, and Titusville. Pitt has an endowment of more than $3.5 billion and has more than 300,000 living alumni worldwide.

Under the leadership of Chancellor Patrick Gallagher, the University of Pittsburgh recently launched The Plan for Pitt, the University's strategic plan, which focuses on creating internal and external collaborations and partnerships of impact; harnessing information in pursuit of grand challenges; and shaping a more entrepreneurial, innovative, and inclusive culture. The Plan builds on Pitt's rich history of community support and global impact, and its exceptional research strength and academic programs that prepare students for productive and meaningful lives. The Plan also builds on more recent strategic initiatives, such as the creation of the Innovation Institute to advance Pitt's successes in entrepreneurship, commercialization, and economic development. The Institute's establishment was part of a broader effort to cultivate an environment that empowers faculty, students, and staff to reach greater heights in their innovative research and entrepreneurial activities.

The University of Pittsburgh has served as an integral partner and key player in driving the growth of the education and health services super-sector in the Pittsburgh metropolitan region. Pitt and its affiliate, the UPMC Health System, have been major contributors to economic vibrancy in that sector; the “eds and meds” are now responsible for more than one out of every five local jobs. Pitt is the fifth largest employer in the city of Pittsburgh, and the University's research has been a key source of economic growth. Since 1995, Pitt has attracted nearly $9.5 billion of sponsored research support into the region.
Pitt ranks fifth nationally in NIH research funding, as well as 10th overall and sixth among public institutions in the NSF’s most recent ranking of federally-funded research. In 2016, Pitt was among the top five percent of universities globally, according to U.S. News & World Report, and was the #1 public university in the Northeast, and 13th among public universities nationally, in student success and learning in the inaugural Wall Street Journal/Times Higher Education rankings. The University is also one of the nation’s best-value public universities and the highest ranked best-value public institution in Pennsylvania for the 12th consecutive year on Kiplinger’s Best Value Colleges list.

The University of Pittsburgh’s research has provided the foundation for future-oriented technology-based economic development initiatives. The region’s dynamic growth is due in large part to the relationships forged by Pitt, UPMC, private industry, other academic institutions, and the community. While other regions struggled through the great recession, the Pittsburgh area was able to continue on its path of growth and diversity.

From research achievements to the quality of its academic programs, the University of Pittsburgh ranks among the best in higher education. Faculty members have expanded knowledge in the humanities and sciences, earning such prestigious honors as the National Medal of Science, the John D. and Catherine T. MacArthur Foundation’s “genius” grant, the Lasker-DeBakey Clinical Medical Research Award, and election to the National Academy of Sciences and the National Academy of Medicine. Pitt students have earned Rhodes, Goldwater, Marshall, and Truman Scholarships, among other highly competitive national and international awards. Alumni have pioneered MRI and TV, won Nobel and Pulitzer prizes, led corporations and universities, served in government and the military, and conquered Hollywood and The New York Times best sellers list.

University Leadership
Chancellor Patrick D. Gallagher

Patrick Gallagher has served as the University of Pittsburgh’s eighteenth chancellor since August 2014. In this position, he works to advance the University’s legacy of academic excellence, collaboration, and research innovation.

Prior to his installation at Pitt, Gallagher spent more than two decades in public service. In 2009, President Barack Obama appointed him to direct the National Institute for Standards and Technology. While in this role, Gallagher also acted as the deputy secretary of commerce until leaving for Pitt in the summer of 2014.

In addition to his duties as chancellor, Gallagher is one of 12 inaugural members appointed by the president to serve on the Commission on Enhancing National Cybersecurity. He is active on a number of community boards, including United Way of Allegheny County and Internet2, as well as the Association of Public and Land-grant Universities.

Gallagher holds a PhD in physics from the University of Pittsburgh and a bachelor’s degree in physics and philosophy from Benedictine College.
Provost and Senior Vice Chancellor Patricia E. Beeson

Patricia Beeson has served the University as provost and senior vice chancellor since 2010. She is the chief academic officer of the University, exercising general oversight over academic affairs on all five Pitt campuses. She works closely with Chancellor Patrick Gallagher and the University’s leadership team on long-range strategic planning efforts that emphasize diversity and innovation. This work has already led to the establishment of the Innovation Institute.

Before assuming her current position, Beeson served the University as associate dean for undergraduate studies in the Dietrich School of Arts and Sciences, vice provost for graduate studies, and vice provost for graduate and undergraduate studies.

Beeson is chair of the University Planning and Budgeting Committee, the Council of Deans, and the Information Technology Steering Committee. She is also co-chair of the University’s Facilities Planning Committee, and the principal liaison to the Academic Affairs and Libraries Committee of the Board of Trustees.

She serves on several national and local committees and boards. She is on the Executive Committee of the Council of Academic Affairs of the Association of Public and Land-grant Universities (APLU), the APLU task force on Managing University Intellectual Property, and the Accreditation Task Force. She is a member of the International Women’s Forum.

Beeson earned a BS in economics from Oregon State University and a PhD in economics at the University of Oregon. She came to Pitt as a member of the economics faculty in 1983.

The Community

It is an exciting time to live in Pittsburgh. The city is in the midst of a remarkable transformation from an industrial capital to a center of education, medical research, and new technology. The city hosts a high concentration of diverse and influential nonprofits and, as an international center of emerging information technology, is home to many start-up companies, one of Google’s national offices, Facebook’s Oculus virtual reality research center, and Uber’s autonomous vehicles development effort. Pittsburgh also is emerging as a leader in advanced manufacturing technologies and nanotechnology. While still a work in progress, the city’s reinvention of itself has garnered widespread attention and has become a model for other cities seeking to replicate its success. As Rhode Island’s governor put it while on a fact-finding mission to study Pittsburgh’s economic renaissance, “Pittsburgh is an impressive model of how an old-economy steel town transformed itself into a cutting-edge medical and educational center of excellence.”

Pittsburgh rose to the top of Places Rated Almanac’s most livable city list in 2007. In 2010, Forbes crowned Pittsburgh the nation’s “Most Livable City.” Forbes also named Pittsburgh “Best Housing Market” in 2010 and among the “10 Best Cities for New College Grads in 2016.” Pittsburgh ranked No. 1 on Zagat’s list of “The Top 17 Food Cities of 2015.” Pittsburgh has all of the advantages of a large city in combination with the friendliness of the Midwest and the cultural sophistication of the East Coast.

The city has a wonderful array of distinctive neighborhoods with an urban flavor, city neighborhoods that are equivalent to suburbs in other communities, and nearby beautiful suburban areas with large
lots and rolling lawns. There is an abundance of residential choices ranging from unique lofts to living in the “country” while being only 20 minutes from the city. Housing is affordable and, as noted by *Forbes*, Pittsburgh presents the second most stable housing market in the country. The city and its surrounding suburbs take pride in high-quality public, private, and parochial schools. Statistically, Pittsburgh is a safe city compared to other urban communities of its size. No longer a smoky steel town, Pittsburgh is clean and green and a model for its efforts to become pollution free.

**Nomination and Application Process**

Inquiries, nominations, and applications are invited. Interested candidates should submit confidentially, in electronic form (Microsoft Word or Adobe PDF files preferred), a curriculum vitae and letter of interest to Pitt.Swanson@russellreynolds.com.

All materials and inquiries will be held in strict confidence until the final stages of the search, at which time the express permission of the finalists will be obtained before making their candidacies public. References will not be contacted without the prior knowledge and approval of the candidate.

*The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer and values equality of opportunity, human dignity and diversity. EEO/AA/M/F/Vets/Disabled.*