THE SEARCH

The University of Minnesota, the public land-grant research University of the State of Minnesota, seeks a visionary scholar, leader, and educator to serve as the Dean of the College of Science and Engineering (CSE). The Dean is the chief executive and academic officer of the college, and will provide strategic leadership and vision in collaboration with faculty, staff, students, and other key internal and external stakeholders.

The Dean will oversee 12 academic departments and 430 tenured and tenure-track faculty that together account for nearly $140M in annual sponsored research expenditures. CSE has an operating budget of $250M, and the college educates nearly 8,000 undergraduate and graduate students. It contains several large federally sponsored centers, such as the NOvA detector program, a collaboration that includes 210 scientists and engineers from 39 institutions in the United States, Brazil, the Czech Republic, Greece, India, Russia and the United Kingdom. The next Dean will empower the faculty to achieve prominence in scholarly research in the sciences and engineering, and will sustain a tradition of innovative teaching in the college. As part of this effort, the ideal candidate for this position will be an experienced and decisive leader who will champion the transformative power of the sciences and engineering in advancing scientific discoveries and technology for the benefit of the citizens of Minnesota, the nation, and the world. The Dean will be an effective steward of resources and a collaborator across the University of Minnesota. This individual will be a person of integrity who is committed to the highest standards of excellence in the sciences and engineering. The Dean reports directly to the Senior Vice President for Academic Affairs and Provost, Dr. Karen Hanson.

The Provost has formed a search committee chaired by Brian Buhr, Dean of the College of Food, Agricultural, and Natural Resource Sciences, and has retained Isaacson, Miller, a national executive search firm, to assist in the recruiting of the new Dean. All confidential inquiries, applications, and nominations should be directed in confidence as noted at the end of this document.

THE COLLEGE OF SCIENCE AND ENGINEERING

Created in 1935 at the confluence of programs in engineering, mining, architecture, and chemistry, the College of Science and Engineering (then known as the Institute of Technology) quickly established scholarly distinction. In 2010, the Board of Regents officially approved the name change of the Institute to the formal College of Science and Engineering (CSE). Today, CSE is uniquely positioned to provide the vision, leadership, and intellectual capital that underwrite scientific and technological progress in the 21st Century.
The college’s 12 academic departments consistently rank among the very best in the nation, with many placing in the top 20, and a top five chemical engineering program. Research and education programs at CSE span the sciences and engineering with an emphasis on ground-breaking scientific discoveries, as well as finding real world applications of novel materials, nanotechnology, and information technology in diverse areas such as biomedicine, renewable and sustainable energy and other resources, and energy-efficient computer architectures. Few universities match the College of Science and Engineering’s research capabilities, and fewer still have its remarkable potential.

CSE offers 19 undergraduate majors, 24 master’s degree programs, and 17 doctoral degree programs (which includes one program shared with the Medical School). The college is one of the largest at the University of Minnesota, with 5,331 undergraduates, 99.8 percent of whom consistently rank among the top 25 percent of their high school graduating classes. Of the 566 National Merit Scholars admitted to the University of Minnesota as freshman over the last four years, 315 are engaged in study at the College of Science and Engineering. CSE’s graduate students number approximately 2,700, and the college granted 235 doctoral degrees in FY2014. These graduate students go on to success in academia and industry after productive research experiences with CSE’s 430 outstanding tenure-track faculty, 16 of whom are members of the National Academies of Science and Engineering. CSE boasts nearly 600,000 square feet of modern research space, state-of-the-art equipment, and multidisciplinary, pioneering research centers such as the Center for Spintronic Materials, Interfaces, and Novel Architectures (C-SPIN); a materials characterization facility with x-ray diffraction, spectroscopy, microscopy, and thin-film analysis capabilities; the Inorganometallic Catalyst Design Center (ICDC), a Department of Energy FRC exploring energy-science-relevant catalytic materials; the Minnesota Nano Center, a nanofabrication facility with Class 100 clean rooms; the NSF Center for Sustainable Polymers; and an NSF Materials Research Science and Engineering Center (MRSEC) exploring future technologies in biomedicine, plastic electronics, and information technology, with nearly 35 dedicated industry partners and collaborators.

Today, the College of Science and Engineering is stronger than ever. From 2009 to 2014, new enrollments climbed each year to 1,500 freshman and transfer students; at the same time, the college hired 40 additional faculty. The college has undertaken an aggressive and very successful capital expansion plan with major renovations of student and research space; many have been completed recently, while renovations to the Tate Laboratory of Physics and the Mechanical Engineering building are currently underway. Overall research expenditures have increased by 10 percent since FY2012 despite tightening federal and state funding models. CSE faculty have generated nearly 130 patents in the last five years, aided in part by the strong ties CSE has enjoyed with the private sector in the Minneapolis-St. Paul area, home to 18 Fortune 500 headquarters including Target, 3M, Medtronic, and Cargill, which provide internship opportunities for its gifted undergraduates and design projects in close collaboration with students and faculty. Its 65,000 living alumni contribute to the college through donations and gifts to support critical scholarly and pedagogical functions across the college, building upon the excellence that enabled their own successes.

**Education**

The College of Science and Engineering is one of seven freshman-admitting colleges at the University of Minnesota, along with the College of Design, the College of Education and Human Development, the College of Food, Agricultural, and Natural Resource Sciences, the College of Liberal Arts, the Carlson School of Management, and the College of Biological Sciences. CSE undergraduates excel in an environment that enables them to reach their potential through extensive, hands-on undergraduate research opportunities. The University’s Research Opportunities Program (UROP) allocates nearly $240,000 dollars per year toward undergraduate research on the Twin Cities campus for CSE undergraduates. In addition, CSE students have outstanding opportunities to study abroad—in FY2014, 387 undergraduates took advantage of these programs, attending CSE Global Seminars in Europe, Africa, Asia, and the Greater Middle East. Diversity is a critical component to the mission of the University of Minnesota, and CSE’s living/learning communities help advance this important mission through a Women in Science and Engineering (WISE) House, STEM House for underrepresented
students, and the Taylor House for Science and Engineering; in 2015, CSE admitted 352 female freshman, the all-time highest percentage of incoming female freshmen in the college’s history.

Students drive their own learning and discovery in specially designed active learning classrooms and through extensive online learning modules at the leading edge of pedagogical innovation. The Center for Academic Planning and Exploration (CAPE) provides “high-touch” academic support for students transferring into CSE programs and those in the most competitive majors. The UNITE Distributed Learning program began television broadcasts of courses to area companies in 1971, making it one of the first programs of its kind in the nation.

Approximately 2,700 graduate students study and conduct world-class research in 24 graduate programs at CSE, from aerospace engineering to chemical physics, to the newly-launched master’s in data science, and many more. CSE awards academic year and summer fellowships to qualified students and post-docs who learn and work alongside faculty, including 16 members of the National Academies of Science and Engineering, 8 AAAS Fellows, and 7 Regent’s professors.

Scholarship and Research

CSE’s total externally sponsored research expenditures for FY2014 were $138.2M, with approximately $100M derived from the National Science Foundation, the Department of Energy, and other federal funding agencies. In recent years, fueled in no small part by the tremendous collaborative potential of these large centers, CSE’s share of industry funding has climbed significantly, increasing by more than 40 percent between FY2012 and FY2014.

A great strength of the College of Science and Engineering is its position at the heart of one of the nation’s largest comprehensive public universities, with outstanding strengths across the breadth of the sciences, engineering, medicine, and liberal arts. Minnesota has been a leader in catalyzing collaborations between the academy and industry since at least the 1950’s, when a graduate student in electrical engineering, Earl Bakken, founded and built Medtronic with the help of a renowned heart surgeon at the University of Minnesota Medical School (UMMS). Today, CSE continues its outstanding collaborations with UMMS through the Institute for Engineering in Medicine (IEM), an interdisciplinary research organization that strengthens ties in biomedicine and engineering and fosters collaborations with the medical device industry, and the Medical Devices Center (MDC), which combines research, education and training, and outreach to accelerate interdisciplinary medical device research. The BioTechnology Institute (B'TI), a collaboratively funded unit between the College of Biological Sciences and the College of Science and Engineering, provides advanced research support, training, and university-industry interface. The Characterization Facility is a multi-user, shared instrumentation facility for materials research spanning from nanotechnology to biology and medicine. The St. Anthony Falls Laboratory (SAFL) stands as a premier fluid mechanics laboratory that uses the Mississippi River to conduct interdisciplinary fluid mechanics research to address environmental, renewable energy, and health problems. And, the Multi-Axial Subassemblage Testing (MAST) structural testing facility utilizes equipment that studies what happens to buildings and bridges during earthquakes and other extreme events. These and other conduits for collaboration have led to consistent strength amongst the diverse departments of CSE; in the NRC’s most recent rankings of Ph.D. programs, nearly half of CSE programs ranked in the upper 10 percent of their respective peer groups.

Importantly, in April 2013, state lawmakers looked toward a long-range future and established the Minnesota Discovery, Research, and Innovation Economy (MnDRIVE) Initiative, an innovative program that has created new faculty positions and provides UMN with $18M per year in state funding targeted at the state’s key emerging industries: robotics, sensors and advanced manufacturing; global food ventures; advancing industry and conserving the environment; and discoveries and treatments for brain conditions. MnDRIVE has impacted CSE in many positive ways, in terms of faculty expansion in targeted areas, community investment and engagement, business creation, and workforce development, all coupled with the enabling of leading-edge collaborative research to directly address challenges and opportunities in the State of Minnesota.
THE UNIVERSITY OF MINNESOTA

Founded in 1851, the University of Minnesota, with its five campuses, is one of the most comprehensive universities in the country and ranks among the most prestigious research universities in the world. It is both a major research institution, with scholars of national and international reputation, and a state land-grant university, with a strong tradition of education and public engagement. The University enrolls over 65,000 students, including more than 52,000 on its Twin Cities campus, which has 19 colleges and schools. With 159 undergraduate, 135 masters, and 104 doctoral degree programs, as well as professional degrees in business, dentistry, law, medicine, pharmacy, and veterinary medicine, the University offers its students tremendous breadth and depth of opportunity in the liberal arts, sciences, agriculture, and a range of professions. With its 25,000 employees, large number of students, and various research centers and health care services, the University has an economic impact of $8.6 billion on the Minnesota economy annually. In 2014, the most recent figures available, the University had $711M in sponsored expenditures.

Reflecting its foundational land-grant mission, the University has a strong commitment to connecting its academic and research excellence with the needs of the state and advancing collaborations to address the critical challenges of the region, nation, and world. Through its commitment to public engagement, the University strives for a partnership of University knowledge and resources with those of the public and private sectors to enrich scholarship, research, and creative activity; enhance curriculum, teaching, and learning; prepare educated, engaged citizens; strengthen democratic values and civic responsibility; address critical societal issues; and contribute to the public good.

The institution’s scope and breadth are well aligned with its statutory role as the primary state-supported academic institution for research, for advanced education through the doctoral degree, and for extension activities benefiting the state of Minnesota. Its academic strength reflects the University’s unique responsibility to advance knowledge for a state in which agriculture and agribusiness loom large, and at the same time springs from the advantages and opportunities the University has as one of few major public land-grant research universities located in a major metropolitan area.

As a comprehensive and globally engaged research university with many renowned and top-ranked academic programs, the University has a geographically diverse graduate and professional enrollment profile and ranks 14th as a destination for international students in the United States.

The University of Minnesota comprises five campuses; the largest is the University of Minnesota, Twin Cities (UMTC), the flagship campus of the University of Minnesota system. This campus is among the largest public research universities in the country and offers undergraduate, graduate, and professional students a multitude of opportunities for study and research. The other UMN system campuses include the University of Minnesota, Crookston (UMC), University of Minnesota, Duluth (UMD), University of Minnesota, Morris (UMM), and University of Minnesota, Rochester (UMR). In addition, the University includes regional Extension offices, research and outreach centers, and clinics, labs, and K-12 educational outreach programs throughout the state.

The University is engaged in a comprehensive strategic planning process to make the University of Minnesota-Twin Cities preeminent in solving the grand challenges of a diverse and changing world. With this overarching vision, we will chart a dynamic future for a great 21st-century land-grant research institution.

For more information about the University of Minnesota, please visit: http://www.umn.edu.

THE ROLE OF THE DEAN

As its chief executive and academic officer, the Dean works collaboratively both within CSE and across other colleges to create a unified vision for the college and to provide strategic leadership to advance its overall quality, reputation, stature, and aspirational goals.
The Dean is responsible for overseeing and managing the college, including but not limited to: recruiting and retaining distinguished scholars and outstanding students; managing the allocation of the college’s fiscal, human, and capital resources, including space planning and the successful completion of the current capital plan; setting direction and structure for the college’s curricular and scholarly efforts to foster and promote exceptional academic degree programs and research pursuits; planning, evaluating and overseeing academic programs; managing promotion and tenure guidelines for faculty; garnering support from college alumni and from internal and external stakeholders, including non-profit and for-profit sectors, government, and educational organizations; and leading energetic efforts to secure philanthropic support, cultivating development opportunities with a broad array of constituents. Importantly, the College of Science and Engineering is focused on expanding the diversity profile of both its students and its faculty, a mission that the next Dean will promote broadly and intentionally.

As an institutional leader of the second largest college at the University of Minnesota, the Dean will advocate for the College of Science and Engineering in University-level discussions and strategic initiatives to secure further support and promotion of its academic and research agendas while protecting and advancing the significant gains made in the last decade. The Dean works with other collegiate deans as a member of the Twin Cities Deans Council to advance the educational mission of the University and to develop joint educational and research activities. At the same time, the Dean serves as a strong advocate for the college and its students to the Provost, the President, the Regents, and the citizens of the state of Minnesota, balancing the interests of CSE with those of the University as a whole. The Dean must provide leadership both for the college and the University community, protecting strengths, nurturing emerging areas, and inspiring new intellectual ideas.

**KEY OPPORTUNITIES AND CHALLENGES FOR THE DEAN**

**Sustain and promote the impressive physical, scholarly, and educational growth of the College of Science and Engineering and enhance key thematic areas with an eye toward collaboration and application**

The College of Science and Engineering has built significant strength across the sciences and engineering evidenced by its impressive, multi-disciplinary research centers and collaborations, and it aspires to even greater achievement. Much of this growth has happened organically, in an environment where communication across the disciplines is encouraged from bottom to top. The college requires a leader who can work creatively and effectively with a diverse range of internal constituencies, particularly CSE’s department heads, to identify and promote college-level directions in research and educational innovation, and who can galvanize faculty, students, and staff in pursuit of these opportunities. The college is presently in a period of ambitious space planning, construction, and renovations in the tens of millions of dollars, with key buildings, laboratory spaces, and collaborative areas receiving state-of-the-art upgrades; the Dean must continue to manage this complex process deftly, fairly, and attentively. The college has made significant strides in recent years to build capacity in leading-edge thematic areas critical to the future relevance and stature of UMN’s science and engineering, in part through close partnerships with adjacent colleges at the University of Minnesota, as well as with external industry stakeholders. These important relationships must be continually nurtured to translate scholarship into real-world application and to further the mission of CSE and the University of Minnesota.

**Advocate for and champion the College of Science and Engineering at the University and beyond, increasing its recognition regionally, and its great impact and tremendous potential nationally**

In an increasingly constrained funding environment at the state and federal level, a strong Dean who can champion the college’s contributions while advocating for greater support is critical to the vitality and continued impact of CSE. The next Dean will promote the reputation and impact of CSE’s faculty and students widely, across the University, in the state, and through presence and visibility in the national arena.
Encourage, promote, and enrich student and faculty diversity at CSE

The College of Science and Engineering has made strides in recent years to increase the diversity of its student and faculty body, and recognizes that continued progress in the college is critical to sustaining its overall growth, attracting ever more talented students and scholars, and better representing the constituents of the State of Minnesota who support its mission. The number of entering female undergraduates into the college is currently at a historic high, and overall, female students represent about 1/4th of students in the college. Particular departments, as well, have made advances in recruiting and retaining female faculty members, a priority that emerged during the college’s recent significant faculty expansion since 2009. But there remains much work to be done, and the institution continues its commitment to this central value. The next Dean will develop new strategies to recruit more women and underrepresented minority students and faculty and advance programming and more frequent academic discourse on issues such as race, gender, and class. The Dean must strive not only to strengthen the college’s broad diversity agenda, but also sustain and further enhance the positive changes in climate that have already been achieved.

Continue to support the undergraduate and graduate educational and research missions of the College of Science and Engineering in alignment with the University’s land-grant charge

The college prides itself on nurturing its highly accomplished undergraduate students. Entering freshmen have the highest average ACT score of any college at the University of Minnesota, and 40% of CSE undergraduates are engaged part-time in some form of sponsored research. These undergraduates value the supportive culture of the college, the diversity of its offerings, its connections to industry, and its myriad opportunities for project-based learning through more than 70 student groups. The next Dean must continue to support these undergraduates through presence, visibility, and attention to their needs. Steady growth in undergraduate enrollment has also come at a time when decreased federal funding for graduate fellowships has constrained graduate research programs. The Dean must seek to meet undergraduate needs for collaborative space and equipment, while at the same time ensuring support for high-quality graduate student researchers. Managing these opportunities in a thoughtful, effective, and inclusive manner, while preserving and advancing graduate opportunities to increase CSE’s competitiveness with peer institutions, will be a central charge of the next Dean.

Partner with collaborators across the University of Minnesota, particularly with the Medical School; the College of Liberal Arts; the College of Food, Agricultural, and Natural Resource Sciences; The Carlson School of Management; and the College of Biological Sciences

The diversity of CSE programs, spanning the sciences and engineering, is a key component of its formidable internal strength and a driver of its collaborations across the University of Minnesota—collaborations that greatly benefit CSE as well as its partner colleges and the University as a whole. CSE enjoys cooperation with the College of Food, Agricultural and Natural Resource Sciences through the Department of Bioproducts and Biosystems Engineering, and with the College of Liberal Arts through the School of Statistics. CSE is currently working in close partnership with the College of Biological Sciences in the development of a “Life Sciences Chemistry” curriculum to meet student demand, and through the Department of Industrial and Systems Engineering further opportunities exist to pair CSE with the highly-ranked Carlson School of Management. A key driver of success across the University has been its long-standing historical ties with the medical devices industry, a bond embodied in CSE through the Department of Biomedical Engineering, as well as through the Institute for Engineering in Medicine and the Medical Devices Center. The stewardship of these important relationships, promotion of them across the University and externally, and the discovery and creation of new collaborations, will be critical responsibilities of the next Dean of CSE.
Build relationships with industry, the legislature, the federal government, and other external partners to ensure continued support for the college’s academic and scholarly agenda

The Minneapolis-St. Paul metropolitan area is home to some of the country’s most respected companies—consumer leaders such as Target, PepsiAmericas, and the 3M Corporation, along with Ecolab, Medtronic, and Cargill. The new Dean must maintain existing ties with area and national private-sector partners, some of which collaborate already at UMN’s cutting-edge research facilities, while at the same time developing new partnerships. CSE’s Fall Career Fair is already the largest college-level career event at the University of Minnesota, and is a key recruitment tool to attract the very best undergraduate students for the future workforce in STEM professions; the Dean has traditionally played an important and visible role in this critical function of the college and will continue to do so, leveraging CSE’s strengths to seek out further opportunities for partnership and interface between students and industry. The Dean of the College of Science and Engineering effectively serves as the “Chief Technology Officer” of the State of Minnesota—advances made at UMN yield economic and technological dividends for the Minneapolis/St. Paul Community and beyond; in this capacity, the Dean is expected to maintain and build relationships with state legislators to advance the agenda of the college and the University as a whole. Furthermore, in a particularly tight federal funding environment, the Dean will be a visible figure at the federal level, interfacing directly with agencies to make the case for CSE’s strengths and bring opportunities back to the college for growth and expansion of its research enterprise.

Support the College of Science and Engineering through fundraising and “friendraising,” leveraging the College’s deep industry ties and its large and active alumni base

The College of Science and Engineering maintains extensive ties with its 65,000 strong worldwide alumni base; annually, the companies that these alumni have founded contribute $90B dollars to the world economy. Their presence in the life of the College of Science and Engineering is evidenced through research opportunities, career options, and capstone projects, and the next Dean will work to expand this support to include scholarship support for students and faculty, as well as monetary contributions to the college for its overall research enterprise. The University of Minnesota stands as one of the few Midwest Research One universities located in a major city, and is further advantaged by the vibrancy of the greater Minneapolis area and its many large private-sector partners; CSE is ideally positioned to capitalize on this proximity, and the next Dean will sustain and build upon the progress made to engage these partners to support the college.

QUALIFICATIONS

Essential

- An earned doctorate in sciences or engineering
- A distinguished scholarly reputation and strong record of academic accomplishment commensurate with appointment as a tenured full professor at the University of Minnesota
- A strong record of achievement in research, and the ability to energize and inspire faculty across diverse array of disciplines to pursue innovative avenues of research
- Strong academic administrative experience in a complex, highly matrixed organization
- Financial and budgetary acumen, including evidence of fiscally responsible management practices and a record of fiduciary transparency and accountability
- A deep, demonstrable appreciation for, and understanding of, collaboration between the sciences and engineering in addressing and solving grand challenges and an understanding of the wide variety of disciplines represented by CSE
- Demonstrated ability to lead, empower, and delegate to a strong management team
- A demonstrated commitment to the value of diversity in students, faculty, and staff; cultural awareness and an aptitude for navigating cultural differences
• Proven success in academic leadership in the context of powerful shared governance models and a deeply held commitment to, and belief in, the value of collaborative decision-making
• Strong and persuasive communication skills and the ability to advocate for the sciences and engineering to a variety of audiences
• Demonstrated success in building effective working relationships and partnerships with internal and external stakeholders, and gaining support for current and future scholarly and educational initiatives
• Demonstrated success in development and advancement; the clear ability to engage and garner external support for projects of value
• Understanding of academic knowledge production, the current higher education landscape, and national trends in the sciences and engineering

Preferred

• Demonstrated success in establishing and executing a vision or strategic plan
• An entrepreneurial mindset, and a history of encouraging entrepreneurial action amongst faculty, staff, and students
• Experience in building collaborations involving public- and private-sector organizations, systems of higher education, and leaders and organizations in the community, region, state, nation, and world
• Understanding of, and appreciation for, the historic role a public land-grant research university plays in the vitality of the surrounding community, the nation, and the world

NOMINATIONS, APPLICATIONS, AND INQUIRIES

Nominations, applications, and inquiries are being accepted for the position. Consideration of candidates will continue until the position is filled. Candidates must submit curriculum vitae and a cover letter. All candidate information will be held in strict confidence. Confidential inquiries concerning this search should be directed to Isaacson, Miller via www.imsearch.com/5610.

Stephanie Fidel, Vice President
Denise O’Grady Gaffney, Vice President
Vijay Saraswat, Senior Associate
Isaacson, Miller
263 Summer Street
Boston, MA 02210

The University of Minnesota shall provide equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression.